



Food and Agriculture
Organization of the
United Nations



Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 1: Presence of an active municipal interdepartmental government body for advisory and decision making of food policies and programmes (e.g. interdepartmental food working group, food policy office, food team)

MUFPP framework of actions' category: Governance

The indicator allows for (self) assessment of the presence, multi-stakeholder representation and integration, functioning and effectiveness of an interdepartmental/sectoral food coordination body or mechanism. It helps identify areas for improvement.

Overview table

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| MUFPP Work stream | Governance- Ensuring an enabling environment for effective action |
| MUFPP action | Facilitate collaboration across city agencies and departments and seek alignment of policies and programmes that impact the food system across multiple sectors and administrative levels, adopting and mainstreaming a rights-based approach; options can include dedication of permanent city staff, review of tasks and procedures and reallocation of resources |
| What the indicator measures | The indicator allows for (self) assessment of the presence (yes or no), multi-stakeholder representation and integration, functioning and effectiveness (with use of a scoring sheet) of an interdepartmental/sectoral food coordination body or mechanism. It helps define areas for improvement. |
| Which variables need to be measured / what data are needed | Information is collected on Presence (yes/no); Multi-stakeholder Representation and Integration; Functioning and Effectiveness. Variables and criteria used for self-assessment are indicated in the scoring sheet below. |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Not applicable. This indicator will be assessed in a qualitative way. |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Not applicable. This indicator will be assessed in a qualitative way. |

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| Possible sources of information of such data | -Self-assessment among representatives participating in the coordination body. Possibly validated by assessment of external actors. -Minutes/ reports of the food working group/ programme -External evaluation and study reports |
| Possible methods/tools for data-collection | -Group discussion for self-assessment, most likely the cheapest approach -External evaluation -Ad hoc surveys to capture opinions of stakeholders and target groups -Key informants interviews |
| Expertise required | None for the self-assessment |
| Resources required/ estimated costs | For the self-assessment: Low to none, assessment can be implemented during a meeting of the coordination body |
| Specific observations | Any self-assessment is by nature not objective. This self-assessment first and for all seeks to enable a joint learning process of stakeholders involved and enable the improvement of the interdepartmental body (functioning, planning and delivery). Furthermore, collecting and analysis of information done collectively contributes to a capacity development process. |
| Examples of application | The city of Ede (The Netherlands) has created a dedicated municipal food team of 5 people and appointed the first food councillor in the Netherlands. The team is responsible for operationalising Ede's food strategy. In 2017, an external evaluation was asked to assess the functioning of the team and the implementation of the strategy. Applying amongst others a qualitative assessment, some of the findings of the evaluation where: -Having a well-staffed food team and corresponding budget is crucial to implementation of the food strategy. -Establishment of various partnerships with other (municipal) parties that contribute to the implementation of activities has laid an important foundation for a true integral vision and anchoring in the Ede society. -However, The "Why" of the Food vision and the integral nature of the Food programme's work are currently insufficiently visible in internal and external communication. A good communication strategy needs to be developed. - Current human and administrative support will need to be better anchored in permanent structures and budgets. |

Rationale/evidence

The Milan Urban Food Policy Pact encourages interdepartmental and cross-sector coordination internal to city governments¹, working to integrate urban food policy considerations into social, economic and environment policies, programmes and initiatives, such as, inter alia, food supply and distribution, social protection, nutrition, equity, food production, education, food safety and waste reduction.

Such interdepartmental and cross-sector institutional mechanisms or bodies (food bodies, units or teams), will enhance dialogue and coordination, policy integration, impacts, and efficiency gains by 'breaking down institutional silos'. Analysis of various successful examples of such coordination mechanisms shows that key government actors include authorities that are responsible for: agriculture, health/nutrition, social protection, economic development, markets, planning, transport, and climate change².

¹ This call for coordination can be expanded to engagement of other levels of government (vertical integration) and non-governmental stakeholders (civil society, research organisations, private sector) in forming, implementing and assessing food policy. Note that these levels of coordination are also covered in Indicator 2: *Presence of an active multi-stakeholder food policy and planning structure (e.g. food policy councils; food partnerships; food coalitions)*.

² See the following reports: <http://www.milanurbanfoodpolicypact.org/good-practices/>;
<http://www.ruaf.org/publications/city-region-food-systems-and-food-waste-management-2016>;
<http://www.ruaf.org/urban-food-policies-and-programmes-overview>.

It should be noted that mere presence of an interdepartmental/sectoral coordination body (yes or no) will not provide sufficient indications on actual levels of coordination, results-impacts and gains. It will therefore be important to also assess the functioning and effectiveness of the coordination body (e.g. is it having *regular meetings*; does it have *sufficient human and financial resources* to make sure that the coordination body/mechanism functions; does the coordination mechanism actually *result* in concrete collaboration initiatives and city policies; are the functioning of the coordination body, its activities, results and impacts *monitored* to drive analysis of lessons learned and impacts as a basis for further planning and improvements).

Successful examples also highlight that clear and strong *institutionalisation* of the coordination body/mechanism in the local government structures and budgets, reduces the risks of changes in city administration and shifts in allocation of budgets and is key to mainstreaming food in municipal policies. Securing the food body and programmes through legislation also makes them more resilient to government changes.

Finally, and in order to gain broader political and public support, *transparent information sharing* on the roles, activities and achievements of the coordinating body/mechanism will be crucial.

[Glossary/concepts/definitions used](#)

Presence of a municipal interdepartmental government body for advisory and decision making of food policies and programmes: Whether the municipal government has set up a formal or informal structure that is responsible for advisory and decision-making regarding the formulation and/or implementation of food policies and programmes, and thus has a formal mandate to promote coordination across line departments and sectoral programmes.

Depending on the city, interdepartmental/sectoral coordination bodies/mechanisms on urban food policies and plans, have various denominations. These vary from a *food policy office* (e.g. the Comune di Milano has recently established a Food Policy Office called "Ufficio Segretariato del MUFPP e Coordinamento Progetti Food Policy), a *municipal food unit or secretariat* (The city of Belo Horizonte, Brazil created a Municipal Secretariat for Food Policy and Supply-SMAAB with the objective to develop an integrated urban policy for food security and to coordinate all food policies and programmes towards achieving the city's overall goal: increasing the Right to Food and access to healthy food by all its citizens). The creation of the SMAAB, with a separate administrative structure and budget, mainstreamed food security into the municipal public policy), a *food team* (as in Ede, The Netherlands) or an *interdepartmental working group* on urban food issues.

Multi-stakeholder representation and integration: Extent to which different departments and sectors within the municipal government are a member of the coordination body/mechanism. Extent to which the body coordinates and interacts with other levels of government and non-governmental stakeholders (including CSOs, NGOs, private sector, academia etc.)

Functioning and effectiveness of the coordination body/mechanism: A government supported structure that is well functioning, ensures coherence of urban food policy and programme interventions to avoid duplications and gaps across various programmes and stakeholders, and collaborates in the formulation and implementation of cross-sectoral urban food policies and programmes. Criteria used here include: Is the coordinating body adequately staffed? Have partnerships been established? Are there clear mandates/terms of reference? Is it institutionalised within the local government (supported by law)? Does the coordinating body deliver on concrete collaborative initiatives, policies, and impacts? Is the coordinating body properly funded (with a clear own budget, budget for the body and its plans are included in institutional budgets of each of the members); Are there good M&E systems and regular reporting?

Preparations

The following preparations refer to a self-assessment exercise:

1. In case a interdepartmental coordinating body exists: Inclusion of an agenda item on monitoring food governance indicators on the agenda of one of the meetings of the interdepartmental/sectoral coordination body. During this meeting all governance related indicators (1-6) can be jointly discussed by all members of the coordinating body. The monitoring guidelines can be shared with all involved prior to the meeting.
2. In case such body does not exist: the indicator can be reported on by the contact person in the city for urban food policies and the Milan Pact. This person may decide to discuss the indicator and scoring sheet with other stakeholders involved in the formulation and implementation of urban food strategies/policies/projects and action plans. The exercise may contribute to a (future) reflection and planning process on the importance, role and set up of such a coordinating body.
3. The internal self-assessment can be validated with selected external stakeholders, especially where mechanisms of information sharing are concerned.

In case other evaluations methods are selected (external evaluation, key informant interviews) respective preparations should be taken.

Sampling

In case of a self-assessment exercise: Preferably all representatives in the coordinating body should participate in the monitoring exercise. They should collectively fill in the scoring sheet provided below.

In addition, a randomly sampled number of both government and non-governmental stakeholders (citizens, research organisations, NGOs Community Based Organisations, private sector) could be asked if they are aware of the existence and roles of the coordinating body (yes/no) and if they have access to information on its existence and performance (yes/no). Such questions could be included in a broader food-related survey. Perceptions of these or of specific stakeholders on other scoring variables could also be sought, if desired.

Data collection and data disaggregation

During a meeting of the coordinating body the following scoring sheet can be discussed and filled. Individual members may first want to make their own assessment before discussing this in the larger group. Alternative, a facilitator could from the start guide group discussion and assessment in an interactive and participatory way. Specific observations made during the meeting (for example on levels of consensus or differences in opinions and scores) can be added in the final column and used for future reference or further discussions. Also recommendations for improvement can be added here.

Scoring sheet

| Characteristics | Self-assessment and explanation | | | Total score | Disaggregation of information | Specific observations / Recommendations |
|---|---------------------------------|-------------|--|--------------|---|---|
| Presence of an interdepartmental/sectoral coordination body on urban food (within the municipality) | | | | | | |
| Presence: | Yes =1 point | No=0 points | X A coordination body exists but is | Total score: | Provide information on the type of coordinating body and its focus (only urban agriculture, the | |

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|---|---|--|--|--------------|---|--|
| | | | set up and managed by non-governmental stakeholders | | broader urban food system). | |
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| Multi-stakeholder representation and integration | | | | | | |
| Representation: Representation in the coordinating body of different departments and sectors within the city government | Strong= 2 points Strong: The coordination mechanism has a large representation of different sectors, including a.o. agriculture, health/nutrition, social protection. | Moderate= 1 point Moderate: The coordination mechanism has representation of a couple of sectors | Low= 0 points Low: The coordination mechanism has quite limited representation of different sectors (very few sectors) | Total score: | -List and number of different sectors participating and their roles -List sectors not engaged that could be involved in future | |
| Vertical integration: The interdepartmental body coordinates actions with other governments at local, national and intergovernmental levels | Strong= 2 points Strong coordination with one or more other levels of government (neighbourhood, province, country) or other municipal governments in the city region | Moderate= 1 point Moderate coordination with one or more other levels of government (neighbourhood, province, country) or other municipal governments in the city region | Weak=0 points Weak coordination with one or more other levels of government (neighbourhood, province, country) or other municipal governments in the city region | Total score: | -List and number of other governments engaged and forms of coordination -List governments/ levels not engaged that could be involved in future | |
| | | | | | | |
| Multi-stakeholder integration: The interdepartmental body coordinates actions with other non-governmental stakeholders (civil society groups, research, private sector) | Strong=2 points Strong coordination with one or more other non-government stakeholders (civil society, research, private sector) | Moderate= 1 point Moderate coordination with one or more other non-government stakeholders | Weak=0 points Weak coordination with other non-government stakeholders | Total score: | -List and number of other non-governmental stakeholders engaged and forms of coordination --List of other non-governmental stakeholders not engaged that could be involved in future <i>(Note: See further Indicator 2 on Presence of an active multi-stakeholder food policy and planning structure)</i> | |
| | | | | | | |

| Functioning and effectiveness: | | | | | | |
|--|--|---|---|--------------|--|--|
| Criteria: | | | | | | |
| 1. It has a clear mandate | | | | | | |
| 2. It is institutionalised in the local government structure | | | | | | |
| 3. It has regular meetings during the year | | | | | | |
| 4. Members actively participate in meetings and decision-making and contribute to the dialogue | | | | | | |
| 5. The coordination body/mechanism has an adequate number of human resources dedicated to the functioning of the coordination mechanism | | | | | | |
| 6. It has adequate financial resources allocated to the functioning of the coordination body/system (Note that funding for implementation of an urban food strategy or programme is covered under Indicator 3). | | | | | | |
| 7. It has regular information exchange; information is widely shared within the city government and with a larger general public on the existence, role, activities and achievements of the coordinating food body | | | | | | |
| 8. It engages in urban food policy/programme formulation; cross departmental/ city initiatives /policies have emerged from the coordinating food body | | | | | | |
| 9. It has power over its members to enforce recommendations and hold them accountable | | | | | | |
| 10. The functioning and activities of the coordination body are monitored, as are results and impacts of its activities to guide further planning and inform on its impacts and policy contributions. | | | | | | |
| Functioning and effectiveness: The coordinating body is well functioning, ensures coherence of urban food policy and programme interventions and collaborates in the formulation and implementation of cross-sectoral urban food policies and programmes. | Strong= 2 points A minimum of 6-10 criteria apply | Moderate = 1 point A minimum of 3-6 criteria apply | Low= 0 points Less than 3 criteria apply | Total score: | Provide information on: -Mandate/ Terms of Reference -Level of institutionalisation: Indicate the policy decision and/or law institutionalising the body and its current statute; indicate levels of integration in institutional budgets and programmes -Number and type of meetings held and agenda points discussed -Staff numbers and time dedicated -Amount and source of budget available for the functioning of the coordination body -Number and types of programmatic collaborations on food (between 2 or more departments) and other city initiatives/policies designed, implemented or planned. -Monitoring mechanisms, tools and reports - Information and outreach mechanisms and target groups | |
| | | | | | | |
| Total score: | | | | | | |

Note: For the purposes of these guidelines certain qualifiers and scoring points are defined in the scoring sheet above as to determine an overall score or value of the indicator. Nevertheless, for certain cities some of the qualifiers or scoring levels will be more crucial than others to determine the score of the indicator. Cities could, based on the local context and priorities, identify other or additional key qualifiers or scoring levels to define the overall score of the indicator. For example, one city may decide that the allocation of a budget is the key qualifier to define the functioning and effectiveness of an active municipal interdepartmental government body –and thus given this criterion an additional

scoring point-, while another city may consider other qualifiers more relevant for the same indicator. Alternatively a city could decide to score each of the 10 criteria for functioning and effectiveness with 1 point, with a total possible score of 10 points.

In a similar way, a city may decide to give more importance to multi-stakeholder representation and integration and use a more detailed scoring system for scoring these variables: yes= the coordination body is coordinating with specific stakeholders (civil society, private sector, academia/research; specific other levels of government or other municipal governments) = 1 point per stakeholder; no coordination = 0 points.

Data analysis/calculation of the indicator

Based on the scoring and further (disaggregated) information provided, members of the coordinating body may jointly identify areas for strengthening or improvement. Preferably, such action plan would be developed in the same or a following meeting of the coordinating body, during which each of the members confirm their commitments and agree on further (regular) monitoring and information exchange. The self-assessment exercise can be repeated once a year to monitor uptake of agreed improvements/changes.



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July 2018 version

Indicator 2: Presence of an active multi-stakeholder food policy and planning structure (e.g. food policy councils; food partnerships; food coalitions)

MUFPP framework of actions' category: Governance

The indicator allows for (self) assessment of the presence, multi-stakeholder representation and functioning and effectiveness of a multi-stakeholder body or mechanism for urban food policy and planning. It helps define areas for improvement.

Overview table

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|--|---|
| MUFPP Work stream | Governance- Ensuring an enabling environment for effective action |
| MUFPP action | Enhance stakeholder participation at the city level through political dialogue, and if appropriate, appointment of a food policy advisor and/or development of a multi-stakeholder platform or food council, as well as through education and awareness raising. |
| What the indicator measures | The indicator allows for (self) assessment of the presence (yes or no), multi-stakeholder representation, functioning and effectiveness (with use of a scoring sheet) of a multi-stakeholder body or mechanism for urban food policy and planning. It helps define areas for improvement. |
| Which variables need to be measured / what data are needed | Information is collected on Presence (yes/no); Multi-stakeholder Representation; Functioning and Effectiveness. Variables and criteria used for self-assessment are indicated in the scoring sheet below. |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Not applicable. This indicator will be assessed in a qualitative way. |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Not applicable. This indicator will be assessed in a qualitative way. |
| Possible sources of information of such data | -Self-assessment among representatives participating in the multi-stakeholder body. Possibly validated by assessment of external actors. -Minutes/reports of the food council/partnership/programme -External evaluation and study reports |

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| Possible methods/tools for data-collection | <ul style="list-style-type: none"> -Group discussion for self-assessment, most likely the cheapest approach -External evaluation -Ad hoc surveys to capture opinions of stakeholders and target groups -Key informants interviews |
| Expertise required | None for the self-assessment |
| Resources required/estimated costs | For the self-assessment: Low to none, assessment can be implemented during a meeting of the multi-stakeholder body |
| Specific observations | Any self-assessment is by nature not objective. This self-assessment first and for all seeks to enable a joint learning process of stakeholders involved and enable the improvement of the multi-stakeholder body (functioning, planning and delivery). Furthermore, collecting and analysis of information done collectively contributes to a capacity development process. |
| Examples of application | The city of Toronto created a multi-stakeholder food policy council in 1991 (http://tfpc.to/). The food policy council assessed its own functioning, to allow also sharing of experiences with other cities. For more information on the Toronto Food Policy Council and the different stakeholders involved see Annex 1. |

Rationale/evidence

Multi-stakeholder processes are increasingly considered to be an important element of policy design, action planning and implementation. By involving multiple stakeholders in decision-making, it is much more likely that policies and programmes will be developed that are more inclusive and more successful in their implementation.

Although city governments may collaborate in food related projects and programmes with one or more other stakeholders (e.g. private sector, NGOs, research), this stakeholder participation is often narrowly determined by a single project, donor request or other and may not necessarily form part of a more formalised stakeholder engagement strategy.

The Milan Urban Food Policy Pact calls for full and meaningful inclusive multi-sector and multi-stakeholder engagement in food advisory and policy bodies and structures, that seek to form, implement, assess and revise food policy to encourage equitable, resilient and sustainable food systems. Such multi-stakeholder bodies can take the form of a food policy council, multi-stakeholder working group or food coalition.

Such multi-stakeholder mechanisms and bodies should be promoted at four different levels:

- (i) **Among various departments and programmes internal to city governments** (“horizontal integration”). See indicator 1: *Presence of an active municipal interdepartmental government body for advisory and decision making of food policies and programmes*.
- (ii) **Urban and rural local governments in a given (functional) city region** that promote cross-jurisdictional dialogue and collaboration among urban and rural authorities that are not generally used to engaging in joint policy and planning¹;
- (iii) **Multi- or vertical levels of government** that link local urban food system programmes to the wider (sub)national policy framework on agriculture, food and nutrition security, and urban development. The involvement of subnational (provincial, county) and national governments is vital to addressing food systems, agriculture, food waste, and land use planning across several jurisdictions (outside municipal boundaries) and to ensuring the aggregation of rural and urban food production needed to offer consumers a diversified and sufficient safe and nutritious supply of produce. They also play a crucial role in making available (additional) human and financial resources needed for programme implementation, for developing (sub)national level policies and programmes that accompany city-level strategies, and for supporting the scaling out of experiences to other areas.
- (iv) **Different types of stakeholders** including research, civil society groups (NGOS, Community Based Organisations, social movements, consumer groups), private sector (food producers, processing, retail, catering and non-food urban based actors like landowners, financing, housing, water and energy companies), and governments, ensuring real community participation and mobilising public-private-civil sector support.

Like for Indicator 1 (*Presence of an active inter an active municipal interdepartmental government body for advisory and decision making of food policies and programmes*), it should be noted that mere presence of a multi-stakeholder mechanisms/body will not provide sufficient indications on actual levels of multi-stakeholder engagement and coordination, results-impacts and gains. It will therefore be important to also assess the functioning and effectiveness of the multi-stakeholder body (e.g. is it having *regular meetings*; does it have *sufficient human and financial resources* to make sure that the multi-stakeholder body functions; does the multi-stakeholder body actually *work on* concrete collaboration initiatives and city policies; are the functioning of the multi-stakeholder body, its

¹ The Metropolitan District of Quito (Ecuador) and the Toronto Greater Golden Horseshoe Food and Farming Alliance (<http://www.foodandfarming.ca/>) are among the multi-stakeholder bodies that have linked urban and rural authorities and created networks to support joint food policy and planning.

activities, results and impacts *monitored* to drive analysis of lessons learned and impacts as a basis for further planning and improvements).

Successful examples also highlight that clear and strong *institutionalisation* of the multi-stakeholder body/mechanism in local government or institutional structures and budgets, reduces the risks of institutional and staff changes and shifts in allocation of budgets, and is key to mainstreaming food in government and institutional policies and plans. Securing the multi-stakeholder food body and programmes through legislation also makes them more resilient to government changes.

In order to gain broader political and public support, *transparent information sharing* on the roles, activities and achievements of the coordinating body/mechanism will be crucial. Finally, specific attention should be paid to facilitating *the inclusion of the urban poor and vulnerable groups*².

Glossary/concepts/definitions used

Presence of a multi-stakeholder food policy and planning structure or body: Whether the municipal government has set up a formal or informal structure that is responsible for advisory and decision-making regarding the formulation and/or implementation of food policies and programmes, and thus has a formal mandate to promote coordination across different municipal programmes, among urban and rural governments, among different levels of governments and with a variety of non-governmental stakeholders.

Depending on the city, these multi-stakeholder bodies on food policy and planning have various denominations. Food policy councils (or partnerships or coalitions) are the most known. The **Food Policy Council** (FPC) model has emerged in North America over the last three decades as an attempt to address gaps in food policy and planning. Today over 100 food policy councils exist across North America, Europe and other continents in cities and regions with growing food movements. FPCs have proven to have synergistic value, creating new relationships, partnerships, and programs. FPCs bring together diverse stakeholders to study a local food system and offer recommendations for policy change, members represent the full spectrum of food system activities: farmers, gardeners, chefs, restaurateurs, food processors, wholesalers, farm and food worker advocates, grocers, consumers, public health practitioners, anti-hunger and food security advocates and government representatives. Though they take many forms and serve different purposes, FPCs are united in their interest to transform the food system through collaboration³.

Multi-stakeholder representation: Extent to which different governmental and non-governmental stakeholders are a member of the multi-stakeholder food body. This can involve:

- Horizontal integration** and representation on urban and territorial food systems – i.e., across departments and sectors in city governments.
- Vertical integration** and representation: i.e., across governments at local, national and intergovernmental levels.
- Government versus non-governmental representation.

The concept of **stakeholders** has emerged in recent decades as crucial for understanding decision-making and policy formulation on a wide range of issues. It supplements (and to a certain extent

² See further: Dubbeling, M, H. de Zeeuw and R. van Veenhuizen, 2011. Cities, poverty and food: multi-stakeholder policy and planning in urban agriculture. RUAF Foundation and Practical Action. <http://www.ruaf.org/publications/cities-poverty-and-food-multi-stakeholder-policy-and-planning-urban-agriculture>. See also Dubbeling M. and H. de Zeeuw. Process and tools for multi-stakeholder planning of the urban agro-food system. In: De Zeeuw H. and P. Drechsel. Cities and agriculture-Developing Resilient Urban Food Systems, 2015. Earthscan. <http://www.ruaf.org/process-and-tools-multistakeholder-planning-urban-agro-food-systems>

³ See also: Sussman L. and K. Bassarab, 2017. 2016 Food Policy Council Report. Johns Hopkins Center for a Livable Future. <http://www.foodpolicynetworks.org/food-policy-resources/?resource=933>

supplants) the related concept of actors. 'Stakeholders' refers to all individuals, groups and organizations that play a role in a policy process and have an interest in the policies or plans that are to be developed, either as individuals or as members of a group or organisation. This includes people who influence a decision, or can influence it, as well as those affected by it. Stakeholders in the urban food system typically include:

1. Various types of actual rural, peri-urban and urban farmers and consumers / groups / organisations
2. Actors involved in different parts of the food chain including processing industry, wholesale and retailers, input supply, restaurants, markets, waste management, consumers etc.
3. Different municipal, metropolitan and provincial departments, NGO's, universities/research institutes, community based organisations and support organisations dealing with food and related areas (transport, health, agriculture, economic development, land use planning, parks and green spaces, social and educational programmes, etc.).

Functioning and effectiveness of the multi-stakeholder body: A government supported structure that is well functioning, ensures coherence of urban food policy and programme interventions to avoid duplications and gaps across various programmes and stakeholders, and collaborates with multiple stakeholders in the formulation and implementation of urban food policies and programmes. Criteria used here include: Is the multi-stakeholder body adequately staffed? Have partnerships with different stakeholders been established? Are there clear mandates/terms of reference? Is it institutionalised within the local government (supported by law, with a clear own budget, budget for the body and its plans are included in institutional budgets of each of the member organisations)? Is the multi-stakeholder body properly funded (budget)? Does the multi-stakeholder body deliver on concrete collaborative initiatives, policies, and impacts? Are there good M&E systems and regular reporting?

Preparations

The following preparations refer to a self-assessment exercise:

1. In case a multi-stakeholder food body exists: Inclusion of an agenda item on monitoring food governance indicators on the agenda of one of the meetings of the multi-stakeholder food body. During this meeting all governance related indicators (1-6) can be jointly discussed by all members of the multi-stakeholder food body. The monitoring guidelines can be shared with all involved prior to the meeting.
2. In case such body does not exist: the indicator can be reported on by the contact person in the city for urban food policies and the Milan Pact. This person may decide to discuss the indicator and scoring sheet with other stakeholders involved in the formulation and implementation of urban food strategies/policies/projects and action plans. The exercise may contribute to a (future) reflection and planning process on the importance, role and set up of such a multi-stakeholder food body.
3. An internal self-assessment can be validated with selected external stakeholders, if so desired.

In case other evaluations methods are selected (external evaluation, key informant interviews) respective preparations should be taken.

Sampling

In case of a self-assessment exercise: Preferably all representatives in the multi-stakeholder body should participate in the monitoring exercise.

A randomly sampled number of both government and non-governmental stakeholders (citizens, research organisations, NGOs Community Based Organisations, private sector) could be asked if they

are aware of the existence and roles of the multi-stakeholder food policy and planning body (yes/no) and if they have access to information on its existence and performance (yes/no). Such questions could be included in a broader food-related survey. Perceptions of these or of specific stakeholders on other scoring variables could also be sought, if desired.

Data collection and disaggregation

During a meeting of the multi-stakeholder body the following scoring sheet can be discussed and filled. Individual members may first want to make their own assessment before discussing this in the larger group. Alternative, a facilitator could from the start guide group discussion and assessment in an interactive and participatory way. Specific observations made during the meeting (for example on levels of consensus or differences in opinions and scores) can be added in the final column and used for future reference or further discussions. Also recommendations for improvement can be added here.

Scoring sheet

| Characteristics | Self-assessment and explanation | | | Total score | Disaggregation of information | Specific observations/ Recommendations |
|---|---|---|---|--------------|---|--|
| Presence of a multi-stakeholder body on urban food policy and planning | | | | | | |
| Presence: | Yes =1 point | No=0 points | X A multi-stakeholder body exists but is set up and managed by non-governmental stakeholders | Total score: | Provide information on the type of multi-stakeholder body and its focus (only urban agriculture, the broader urban food system). | |
| | | | | | | |
| Multi-stakeholder representation and integration | | | | | | |
| Representation: Representation in the multi-stakeholder body of different departments and sectors within the city government | Strong= 1 point Strong: The multi-stakeholder body has a large representation of different sectors, including a.o. agriculture, health/nutrition, social protection. | Moderate= 1 point Moderate: The multi-stakeholder body has representation of a couple of sectors (few sectors) | Low= 0 points Low: The multi-stakeholder body has quite limited representation of different sectors (very few sectors) | Total score: | -List and number of different sectors participating and their roles -List sectors not engaged that could be involved in future | |
| Vertical integration: The multi-stakeholder body integrates other governments at local, national and intergovernmental levels (vertical integration) | Yes= 1 point | No=0 points | Scoring per category: | Total score: | For each category: -List and number of other governments participating and their roles -List governments/ levels not engaged that could be involved in future | |
| | Participation of neighbourhood/district level governments | No participation of neighbourhood/ | | | | |

| | | | | | | |
|---|--|---|--|--------------|--|--|
| | | district level governments | | | | |
| | Participation of other municipal governments in the city region | No participation of other municipal governments in the city region | | | | |
| | Participation of other sub-national higher levels (e.g. province) of governments | No participation of other sub-national higher levels (e.g. province) of governments | | | | |
| | Participation of the national government | No participation of the national government | | | | |
| | Others... | | | | | |
| Multi-stakeholder participation: The multi-stakeholder body counts with participation of other non-governmental stakeholders (civil society groups, research, private sector) | Yes= 1 point | No=0 points | Scoring per category: | Total score: | -List and number of other non-governmental stakeholders participating and their roles --List other non-governmental stakeholders not engaged that could be involved in future | |
| | Participation of civil society | No participation of civil society | | | | |
| | Participation of consumers | No participation of consumers | | | | |
| | Participation of private sector | No participation of private sector | | | | |
| | Participation of academia/research | No participation of academia/research | | | | |
| | Other... | | | | | |
| Social inclusion: representation of specific vulnerable groups (youth, women, migrants, low income consumers/producers) | Yes= 1 point | No=0 points | Scoring per category (optional) | Total score: | -List and number of vulnerable groups participating and their roles --List vulnerable groups not engaged that could be involved in future | |
| Functioning and effectiveness: | | | | | | |

| | | | | | | |
|--|---|--|--|--------------|--|--|
| Criteria: <ol style="list-style-type: none"> 1. It has a clear mandate 2. It is institutionalised in the local government structure 3. It has regular meetings during the year 4. Members actively participate in meetings and decision-making and contribute to the dialogue 5. The multi-stakeholder body has an adequate number of human resources dedicated to the functioning of the coordination mechanism 6. It has adequate financial resources allocated to the functioning of the multi-stakeholder body (Note that funding for implementation of an urban food strategy or programme is covered under Indicator 3). 7. It has regular information exchange; information is widely shared within the city government and with a larger general public on the existence, role, activities and achievements of the multi-stakeholder body 8. It engages in urban food policy/programme formulation; cross departmental, governmental and multi-stakeholder food initiatives /policies have emerged from the multi-stakeholder body 9. It has power over its members to enforce recommendations and hold them accountable 10. The functioning and activities of the multi-stakeholder body are monitored, as are results and impacts of its activities to guide further planning and inform on its impacts and policy contributions. | | | | | | |
| Functioning and effectiveness: The coordinating body is well functioning, ensures coherence of urban food policy and programme interventions and collaborates in the formulation and implementation of cross-sectoral urban food policies and programmes. | Strong= 2 points A minimum of 6-10 criteria apply | Moderate = 1 point A minimum of 3-6 criteria apply | Low= 0 points Less than 3 criteria apply | Total score: | Provide information on: -Mandate/ Terms of Reference -Level of institutionalisation: Indicate the policy decision and/or law institutionalising the body and its current statute; indicate levels of integration in institutional budgets and programmes -Number and type of meetings held and agenda points discussed -Staff numbers and time dedicated -Amount and source of budget available for the functioning of the coordination body -Number and types of programmatic collaborations on food (between 2 or more departments) and other city initiatives/policies designed, implemented or planned. -Monitoring mechanisms, tools and reports - Information and outreach mechanisms and target groups | |
| Total score: | | | | | | |

Note: For the purposes of these guidelines certain qualifiers and scoring points are defined in the scoring sheet above as to determine an overall score or value of the indicator. Nevertheless, for certain cities some of the qualifiers or scoring levels will be more crucial than others to determine the score of the indicator. Cities could, based on the local context and priorities, identify other or additional key qualifiers or scoring levels to define the overall score of the indicator. For example, one city may decide that the allocation of a budget is the key qualifier to define the functioning and effectiveness of a multi-

stakeholder food policy and planning body –and thus given this criterion an additional scoring point-, while another city may consider other qualifiers more relevant for the same indicator. Alternatively a city could decide to score each of the 10 criteria for functioning and effectiveness with 1 point, with a total possible score of 10 points.

Data analysis/calculation of the indicator

Based on the scoring and further (disaggregated) information provided, members of the multi-stakeholder body may jointly identify areas for strengthening or improvement. Preferably, such action plan would be developed in the same or a following meeting of the multi-stakeholder body, during which each of the members confirm their commitments and agree on further (regular) monitoring and information exchange. The self-assessment exercise can be repeated once a year to monitor uptake of agreed improvements/changes.

Annex 1: The Toronto Food Policy Council (TFPC)

The TFPC was established by the Toronto City Council in 1991 as a subcommittee of the Board of Health to advise the City of Toronto on food policy issues. The idea for the TFPC was championed by Councillor Jack Layton, and grew out of a 'healthy city' initiative that the City was leading. The TFPC brings together citizens and local policy makers engaged in food issues, and by doing so has become a focal point for new policy dynamics surrounding food and agriculture in Toronto and provides a forum for action across the food system. Initially, the focus of the TFPC was mainly on food and public health, but now it covers all aspects of the food system, including agriculture, economic development, wellbeing, social justice, and environmental sustainability.

The TFPC has up to 30 members (see figure 1 below), along with 1 full-time coordinator. Members include individuals from the Board of Health, City Councillors (who play an important role in linking work of the TFPC to wider city processes), the Toronto Youth Policy Council, individuals from farm and rural communities in the Greater Toronto Area, as well as up to 22 citizen members including members from Toronto Public Health, Toronto City Council, University of Toronto, the non-profit Young Urban Farmers Community Shared Agriculture, Everdale Environmental Learning Centre, Toronto and Region Conservation Authority, Greater Toronto Area Agricultural Action Committee, Evergreen Brick Works, FoodShare Toronto, The Stop Community Food Centre, Toronto Youth Food Policy Council, Ryerson University, food lawyers, and community activists. Members are appointed for three-year terms. Consistent efforts are needed to ensure good participation of the private sector.

Today's Food Policy Council has primarily four functions:

1. To act as a **forum** for food issues, fostering communication among sectors, communities and different groups within the food system;
2. To raise public awareness, **coordinate between issue sectors, and integrate issues** of food, health, transportation and economic development;
3. To generate **locally appropriate policy** to change the context for agriculture, hunger, health, and other local issues; and
4. To formulate **programmes** that implement local solutions to the most pressing failures of our current food system.

TFPC meetings are held once a month and are open to the public. Meetings alternate in discussing strategic initiatives (once every 2 months) and in presenting activities of different working groups (in the alternate months). Working groups for example work on public markets, promoting good food markets (affordable food in low income markets), food waste, food poverty and food sovereignty.

The TFPC has a small own budget (ca. 15,000 USD/year). Much of the funded food work is embedded in other programme and institutional member budgets and may not specifically be allocated to food. Under an overall guiding Food Strategy, TFPC and its members support many initiatives that together create food system change.

TFPC developed a monitoring matrix for Food Policy Analysis: it analysed each project and presented overlapping themes for food systems change. So far key impact indicators on poverty, health, etc. are not used as this diverts too much energy and resources from other projects. In specific cases, monitoring is done at project specific level.

Over the past two decades the TFPC has made significant contributions to the GrowTO Urban Agriculture Action Plan, Golden Horseshoe Food and Farm Action Plan, Toronto Food Strategy, Toronto Environmental Plan, Toronto Food Charter, the Official Plan, and the Toronto Food and Hunger Action Plan, and has facilitated City engagement with the Greater Toronto Area Agricultural Action Committee. As part of this work, Toronto adopted a Food Charter in 2001 and a Food Strategy in 2010.

Figure 1: Stakeholders involved in the TFPC.





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Indicator 3: Presence of a municipal urban food policy or strategy and/or action plans

MUFPP framework of actions' category: Governance

The indicator allows for (self) assessment of the presence and level of implementation of a municipal urban food strategy/policy and/or action plan. If desired, critical assessment of the actual strategy/policy or action plan itself may be implemented in addition. Both exercises help define areas for improvement.

Overview table

| | |
|--|---|
| MUFPP Work stream | Governance- Ensuring an enabling environment for effective action |
| MUFPP action | Develop or revise urban food policies and plans and ensure allocation of appropriate resources within city administration regarding food-related policies and programmes; review, harmonise and strengthen municipal regulations; build up strategic capacities for a more sustainable, healthy and equitable food system balancing urban and rural interests. |
| What the indicator measures | The indicators allows for (self) assessment of the presence and level of implementation of a municipal urban food strategy/policy and/or action plan with use of a scoring sheet. If desired, critical assessment of the actual strategy/policy or action plan itself may be implemented in addition. Both exercises help define areas for improvement. |
| Which variables need to be measured / what data are needed | First, information is collected on Presence of a food strategy/policy and/or action plan, Level of implementation, Budget, and Transparency. Further in-depth critical assessment of the food strategy/policy/action plan itself requires information to be collected on Justification, Vision and Objectives, Policy measures and instruments, Targets and monitoring; Institutional framework and Financial resources. |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Metrics proposed include: -Amount (and sources) of budget for the urban food policy/strategy/plan; % of total municipal budget spend on the urban food policy/strategy/plan -Number and type of information and outreach mechanisms and target groups |
| Unit(s) of Analysis | Specific target groups: income or socioeconomic wealth class, age, specific areas in the city, specific other groups |

| | |
|--|--|
| <i>(i.e. people under 5 years old, etc.)</i> | |
| Possible sources of information of such data | <ul style="list-style-type: none"> -Self-assessment among stakeholders involved in the urban food policy/strategy/action plan (including those participating in an interdepartmental coordinating or multi-stakeholder food body). Possibly validated by assessment of external actors. -Minutes/ reports on implementation and monitoring of the urban food policy/strategy/action plan -External evaluation and study reports |
| Possible methods/tools for data-collection | <ul style="list-style-type: none"> -Group discussion for self-assessment and analysis of the strategy/policy/action plan documents, most likely the cheapest approach -External evaluation -Ad hoc surveys to capture opinions of stakeholders and target groups -Key informants' interviews |
| Expertise required | Expertise in policy formulation/strategic planning |
| Resources required/estimated costs for monitoring | <p>The first level of assessment will not require a large amount of funding. It can for example be implemented during a meeting of an interdepartmental coordinating or multi-stakeholder food policy and planning body if these exist. The in-depth critical assessment of the strategy/policy/action plan requires specific effort and sufficient staff time.</p> <p>Note that the development or revision of an urban food strategy/policy or action plan requires its own human and financial resources.</p> |
| Specific observations | |
| Examples of application | <p>The City of Ghent (Belgium) developed in 2015 its Food Strategy, which includes clear strategic and operational goals. Through participatory approaches, initiatives corresponding to these goals are co-created and co-developed with different relevant stakeholders. The food strategy only has had limited dedicated funds. But through building synergies with other government programmes and sectors, such as poverty reduction, urban planning, activating temporary spaces, a large number of initiatives have been made possible. These are keys to ensure success.</p> |

Rationale/evidence

Local governments that have signed the Milan Urban Food Policy Pact have all acknowledged and (re)claimed jurisdictional responsibility for food systems activities that directly impact the health and well-being of their residents. Cities and citizens increasingly recognise that local authorities and governments have a role to play to address problems related to urban food insecurity, hunger, the increase of diet-related chronic diseases, the growing dependency on global food markets and large-scale supermarket chains, and the growing vulnerability of the urban food system (distortions in globalised food supply chains, impacts of climate change).

A local government can choose to implement one or more specific, spatial (from neighbourhood level to city-wide programmes) and time-bound projects and programmes on urban food systems or decide to develop a specific policy. The scope and focus of these policies and/or programmes vary widely, ranging from single-issue policies and plans that address one or more specific elements of the food system (e.g. policies to support residential and community gardening, municipal local food procurement policies, policies to improve the food distribution network in underserved areas of the city, food waste reduction and management plans, programmes supporting urban agriculture, farmers markets, nutrition campaigns) to comprehensive approaches that seek to assess and plan the urban food system including the complex interactions between its various components (production, transport, processing, distribution, consumption and waste-management) and the social, ecological and economic interactions between the food system and other urban systems. This indicator refers to the presence of such a comprehensive municipal urban food policy or strategy and/or action plans.

The mere presence of such municipal urban food policy, strategy and/or action plan (present or not) will not provide sufficient indications on its actual implementation, results and impacts and gains. It will therefore be important to also assess if the policy/strategy and/or action plans are actually *implemented* by the city and other engaged stakeholders and have specific or programmatic *budgets* allocated to them. Budgets for implementation can be allocated in the city's annual budget, in institutional budgets of other stakeholders (other levels of government, non-governmental stakeholders- see also indicator 2 *Presence of an active multi-stakeholder food policy and planning structure*) or (regularly) included in other city departmental projects and programmes and budgets that include specific food activities. If possible, it is important that the community, voluntary sector and business contributions are shown in conjunction to municipal funding, as the funding the voluntary sector or businesses attract is sometimes more than that invested by the local authority.

As for indicator 1 (*Presence of an active inter an active municipal interdepartmental government body for advisory and decision making of food policies and programmes*), and 2 (*Presence of an active multi-stakeholder food policy and planning structure*), and in order to gain broader political and public support, *transparent information sharing* on the existence, implementation and impacts of the food policy/strategy or action plan will be crucial.

If desired, the actual food strategy/policy or actions plans can themselves be critically assessed on a variety of issues, including its justification, objectives, selected policy measures and instruments, institutional framework, financial resources and monitoring. A specific methodology is suggested for this purpose.

Glossary/concepts/definitions used

Food strategy: Food strategies can take many forms, and are conditioned by their local context. The term 'food strategy' is referred to by the Milan Urban Food Policy Pact as a process consisting of how a city envisions change in its food system, and how it strives towards this change. Food strategies aim to place food on the urban agenda, capitalising on efforts made by existing actors and creating synergistic effects by linking different stakeholder groups. For this purpose, a Food Strategy is the document which sets out a long-term vision for food in a given area/multiple areas (e.g., securing food security, ensuring food commercial vibrancy reducing food waste). The key priorities outlined in a food strategy are variable, depending on the local need of the community.

Food action plan: A Food Action Plan (or a Food Implementation Plan) sets out the priority projects, and the key partnerships, needed to move from strategy to action. An action plan covers the delivery period of the projects and activities that will be implemented over a fixed time period. The action plan reaffirms the strategy's priorities themes, but it aims to focus on the delivery of those priorities. An [action](#) plan has three major components (1) Specific tasks: what will be done and by whom; (2) Time horizon: when will it be done; (3) Resource allocation: what specific funds are available for specific activities.

Food policy: A food policy is the sum total of food actors' actions, from signals of intent to the final outcomes, which effect how food is produced, processed, distributed, purchased, protected and disposed. A food policy does not always need laws (in some cases, for instance, food policies can be made without any new laws). In other words, the law is only one of the ingredients which constitute a policy. A food policy is in fact the result of a set of activities: agenda setting, policy making, implementation process and evaluation.

Preparations

For the self-assessment:

1. In case an urban food policy/strategy/plan exists: organisation of a meeting with as many stakeholders as possible involved in the formulation and implementation of the food strategy/policy/action plan. During this meeting one or all governance related indicators (1-6) could be jointly discussed. The respective monitoring guidelines can be shared with all involved prior to the meeting.
2. In case an urban food policy/strategy/plan does not exist: the indicator can be reported on by the contact person in the city for urban food policies and the Milan Pact. The exercise may contribute to a (future) reflection and planning process on the importance, role and set up of such urban food policy/strategy or action plan.
3. The (self) assessment can be validated with selected external stakeholders, also to get wider inputs on possible areas for improvement.

In case other evaluation methods are selected (external evaluation, key informant interviews) respective preparations should be taken.

Sampling

Preferably all –as many as possible- stakeholders involved in the formulation and implementation of the food strategy/policy/action plan should participate in the monitoring exercise.

For the general assessment: In addition, a randomly sampled number of external stakeholders not participating in the design and implementation of the urban food policy/strategy/action plan could be asked if they are aware of the existence, content and results of a municipal urban food strategy/policy/action plan (yes/no). Such questions could be included in a broader urban food-related survey.

For the in-depth assessment: In addition, a randomly sampled number of representatives of different target groups and government and institutional representatives that were/are not directly involved in the food strategy/policy/action plan formulation and implementation could be consulted in a specifically organised review meeting.

Data collection and data disaggregation

During a monitoring/review meeting the following scoring sheet and table can be discussed and filled. Specific observations made during the meeting can be added in the final column. Also recommendations for improvement can be added here.

Scoring sheet: General assessment on presence of an urban food policy/strategy/action plan, budget for implementation and information sharing

| Characteristics | Scoring | | Total score: | Disaggregation of information | Observations/Recommendations |
|---|--------------|--------------|--------------|---|------------------------------|
| Presence of a municipal urban food policy | Yes= 1 point | No= 0 points | | Add the strategy document and summarise its content | |
| | | | | | |
| Presence of a municipal urban food strategy | Yes= 1 point | No= 0 points | | Add the policy document and summarise its content | |
| | | | | | |
| Presence of (a) municipal urban food action plan(s) | Yes= 1 point | No= 0 points | | Add the action plan and summarise its content | |
| | | | | | |

| | | | | | | |
|--|--|---|--|--|--|--|
| Level of institutionalisation | The policy/strategy/action plan is backed up by a law, bylaw, ordinance | The policy/strategy/plan is included in municipal structures and budgets | The policy/strategy/plan is included in structures and budgets of other organisations | | | |
| | Yes=1 point; No = 0 points | Yes=1 point; No = 0 points | Yes=1 point; No = 0 points | | | |
| Level of implementation: is the food strategy/policy/action plan actually implemented? | Yes, completely = 2 points | Partially = 1 point | No= 0 points | | Indicate reasons for partial or non-implementation | |
| | | | | | Indicate what stakeholders are (or should in future be) engaged in implementation | |
| Budget for implementation I- A specific budget for implementation of the food policy/strategy/action plan is allocated as part of the city's annual budget | Yes= 1 point | No= 0 points | | | Indicate –if available- the budget amount and % of the total municipal budget it represents | |
| | | | | | | |
| Budget for implementation II- Implementation of the food policy/strategy/action plan is funded by tapping into different local government departmental/sectoral funds and programmes | Yes= 1 point | No= 0 points | | | Indicate –if available- the budget sources and funding amounts contributed | |
| | | | | | | |
| Budget for implementation III- Implementation of the food policy/strategy/action plan is co-funded by other government (subnational and national) and non-governmental stakeholders | Yes= 1 point | No= 0 points | | | Indicate –if available- the budget sources (number and variety of sources) and funding amounts contributed | |
| | | | | | | |
| Transparency: Information is widely shared within the city government, non-government stakeholders and with a larger general public on the existence, implementation and results/impacts of the food policy/strategy/action plan | Yes= 1 point | No= 0 points | | | Number and type of information and outreach mechanisms and target groups | |
| | | | | | | |
| Total score: | | | | | | |

It may be relevant to further critically assess the municipal urban food policy/strategy and/or action plans themselves in order to highlight areas of improvements of the actual strategy/policy/action plan. The following table provides a framework to do so¹:

¹ Adapted from Handout Critical Policy Review. RUAF Foundation

Critical analysis of the food strategy/policy/action plan

| What to analyse / document | Points of attention | Identification of possible improvements |
|---|---|--|
| Justification (background) | <ul style="list-style-type: none"> - How was the food policy/strategy/action plan formulated; who were involved? - Was the (baseline) situation analysed in an integrated way or only from one specific view point (e.g. health, or environment, or social)? - Have both problems and potentials, negative and positive impacts been reviewed? | <ul style="list-style-type: none"> - Could the relevancy of this policy/strategy/action plan for specific categories of the population -and/or its legitimacy and popular support- be improved by taking other interests and viewpoints into account (farmers, poor, women, other sectors, private enterprise, etc.)? - Could the design be improved by improving the actual biased situation analysis through adding other viewpoints and impact areas? |
| Vision / Objectives / expected results | <ul style="list-style-type: none"> - Do stated objectives indicate a clear vision regarding the desired development of the urban food system (the functions one expects the urban food system to play in the realisation of municipal or national strategic development plans/sector policies and the kind of developments in the urban food system that will be supported or conditioned/restricted)? -What type of urban food system is promoted? - Are the objectives well defining the expected results in given time periods? - Are the target groups for this policy/strategy/action plan well defined? | <ul style="list-style-type: none"> - Could the policy/strategy/action plan be improved by clarifying the city's vision on the future development of the urban food system and the desired role/functions it should fulfil? - Could the policy/strategy/action plan be improved by a better formulation of the objectives or by a better definition of the target groups (inclusion of others, more specific)? |
| Selected policy measures and instruments to realise these objectives | <ul style="list-style-type: none"> -What policy measures/instruments are applied? - Is an effective mix of policy measures / instruments applied (economic incentives, educational measures, legal measures, planning measures; each instrument is having its specific effects and restrictions)? - Do the policy measures taken have a scientific basis? - Are specific interests of vulnerable groups taken into account and measures taken to ensure active participation of these groups? | <ul style="list-style-type: none"> - Is it realistic to expect that the objectives/expected results will be realised with the actual policy measures? -What policy measures/instruments have worked well? Which ones have not worked well? - What alternative policy measures could be applied to improve the effectiveness of the policy/strategy/action plan, e.g. by adding other types of policy measures /instruments (or replacing existing ones by others)? - What adaptations of existing and inclusion of additional measures could be made to enhance gender sensitivity of the policy/strategy/action plan? - Check whether certain measures are not based on false assumptions regarding certain impacts of the urban food system and are not unnecessary restrictive or over optimistic regarding the expected effects of certain policy measures. - Collect research data and information on successful experiences on this issue elsewhere, which may form a good basis for design of more effective policy measures. - What improvements could be made to enhance the relevance/benefits of the policy/strategy/action plan for vulnerable groups and enhancing gender and social equity? |
| Targets and monitoring | <ul style="list-style-type: none"> -Have clear (monitoring) targets been set? -Are financial and human resources assigned to conduct regular monitoring and/or evaluation of the policy/strategy/action plan? | <ul style="list-style-type: none"> -Should formulation of targets be revised/improved to allow for their actual monitoring? -Have baseline data be collected? -Do financial and human resources for monitoring need to be increased? -Is training on data collection and analysis needed? -What results have been achieved so far? - What problems have been encountered up to date and with what effects? What has been tried to tackle these problems and with what results? - Which recent innovative projects and experiences have been undertaken that can be used to improve existing policy strategies and instruments? |

| | | |
|--|--|---|
| <p>The institutional framework for the operationalisation, implementation and monitoring of the policy/strategy/action plan</p> | <p>- Does the policy/strategy/action plan define which organisation will lead and coordinate the operational planning and implementation of the various policy measures and have coordination and monitoring mechanisms been defined?</p> <p>- Have the roles (contributions and responsibilities) of other actors involved in the implementation been defined?</p> <p>-Do the earmarked organisations have the required capacities to implement the policy/strategy/action plan?</p> | <p>- What improvements could be made in the institutional framework in order to facilitate its implementation and effectiveness?</p> <p>- What can be done to further enhance the availability and quality of required human resources?</p> |
| <p>The financial resources made available to implement and monitor the policy/strategy/action plan</p> | <p>- Have sources of financing been clearly identified and assigned, and a timeframe defined to implement, coordinate and monitor the policy/strategy/action plan?</p> | <p>- What improvements could be made in the financing of the policy/strategy/action plan to enhance its effectivity and/or efficiency?</p> |

Data analysis/calculation of the indicator

Based on the scoring and further (disaggregated) information provided, participants in the monitoring/review meeting may identify gaps or areas for strengthening or improvement:

- How can the existing food strategy/policy/action plan be better implemented, funded and communicated?
- What changes in the existing strategy/policy/action plan are proposed? Or what steps can be taken to elaborate such strategy/policy or action plan?
- What is the likelihood of success of the proposed changes?
- What process should be followed to implement these changes? Steps to be taken? Stakeholders to be involved? Critical time-lines? Resources required?
- Which lobbying strategies should be put in place, by whom and when?

The self-assessment exercise can be repeated once a year to monitor uptake of agreed improvements/changes.



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Indicator 4: Presence of an inventory of local food initiatives and practices to guide development and expansion of municipal urban food policy and programmes

MUFPP framework of actions' category: Governance

The indicator allows for (self) assessment of the presence and use of an inventory of local food initiatives and practices to guide development and expansion of municipal urban food policy and programmes. It may spur new development or actualisation of such inventory and define recommendations for better use.

Overview table

| | |
|--|--|
| MUFPP Work stream | Governance- Ensuring an enabling environment for effective action |
| MUFPP action | Identify, map and evaluate local initiatives and civil society food movements in order to transform best practices into relevant programmes and policies, with the support of local research or academic institutions |
| What the indicator measures | The indicator allows for (self) assessment of the presence (yes/no) and use of an inventory of local food initiatives and practices (using a simple scoring sheet) to guide development and expansion of municipal urban food policy and programmes. It may spur new development or actualisation of such inventory and define recommendations for better use. |
| Which variables need to be measured / what data are needed | Information is collected and analysed on Presence of an inventory of local food initiatives and practices, its Use, Budget and Open accessibility. |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Metrics used include: -Amount of budget available -Number (and type) of users of the inventory |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Different user groups can be distinguished: decision-makers, technical staff in different municipal or government sectors and programmes, various non-governmental stakeholders. |
| Possible sources of information of such data | Self-assessment among stakeholders involved in urban food policies/strategies/action plans (including those participating in an |

| | |
|--|---|
| | interdepartmental coordinating or multi-stakeholder food body). Possibly validated by assessment of external actors. |
| Possible methods/tools for data-collection | -Group discussion for self-assessment, most likely the cheapest approach -Key informants interviews -User surveys |
| Expertise required | No specific expertise required |
| Resources required/estimated costs for monitoring | The (self) assessment will not require a large amount of funding. It can for example be implemented during a meeting of an interdepartmental coordinating or multi-stakeholder food policy and planning body if these exist. Note however that development of the inventory itself and keeping it up-to-date requires sufficient financial and human resources. |
| Specific observations | The Milan Urban Food Policy Pact has developed a format for best practice inventory and documentation ¹ . Documented practices are made accessible on the Urban Food Action Platform and can inspire other cities to start collating local food initiatives. |
| Examples of application | |

Rationale/evidence

In many cities there is already a breadth of food policy and programmatic work occurring, implemented by government programmes, civil society organisations, local and international NGOs, research organisations and universities. Concrete examples of practices, that include enough detail and direction to inform follow up, can be used then as a source of inspiration to develop or expand urban food programmes and policies or to adapt new policy and practice.

The Milan Urban Food Policy Pact promotes identification, documentation and sharing of good practices or policies originating in a city from either civil society, other stakeholders or from municipal government that has demonstrated results that are significant in relation to the commitments of the Pact and fit into the Framework for Action. They collect, systematise and disseminate best practices by various means (Best Practice books, database, Mayor's Summit, city-to-city exchange) in supports of cities' efforts to strengthen their urban food systems. Annex 1 provides the format for their Best Practice Inventory.

Similarly at local level, urban food practice or policy innovation can be sped up, by not having to be invented from scratch, and can lead to improvements through adaptation over time.

Cities who have not yet done so would benefit from carrying out a comprehensive inventory of relevant food system activities developed in their territory. Cities who already have such inventory, may need to ensure that it is regularly updated over time, that it is widely made available among different stakeholders and that the inventory is used to further build or review a comprehensive urban food policy/strategy or programmes. Local NGOs or research organisations may be funded to carry out the identification, mapping and evaluation of local food initiatives, practices and policies.

In many cases, information may be available in individual institutions, but is not assembled and brought together in one place.

It is important to note that mere presence of such best practice inventory is not sufficient. The degree to which such inventory is up-to-date and used will determine the extent to which it will help transform

¹ Forster T., Egal, F., Getz-Escudero A., Dubbeling, M. and H. Renting, 2015. Milan Urban Food Policy Pact-Selected good practices from cities. Fondazione Giangiacomo Feltrinelli. <http://www.milanurbanfoodpolicypact.org/good-practices/>

and scale up the “best” practices into relevant programmes and policies. This would imply the formal adoption of such best practices/policies by the municipal government.

Making an inventory of local practices and policies publically available will also allow non-governmental stakeholders to use and benefit from it.

Glossary/concepts/definitions used

A practice or policy is an intervention in the form of an initiative, campaign, policy or programme originating in a city from either civil society or from municipal government that has demonstrated results that are significant in relation to the development or improvement of an urban food strategy/policy or action plan.

Preparations

For the self-assessment:

1. In case an inventory of local food policies and practices exists: organisation of a meeting with different stakeholders involved in the formulation and implementation of urban food strategies/policies/action projects. During this meeting one or all governance related indicators (1-6) could be jointly discussed. The respective monitoring guidelines can be shared with all involved prior to the meeting.
2. In case such inventory does not exist: the indicator can be reported on by the contact person in the city for urban food policies and the Milan Pact. The exercise may contribute to a (future) reflection and planning process on the importance, role and set up of such inventory.
3. The (self) assessment can be validated with selected external stakeholders, specifically to get their views on use and accessibility of information. Alternatively or in addition a user survey could be implemented to get information on type of users, frequency of use, what the information was used for and how use of the information supported project or policy design and review.

In case other evaluations methods are selected (key informant interviews, user survey) respective preparations should be taken.

Sampling

Preferably all –as many as possible- stakeholders involved in the formulation and implementation of urban food policies/strategies/ projects should participate in the monitoring exercise.

In addition, a randomly sampled number of external stakeholders not participating in the design and implementation of urban food policies/strategies/ projects and/or of potential users of the inventory could be asked if they are aware of the existence of an inventory and if they have ever accessed/used it.

Data collection and data disaggregation

During a monitoring/review meeting the following scoring sheet and table can be discussed and filled. Specific observations made during the meeting can be added in the final column. Also recommendations for improvement can be added here.

Scoring sheet

| Characteristics | Scoring | | | Total score | Disaggregation of information | Observations/ Recommendations |
|---|------------------------------------|---|---------------------|-------------|---|-------------------------------|
| Presence of an (up-to-date) inventory of local food initiatives and practices to guide development and expansion of municipal urban food policy and programmes | Yes= 1 point | No= 0 points | | | Indicate where the inventory is located, when it was developed and what it contains | |
| | | | | | | |
| Level of use: is the inventory used to guide development and expansion of municipal urban food policy and programmes? | Yes, frequent use =2 points | Partially or occasionally= 1 point | No= 0 points | | Indicate how it is used and reasons for partial or non-implementation | |
| | | | | | Lessons learned/recommendations for more effective use | |
| Budget available- A specific budget for developing and up-dating the inventory is made available by the city to local NGOs/research institutes | Yes= 1 point | No= 0 points | | | Budget amount available and form of collaboration with civil society/research | |
| | | | | | | |
| Accessibility: The inventory is publicly accessible for use by any governmental or non-governmental stakeholder | Yes= 1 point | No= 0 points | | | Number and types of users; if available information on how they used the inventory | |
| | | | | | | |
| Total score: | | | | | | |

Data analysis/calculation of the indicator

Based on the scoring and further (disaggregated) information provided, participants in the monitoring/review meeting may identify actions to be undertaken for developing and up-dating the inventory and/or for enhancing its use.

Annex 1: Template to report a practice - Milan Urban Food Policy Pact

| | |
|--|--|
| Organisation | |
| Contact person(s) | |
| Selected practice (short title) | |
| Period/duration | |
| Summary of actions carried out (including policy interventions or campaigns) | |

| | |
|---|--|
| | |
| Actors involved in the practice or policy (mayoral initiative, city council, civil society, private sector, etc.) | |
| <u>Most important</u> outcomes or lessons | |
| References to documents and websites (links for further information) | |



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Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 5: Presence of a mechanism for assembling and analysing urban food system data to monitor/evaluate and inform municipal policy making on urban food policies.

MUFPP framework of actions' category: Governance

The indicator allows for (self) assessment of the presence and use of a monitoring/evaluation mechanisms for assembling and analysing urban food system data. Actual monitoring/evaluation will enable reflection on the experiences gained with urban food policies, impacts achieved and will inform and improve further municipal food policy making and reporting.

Overview table

| MUFPP Work stream | Governance- Ensuring an enabling environment for effective action |
|--|--|
| MUFPP actions | Develop or improve multi-sectoral information systems for policy development and accountability by enhancing the availability, quality, quantity, coverage and management and exchange of data related to urban food systems, including both primary data collection, and secondary data generated by civil society and other partners. |
| What the indicator measures | The indicator allows for (self) assessment of the presence and use of a monitoring/evaluation mechanisms for assembling and analysing urban food system data. Actual monitoring/evaluation will enable reflection on the experiences gained with urban food policies, impacts achieved and will inform and improve further municipal food policy making and reporting. |
| Which variables need to be measured / what data are needed | Presence of a monitoring/evaluation mechanism (yes/no); Form and use of the monitoring/evaluation mechanism (with use of a scoring sheet). |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Metrics used: -Type of data and information collected; - Use there-off; -Type and level of data disaggregation; -Stakeholders responsible for data collection; -Data accessibility. |

| | |
|--|--|
| | Note that for actual data collection and analysis on the urban food system/policy, the entire set of indicators provided under the Milan Urban Food Policy Pact Monitoring Framework can be used. |
| Unit(s) of Analysis (i.e people under 5 years old, etc.) | In terms of users of the information, different user groups and stakeholders can be distinguished. |
| Possible sources of information of such data | Self-assessment among stakeholders involved in urban food policies/strategies/action plans (including those participating in an interdepartmental coordinating or multi-stakeholder food body). Possibly validated by assessment of external actors. |
| Possible methods/tools for data-collection | <ul style="list-style-type: none"> -Group discussion for self-assessment, most likely the cheapest approach -Key informants interviews -User surveys <p>Note: For actual data collection and analysis a large variety of secondary and primary research tools can be applied.</p> |
| Expertise required | Experience with process and impact monitoring is required for actual urban food system assessment, data collection and analysis. |
| Resources required/estimated costs | The (self) assessment will not require a large amount of funding. It can for example be implemented during a meeting of an interdepartmental coordinating or multi-stakeholder food policy and planning body if these exist. Note that implementation of actual urban food system monitoring, data collection and analysis requires high amounts of staff time and resources. Development of a comprehensive food system assessment may costs from USD 50,000-150,000 depending on existing data availability and the set scope of the assessment and evaluation. |
| Specific observations | |
| Examples of application | The Municipality of Curitiba, Brazil has a Municipal Plan of Food and Nutrition Security (http://multimedia.curitiba.pr.gov.br/2017/00188887.pdf or http://www.curitiba.pr.gov.br/conteudo/1-plano-municipal-de-seguranca-alimentar-e-nutricional/2809) which includes goals and indicators for various actions related to food and nutritional security. Separate work and monitoring sheets (derived from the Municipal Plan for Food and Nutrition Security) are designed for each of the involved municipal organs or programmes that interface with food and nutritional security. Data collected are also discussed in the Municipal Council for Food and Nutrition Security for monitoring and decision making. |

Rationale/evidence

Any food policy development process should be based on a thorough assessment of the current urban food system in the city and ongoing trends. This requires collection of food system data (e.g. on food consumption, production, employment in the food system, nutrition, food supply sources etc.) and analysis of these data *to design food-related policy and programmes*. Such assessment will provide appropriate information to the various stakeholders to enter into dialogue, facilitate joint goal setting and strategic action planning and establish baseline data and indicators for monitoring and evaluation. Assessments of the urban food system can be undertaken in various ways (e.g. rapid mainly qualitative appraisal versus more systematic data gathering including statistically representative quantitative data), using a variety of methods (e.g. review of available research data and available statistics, GIS mapping, key informants, focus group interviews, community food mapping, and use of surveys)¹.

Policy monitoring/evaluation also requires the setting of measurable goals and targets to allow *for policy revision and reporting*. A large number of food policies or programmes reviewed by Baker and

¹ See for a toolkit on city region food system assessment and mapping work done by FAO and RUAF: <http://www.fao.org/in-action/food-for-cities-programme/toolkit/introduction/en/>

de Zeeuw (2015) do not contain measurable goals, which makes it difficult to monitor to what extent the expected changes in the urban food system are realised².

It is acknowledged that impact monitoring is a complex and costly task (e.g., How to filter out other influences on the urban food system?). Costs and relevance of impact monitoring should therefore be balanced with process and progress monitoring. For example, if we know that education and training are key to both lowering GHG emissions and improving health outcomes, it may make more sense to monitor a number of activities, resources, partners etc. engaged in education and training, instead of actually monitoring GHG emissions which is a quite difficult and costly process.

Any monitoring should therefore ideally encompass both *food policy formulation and implementation process* (approach/ methods applied, inter-institutional cooperation, civic participation, etc.), *progress* (activities implemented and outputs realised), as well as *the (social, environmental, economic) impacts obtained*: the degree of realisation of the desired changes in the urban food system as a result of the interventions, as well as unintended impacts.

Following such reasoning, the City of Milan established in 2017 a set of Food Policy Guidelines that identify the need to develop a monitoring system for the food policy itself, as well for the impacts of the food policy on the food system. The Toronto Food Strategy developed a monitoring matrix for Food Policy Analysis: it analysed each project and presented overlapping themes for food systems change. So far key impact indicators on poverty, health, etc. are not used as this diverts too much energy and resources from other projects. In specific cases, monitoring is done at project specific level.

Ideally, *data collected will be disaggregated* for different income groups and spatial levels (different areas in the city; urban/rural areas). Spatial location of data for example will allow to geographically link specific indicator data to specific areas in the city as a basis for further planning. It is important to note that data collected might be local government data, but could also *include information and data collected by community organisations, NGOs or academic institutions* that pertain to the city overall. To get a more objective view on the effects of the actions undertaken in the context of the implementation of an urban food policy/strategy, it may be even necessary to ask an independent research institute to periodically assess the changes in the urban food system applying the targets and indicators set in the policy or strategy. That means that it is important to distinguish "city as geography" and "city as government". Both are relevant here.

Finally, data collected should be *made available to the public domain*, for reasons of accountability. Multi-stakeholder participation in data analysis and policy design and review will enhance inclusiveness and efficiency gains (see further Indicator 2 *Presence of an active multi-stakeholder food policy and planning structure*).

Glossary/concepts/definitions used

Cities use different food **monitoring/evaluation mechanisms**:

- Ede Municipality (the Netherlands) for example reports on the individual food programme objectives via a **dashboard**. Dashboards provide at-a-glance views of data and indicators. The dashboard is often displayed on a web page which is linked to a database that allows the report to be constantly updated.
- As indicated, the Municipality of Curitiba uses a set of **monitoring sheets**.

² Baker L. and H. de Zeeuw, 2015. Urban food policies and programmes. In: Drechsel and De Zeeuw (ed). Cities and agriculture-Developing resilient urban food systems, 2015. Earthscan-Routledge London and New York.
<http://www.ruaf.org/urban-food-policies-and-programmes-overview>.

- RUAF and FAO developed a [City Region Food System Indicator Framework](#)³. The City Region Food System indicator framework is a practical assessment and planning tool designed to help cities to (1) Assess the current status and performance of a city region food system following a whole-system approach; (2) Identify priority areas for action with clear desired outcomes and ways of measuring change; (3) Help with planning strategy and action to achieving the desired outcomes; and (4) Establish baselines and monitor changes resulting from (future) policy and programme implementation.
- The UK Sustainable Cities Network developed a **monitoring toolbox**⁴ that has two main purposes. The first is to provide local authorities and policy makers in the UK with a clear, robust and comprehensive collation of relevant evidence and indicators of success of a place-based approach to food. The second is to help both existing and interested ‘practitioners’ to plan, implement, monitor and evaluate the impact of their Sustainable Food Cities programmes. For this purpose, a common framework and approach that is sufficiently flexible to account for differing local circumstances and priorities was developed.
- This methodological guideline is part of the **Milan Urban Food Policy Pact Indicator Framework** that can be applied by cities to monitor implementation and outcomes related to the Milan Pact Voluntary Framework of Action.

Preparations

For the self-assessment:

1. In case a monitoring/evaluation mechanism exists: organisation of a meeting with different stakeholders involved in collection and analysis of urban food system data. The monitoring guidelines can be shared with all involved prior to the meeting.
2. In case such monitoring/evaluation mechanism does not exist: the indicator can be reported on by the contact person in the city for urban food policies and the Milan Pact. The exercise may contribute to a (future) reflection and planning process on the importance, role and set up of such mechanism.
3. The (self) assessment can be validated with selected external stakeholders, specifically to get their views on use and accessibility of information. Alternatively or in addition a user survey could be implemented to get information on type of users, frequency of use, what the information was used for and how use of the information supported project or policy design and review.

In case other evaluations methods are selected (key informant interviews, user survey) respective preparations should be taken.

Sampling

Preferably all –as many as possible– stakeholders involved in urban food system data collection, analysis, monitoring and evaluation should participate in the monitoring exercise.

³ This City Region Food System Indicator Framework is part of the City Region Food Systems (CRFS) toolkit to assess and plan sustainable city region food systems. The toolkit has been developed by FAO, RUAF Foundation and Wilfrid Laurier University.

⁴ Prosperi, P.; Moragues-Faus, A.; Sonnino, R. and Devereux, C. (2015) Measuring progress towards sustainable food cities: Sustainability and food security indicators. Report of the ESRC financed Project “Enhancing the Impact of Sustainable Urban Food Strategies”. Access: <http://sustainablefoodcities.org/getstarted/developingindicators>

In addition, a randomly sampled number of external stakeholders and/or of potential users of the inventory could be asked if they are aware of the existence of such monitoring/evaluation mechanisms and if they have ever accessed/used it.

Data collection and data disaggregation

During a monitoring/review meeting the following table can be discussed and filled. Specific observations made during the meeting can be added in the final column. Also recommendations for improvement can be added here.

Scoring sheet

| Characteristics | Scoring | | | Total score | Disaggregation of information | Observations/Recommendations |
|--|---|---|----------------------|-------------|--|------------------------------|
| Presence of a monitoring/evaluation mechanism for assembling and analysing urban food system data to inform municipal policy making on urban food policies. | Yes= 1 point | No= 0 points | | | Describe the mechanism and what it is used for (e.g. design of policies, monitoring and revision of policies and programmes, reporting, resource negotiations) | |
| | | | | | | |
| The monitoring/evaluation mechanism monitors the food policy formulation and implementation process (approach/ methods applied, inter-institutional cooperation, civic participation, etc.) | Yes in a comprehensive way= 2 points | Partially = 1 point | No = 0 points | | Type of data collected and tools used | |
| | | | | | | |
| The monitoring/evaluation mechanism monitors the food policy formulation and implementation progress (activities implemented and outputs realised) | Yes in a comprehensive way= 2 points | Partially = 1 point | No = 0 points | | Type of data collected and tools used | |
| | | | | | | |
| The monitoring/evaluation mechanism monitors the (social, environmental, economic) impacts obtained as a result of food interventions | Yes in a comprehensive way= 2 points | Partially = 1 point | No = 0 points | | Type of data collected and tools used | |
| | | | | | | |
| Information and data collected are disaggregated | Yes, for all data and variables= 2 points | Partially = 1 point | No = 0 points | | Type and level of data disaggregation | |
| | | | | | | |
| Use is made of data and information collected by different stakeholders (government, NGOS, research, private sector) | Yes, full use of information by several stakeholders =2 points | Partial use or only a limited number of stakeholders = 1 point | No = 0 points | | What stakeholders are using which data and in what way? | |

| | | | | | | |
|---|---|---------------------|---------------|--|--|--|
| Monitoring/evaluation data are freely accessible in the public domain | Yes for all data and all stakeholders= 2 points | Partially = 1 point | No = 0 points | | Analysis of what data are accessible, where /how, at what costs and to whom | |
| | | | | | | |
| Monitoring/evaluation data are fed back into multi-stakeholder policy planning and review | Yes, fully= 2 points | Partially = 1 point | No = 0 points | | Describe what data are used, how and how this impacts policy planning and review | |
| | | | | | | |
| Total score: | | | | | | |

Data analysis/calculation of the indicator

Based on the scoring and further (disaggregated) information provided, recommendations for strengthening or improving mechanism for assembling and analysing urban food system data. Preferably, such action plan would be developed in the same or a following meeting of stakeholders involved, during which each of the members confirm their commitments and agree on concrete actions. The self-assessment exercise can be repeated once a year to monitor uptake of agreed improvements/changes.

Results of actual assessments and monitoring/evaluation can be used by the local government as well as other stakeholders engaged in the urban food system to design, review and improve their policies and programmes. Making data available to decision-makers and budget-holders will support lobbying and negotiations for resource allocations.



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Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 6: Existence of a food supply emergency/food resilience management plan for the municipality (in response to disasters; vulnerabilities in food production, transport, access; socio economic shocks, etc.) based on vulnerability assessment

MUFPP framework of actions' category: Governance

The indicators allows for (self) assessment of the presence and level of implementation of a food supply emergency/ food resilience management plan. If desired, critical assessment of the actual plan itself may be implemented in addition. Both exercises help define areas for improvement.

Overview table

| | |
|--|--|
| MUFFP Work stream | Governance- Ensuring an enabling environment for effective action |
| MUFFP action | Develop a disaster risk reduction strategy to enhance the resilience of urban food systems , including those cities most affected by climate change, protracted crises and chronic food insecurity in urban and rural areas |
| What the indicator measures | The indicators allows for (self) assessment of the presence and level of implementation of a food supply emergency / food resilience management plan. If desired, critical assessment of the actual plan itself may be implemented in addition. Both exercises help define areas for improvement. |
| Which variables need to be measured / what data are needed | Information is collected on Existence of a food emergency/resilience plan (yes/no), and –with use of a scoring sheet- on Vulnerability assessment and focus, Level of integration, Development of specific individual actions and Transparency. If a further in-depth critical assessment of the food emergency and resilience plan itself will be done, this requires information to be collected on Justification, Vision and Objectives, Policy measures and instruments, Targets and monitoring; Institutional framework and Financial resources. |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Metrics include: - Number (and type) of preparedness and management strategies proposed and implemented in the context of a comprehensive plan - Funding amounts (and budget sources) allocated |

| | |
|--|--|
| | <ul style="list-style-type: none"> - Number (and type) of target groups and specific actions proposed/taken - Number (and type) of individual actions |
| Unit(s) of Analysis (i.e people under 5 years old, etc.) | Specific target groups: income or socioeconomic wealth class, age, specific areas in the city, other specific groups |
| Possible sources of information of such data | <ul style="list-style-type: none"> -Self-assessment among stakeholders involved in the food emergency/resilience plan (including those participating in an interdepartmental coordinating or multi-stakeholder food body). Possibly validated by assessment of external actors. -Minutes/reports on implementation and monitoring of the food emergency/resilience plan -External evaluation and study reports |
| Possible methods/tools for data-collection | <ul style="list-style-type: none"> -Group discussion for self-assessment and analysis of the food emergency/resilience plan, most likely the cheapest approach -External evaluation -Ad hoc surveys to capture opinions of stakeholders and target groups -Key informants interviews |
| Expertise required | Expertise in vulnerability assessment and resilience planning |
| Resources required/estimated costs | The self-assessment assessment will not require a large amount of funding. It can for example be implemented during a meeting of an interdepartmental coordinating or multi-stakeholder food policy and planning body if these exist. The in-depth critical assessment of the food emergency/resilience plan itself requires specific effort and sufficient staff time. |
| Specific observations | |
| Examples of application | When the City of Baltimore (United States) experienced public unrest in 2015, it realised that its food system was vulnerable to disasters and shocks. It therefore commissioned a <i>Food System Resilience Advisory Report</i> to feed into its more general <i>Disaster Preparedness Plan</i> . The study, carried out by researchers from the Johns Hopkins Center for a Livable Future ¹ , provides a good methodology for any other city willing to investigate its food system's ability to recover from shocks. |

Rationale/evidence

Cities and their urban food systems are also increasingly being affected by both acute shocks (such as floods, wind storms, disease outbreaks, supply disruptions, food price hikes, high influx of refugees) as well as chronic stresses (such as longer-term projected climate changes in climate patterns, uncontrolled urban growth or inefficiencies in systems to support production activities, chronic poverty and food shortages). The number of reported natural disasters affecting cities has significantly increased in recent decades: from 195 (1987-1998 average) to 365 per year (2000-2006 average)². Rapid urban growth will only increase the number of people living in highly vulnerable urban communities (IPCC fifth assessment report)³.

An increase in acute shocks and chronic stresses may impact food production, processing and distribution along the entire food supply chain, while also exacerbating food insecurity in urban areas. Food supplies, which are delivered just-in-time in many urban areas, are specifically vulnerable; as are

¹ Biehl, Erin; Buzogany, Sarah; Huang, Alice; Chodur, Gwen; Neff, Roni, 2017. Baltimore Food System Resilience Advisory Report. <https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/pdf/projects/resilience/Baltimore-Resilience-Report.pdf>

² Hoyois P., Scheuren J-M., Below R., Guha-Sapir D., 2007. *Annual Statistical Review: Numbers and Trends*, 2006. Brussels: CRED, UCL, UNISDR, 54p.

³ IPCC, 2014. *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects*. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1132 pp.

urban groups that are already food insecure or that do not have sufficient assets and capacity to deal with food price hikes or supply disruptions. For example, increasing food prices resulting from food supply disruptions will directly impact consumers in urban areas because they are almost entirely dependent on purchasing (versus growing) their food. The hardest hit will be on vulnerable population who may already be food insecure.

To understand a city food system's ability to recover from shocks requires an assessment of how well its food system works now, its current vulnerabilities, and of the system's ability to bounce back. Potential vulnerabilities may involve food accessibility, availability and acceptability.

For instance, in Baltimore, 1 in 5 inhabitants is food insecure, meaning that they might not be able to stock food, and therefore to prepare for and recover from disruptions in the food supply system. Many residents do not live within walking distance of a supermarket, leaving them with no access to fresh food if for some reason, such as road disruptions, they cannot use their car or public transportation. Another challenge in Baltimore's current food system is labour shortage in transportation (more specifically in truck companies): if an event (for instance an epidemic) was to prevent workers to come to work, then it would be difficult to make up for it. One last example: the concentration of processing activities into big facilities makes it difficult for local food processors to survive. This is a local economic challenge, but it is also a resilience one, for if one big processor gets affected by an event (a storm, a power shortage, etc.), then it may be difficult for another local food processor to quickly take over⁴.

Based on a vulnerability assessment, a food supply emergency/ food resilience management plan can be developed. Such plans should build on opinions and views of representatives from all actors in the food system, as well as stakeholders who have on the ground experience of past disruptions or existing community actions. Food supply emergency/resilience management plans should not only be oriented at government interventions, but also at business interventions and community actions.

Experience shows that a successful food emergency/resilience plan:

- **Looks for synergies between actions that increase resilience and help tackle existing food system issues at the same time.** For instance, policies that target food insecurity will increase the amount of food households are able to store, and hence their ability to withstand a temporary disruption in supply.
- **Try to build in redundancy in the food system** to avoid being dependent on one single road, source of production, processing facility or provider.
- **Support actors that are less able to prepare for, or to withstand, an event** (such as for example small businesses and food insecure households)⁵.
- **Build in resilience into food planning, or food into resilience planning.**

⁴ Taken from: <http://www.urbanfoodfutures.com/how-resilient-is-your-food-system>

⁵ For instance, Baltimore is developing Resilience Hubs to make food and water accessible to households in one location in case of disaster.

Depending on the city, policy routes will be different. It is important to have a specific food emergency or resilience plan, but also to integrate food into other city planning and resilience strategies. For example, in October 2017, the Metropolitan District of Quito, Ecuador (MDQ) together with the Rockefeller Foundation's 100 Resilient Cities initiative published the city's [Resilience Strategy](#). Quito's food systems is characterized by specific vulnerabilities, including a high dependence on food imports (over 85%), weak food distribution systems and isolated vulnerable communities. Based on a vulnerability analysis, an action plan will be developed to enhance the availability and accessibility of diversified, safe and nutritious food to the entire population. The action plan will also seek to increase consumers' capacity, education and awareness on healthy diets and nutrition. Additional actions in the strategy include:

- The strengthening of Quito's urban agriculture programme, in terms of enhancing the quality and quantity of local food production and by facilitating more diversified market mechanisms; and
- The development of a programme on sustainable agricultural development in the peri-urban and rural areas. Sustainable and lower-emission production practices will be promoted, while at the same time promoting more decent labour conditions⁶.

[Glossary/concepts/definitions used](#)

Urban resilience is defined by the Rockefeller 100RC as "the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience."

Resilient (urban) food systems contribute to the notion of sustainable food systems, where "Sustainability refers to engaging in practices that meet the resource needs of the present without compromising the needs of the future, whereas resilience refers to the ability of systems to survive, withstand and adapt to various shocks and stresses"⁷. A resilient food system is understood as: "A system that has the capacity over time to provide sufficient healthy, sustainable and fair food to all in the face of chronic stresses and acute shocks, including unforeseen circumstances. [...] A resilient food system is robust (it can withstand disturbances without losing food security), has redundancy (elements of the system are replaceable and can absorb the effects of stresses and shocks), is flexible, can quickly recover lost food security and can adapt to changing circumstances"⁸.

Acute shocks are sudden, sharp events that threaten a city, including: earthquakes, floods, disease outbreaks, terrorist attacks. **Chronic stresses** are slow moving disasters that weaken the fabric of a city. They include: longer-term climate changes (e.g. decreasing rainfall, increasing temperatures) high poverty and unemployment, overtaxed or inefficient public transportation system, endemic violence, chronic food and water shortages⁹.

According to Wikipedia, a **vulnerability assessment** is the process of identifying, quantifying, and prioritising (or ranking) the [vulnerabilities](#) in a system. Vulnerability from the perspective of [disaster management](#) means assessing the threats from potential hazards to the population and to infrastructure. A food system vulnerability could occur at any point from farm to fork, including pre-harvest production, processing, distribution, and retail sales.

⁶ For further information on Quito and some examples from other cities, please see The Urban Agriculture Magazine No34: Measuring Impact at: <http://www.ruaf.org/publications/magazines>

⁷ Charles L. Redman, "Should sustainability and resilience be combined or remain distinct pursuits?" Ecology and Society 19, no. 2 (2014): 37.

⁸ Carey R. et al. 2016. Melbourne's food future: Planning a resilient city foodbowl. A Foodprint Melbourne Report.

⁹ <http://www.100resilientcities.org/resources/>

A food emergency (response) plan or a food resilience management or disaster preparedness plan includes an identification of responses to identified and potential food system vulnerabilities: it identifies organisational and financial resources, determines roles and responsibilities, outlines policies and procedures and planning activities in order to reach a level of preparedness and respond timely and effectively to any acute shock/chronic stress that might occur. The plans do not apply to food incidents of a limited scope that are routinely handled by local or state health departments or other food agencies such as state agriculture departments. They apply to food emergencies that may involve a large number of people in a small area, or that are widespread, involving a number of localities in the city. In general, the scope of a food emergency will exceed the capacity of the entity or jurisdiction immediately responsible for responding.

Preparations

For the self-assessment:

1. In case a food emergency/resilience plan exists: organisation of a meeting with as many stakeholders as possible involved in the formulation and implementation of the food emergency and resilience plan. The monitoring guidelines can be shared with all involved prior to the meeting.
2. In case a food emergency/resilience plan does not exist: the indicator can be reported on by the contact person in the city for urban food policies and the Milan Pact. The exercise may contribute to a (future) reflection and planning process on the importance, role and set up of such a food emergency/resilience plan.
3. The (self) assessment can be validated with selected external stakeholders, also to get wider inputs on possible areas for improvement.

In case other evaluation methods are selected (external evaluation, key informant interviews) respective preparations should be taken.

Sampling

Preferably all –as many as possible- stakeholders involved in the formulation and implementation of the food emergency/resilience plan should participate in the monitoring exercise.

For the self-assessment: In addition, a randomly sampled number of external stakeholders not participating in the design and implementation of the food emergency/resilience plan could be asked if they are aware of the existence, content and results of a municipal food emergency/resilience plan (yes/no). Such questions could be included in a broader urban food-related survey.

Data collection and data disaggregation

During a monitoring/review meeting the following table can be discussed and filled. Specific observations made during the meeting can be added in the final column. Also recommendations for improvement can be added here.

Scoring sheet

| Characteristics | Scoring | | Total score | Disaggregation of information | Observations/ Recommendations |
|--|-------------|-------------|-------------|---|-------------------------------|
| Existence of a food supply emergency/ food resilience management plan for the municipality | Yes=1 point | No=0 points | | Add the strategy document and summarise its content | |
| | | | | | |

| | | | | | | |
|---|-------------------------------------|-----------------------------------|--------------|--|---|--|
| | | | | | Number and type of preparedness and management strategies proposed and implemented | |
| The plan is based on a comprehensive vulnerability assessment of the urban food system | Yes, complete-ly=2 points | Partially = 1 point | No= 0 points | | Add the vulnerability assessment and summarise its content | |
| | | | | | | |
| The plan identifies clear roles, responsibilities, resources and timelines | Yes, complete-ly=2 points | Partially = 1 point | No= 0 points | | -Budget sources and funding amounts allocated -Different stakeholders engaged and their assigned roles | |
| | | | | | | |
| Vulnerability focus: the plan specifically takes into account the needs of and response actions for groups that are less able to prepare for/withstand shocks and stresses (e.g. small producers, food businesses, low income and food insecure households) | Yes, complete-ly=2 points | Partially = 1 point | No= 0 points | | Number and type of target groups and specific actions proposed/taken | |
| | | | | | | |
| Level of integration: integration of food system components into other city planning and emergency/resilience disaster risk reduction strategies. | Yes, complete-ly=2 points | Partially = 1 point | No= 0 points | | Type of integration and into which strategies and documents | |
| | | | | | | |
| Implementation of specific actions: In case of the absence of a full food emergency/resilience management plan, the city implements specific individual strategies/actions such as climate smart urban agriculture production systems, food business zoning away from flood zones, storage of food emergency supplies, etc. | Yes, a full set of actions=2 points | A partial set of actions= 1 point | No= 0 points | | Number and type of individual actions | |
| | | | | | | |
| Transparency: Information is widely shared within the city government, non-government stakeholders and with a larger general public on the existence, implementation and results/impacts of the food emergency/resilience plan | Yes, fully=2 points | Partially= 1 point | No= 0 points | | Information and outreach mechanisms and target groups | |
| | | | | | | |
| Total score: | | | | | | |

Note: If existing, it may be relevant to further critically assess the food emergency/resilience plan itself in order to highlight areas of improvements of the actual plan. The critical policy analysis proposed for Indicator 3 (*Presence of a municipal urban food policy or strategy and/or action plans*) may be used and adapted for this purpose.

Data analysis/calculation of the indicator

Based on the scoring and further (disaggregated) information provided, participants in the monitoring/review meeting may identify gaps or areas for strengthening or improvement, such as for example:

- How can the existing food emergency or resilience plan be better implemented, funded and communicated?
- How can proposed actions be better integrated in other policies and programmes?
- What changes in the existing food emergency or resilience plan are proposed? Or what steps can be taken to elaborate such plan?
- What is the likelihood of success of the proposed changes?
- What process should be followed to implement these changes? Steps to be taken? Stakeholders to be involved? Critical time-lines? Resources required?
- Which lobbying strategies should be put in place, by whom and when??

The self-assessment exercise can be repeated once a year to monitor uptake of agreed improvements/changes.

References and links to reports/tools

- **Baltimore:**

This report on food and climate resilience in Baltimore City identifies actions Baltimore can take to protect food security in the event of a natural or human-made disaster. As cities and food policy councils across the country consider how to manage threats from climate change, the report's findings highlight the importance of integrating food systems issues into disaster preparedness plans.

The report and a 2-page brief are available at:

Report: http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/_pdf/projects/resilience/Baltimore-Resilience-Report.pdf

Brief: http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/_pdf/projects/resilience/resilience-2-pager.pdf

- **Quito** [Resilience Strategy](#)



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Indicator 7: Minimum dietary diversity for women of reproductive age

MUFPP framework of actions' category: Sustainable diets and nutrition

This is an indicator to assess dietary quality at individual level, specifically looking at women of reproductive age (MDD-W). It is a proxy for the probability of micronutrient adequacy of women's diets.

Overview table

| MUFPP Work stream | Sustainable diets and nutrition |
|--|---|
| MUFPP action | Promote sustainable diets (healthy, safe, culturally appropriate, environmentally friendly and rights-based) through relevant education, health promotion and communication programmes, with special attention to schools, care centres, markets and the media. |
| What the indicator measures | This is an indicator to assess dietary quality at individual level, specifically looking at women of reproductive age (MDD-W). It is a proxy for the probability of micronutrient adequacy of women's diets. The indicator reflects micronutrient adequacy, which is one critical dimension of diet. It does not reflect adequacy of specific target nutrients. |
| Which variables need to be measured / what data are needed | Foods and beverages consumed during a period of 24 hours |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Number of food groups consumed |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Women of reproductive age (15-49 years) |

| | |
|---|--|
| | Note: If desired also a MDD-YC focussing on young children age 6-23 months can be measured ¹ . |
| Possible sources of information of such data | Household surveys |
| Possible methods/tools for data-collection | Household survey (individual interview within household). While food group diversity indicators can be derived from detailed quantitative dietary intake surveys, this guide is intended for users who are not in a position to conduct such surveys. When relatively simple data collection approaches are required, as in a number of large-scale and multi-module surveys, food group diversity indicators can be measured using two main methods: open recall and list-based. |
| Expertise required | Survey data collection and analysis. It should be clear that a certain level of academic training is needed. Ideally the city would partner with a research institution/university. |
| Resources required/estimated costs | Specialised knowledge of survey methodology, sampling design and statistical analysis. |
| Specific observations | <p>This indicator has been validated as an indicator of likelihood of micronutrient adequacy among women of reproductive age. There is a recent global consensus on this indicator as the best, most valid measure of women's dietary diversity; it replaces the WDDS (Women's Dietary Diversity Score) that had been previously developed by FAO and Food And Nutrition Technical Assistance project (FANTA). Unlike former measurements, it offers a threshold for women's micronutrient needs. Consortium of International Agricultural Research Centres (CGIAR) and USAID Feed the Future have mainstreamed the use of this indicator in their evaluations.</p> <p>The MDD-W is validated and relatively easy to administer, but it does not capture dietary quality completely because it is an indicator of micronutrient adequacy and diversity, but does not deal with specific healthy or unhealthy amounts or components of the diet. Other dietary quality scores have been constructed (e.g. the Healthy Eating Index, Dietary Quality Index), but these require a full quantitative –and more costly– 24-hr recall.</p> |
| Examples of application | There are as yet no known examples of application of this indicator at city level. |

Rationale/evidence

Consumption of sufficient, safe, and nutritious food is critical to the health and well-being of any urban household/individual. The Milan Pact Monitoring Framework proposes a set of indicators to measure different aspects of food security and sustainable diets and nutrition. The combination of these indicators provides the more comprehensive analysis. For example Indicator 18 (*Percentage of food insecure households based on the Food Insecurity Experience Scale -FIES*) gives insight into food access at household or individual level. Indicator 9 (*Costs of a nutritious food basket*) looks at the food environment in markets to assess affordability and accessibility of foods by relating the cost of the food basket to individual/family incomes.

This indicator Minimum Dietary Diversity for Women of reproductive age (MDD-W) responds to a long-standing need to have a simple and effective indicator to assess women's diet quality. Women are a group that is often nutritionally vulnerable because of their increased requirements in micronutrients and because, in some settings, they may be disadvantaged in intra-household distribution of nutrient-

¹ See further: <http://www.fao.org/3/a-i6275e.pdf>. Page 16 as well as:

IYCF MDD = Minimum Dietary Diversity indicator, as an indicator of infant and young child feeding practices; see: Indicators for assessing infant and young child feeding practices (WHO, 200811 and WHO, 2010).

http://www.who.int/maternal_child_adolescent/documents/9789241596664/en/.

dense foods. Nutrition-sensitive interventions have intensified in recent years due to an increased focus on deploying efforts towards good nutrition for women and children during the critical 1,000-day period of their life. The MDD-W offers one way to measure impact of these nutrition-sensitive efforts. The MDD-W is a brief set of questions, requiring much less time and expense than traditional dietary surveys. It is validated as an indicator of nutrient adequacy. Moreover, it can provide information about dietary patterns and what are the food groups predominantly consumed at population level (or missing from the diet) and in a given agro-ecological zone. For example, indicators can be derived for consumption of vitamin A-rich plants, and for consumption of iron-rich food groups. This information, if properly accessed and incorporated to inform decision making, can provide sound evidence to influence policies and investment choices towards more nutrition-sensitive agriculture production or other nutrition interventions. It is important to note that MDD-W does not provide comprehensive information on diet quality or all impacts of agriculture on diet. It may not capture changes when projects aim to increase production and consumption of food items or food groups already widely consumed. Likewise, it will not reflect increase in nutrient intake due to consumption of fortified or bio-fortified foods. These projects can have a positive impact on nutrition but need other metrics. Also, it does not measure consumption of unhealthy foods such as ultra-processed snacks and sugar-sweetened beverages, which negatively affect diet quality and non-communicable disease risk in many settings. MDD-W is a powerful tool to track progress and raise awareness on gender specific needs and it fosters the message of the important link between food production (agriculture) and individual consumption (nutrition).

MDD-W is a dichotomous indicator of whether or not women 15–49 years of age have consumed at least five out of ten defined food groups the previous day or night. The proportion of women 15–49 years of age who reach this minimum in a population can be used as a proxy indicator for higher micronutrient adequacy, one important dimension of diet quality.

MDD-W is thus a population-level indicator based on a recall period of a single day and night, so although data are collected from individual women, the indicator cannot be used to describe diet quality for an individual woman. This is because of normal day-to-day variability in individual intakes.

This indicator will be useful when programme design, activities and impact pathway indicate a potential to increase food group diversity. Note that many agricultural and health sector projects may improve nutrition, but only some will do so by increasing food group diversity. In many contexts, it will also be important to increase the quantity of nutrient-dense food groups that are accessible and consumed by target groups. Users should note that consumption of food items from five or more food groups, while useful as a population-level benchmark, does not ensure micronutrient adequacy for the population, particularly if quantities of micronutrient-dense foods consumed are too small.

Note that cities may be interested in monitoring specific food intake, rather than or in addition to food group diversity. A specific indicator on meat consumption (Indicator 10) is therefore proposed as part of the overall Milan Urban Food Policy Pact monitoring. Other cities are principally interested in fresh fruit and vegetable consumption, given that eating fruits and vegetables can lower risks of heart disease and some cancers. For example, New York City's goal, established in OneNYC in April 2015, is to increase the average number of servings of fruits and vegetables adult New Yorkers eat every day by 25 percent over the next twenty years. Monitoring is done by means of a computer-assisted telephone Community Health Survey². The survey includes a question about "Fruit and vegetable

² You can learn more about the survey and its methodology here: <https://www1.nyc.gov/site/doh/data/data-sets/community-health-survey-methodology.page>. You can download the dataset for public use, here: <https://www1.nyc.gov/site/doh/data/data-sets/community-health-survey-public-use-data.page>. And you can use the online query system to pull up data about fruit and vegetable consumption here: <https://a816-healthpsi.nyc.gov/epiquery/CHS/CHSXIndex.html>

consumption: How many total servings of fruit and/or vegetables did you eat yesterday? (A serving would equal one medium apple, a handful of broccoli, or a cup of carrots)”. A large number of New Yorkers is surveyed and it is designed to be a representative sample of the city as a whole. The question is self-reported and while servings are defined, it is acknowledged that there is variation in interpretation and responses on that question. Although it is self-reported, this results in quantitative analysis of data on the number of servings of fruit and vegetables consumed that can be used to determine the average citywide as well as disparities in age, neighbourhood, and population. Cities can easily include such a question in a MDD-W food consumption diversity survey.

Glossary/concepts/definitions used

Dietary diversity is universally recognised as a key component of healthy diets. It relates to nutrient adequacy (coverage of basic needs in terms of macro and micro nutrients) and to diet variety/balance, which are two of the main components of diet quality.

Women of reproductive age (WRA) include women age 15-49 years of age. WRA are often nutritionally vulnerable because of the physiological demands of pregnancy and lactation. Requirements for most nutrients are higher for pregnant and lactating women than for adult men. Outside of pregnancy and lactation, other than for iron, requirements for WRA may be similar to or lower than those of adult men, but because women may be smaller and eat less (fewer calories), they require a more nutrient-dense diet. Insufficient nutrient intakes before and during pregnancy and lactation can affect both women and their infants.

Food group diversity refers to the diversity of consumption. For this purpose, food items are grouped under overall food groups. The ten used food groups are: 1. Grains, white roots and tubers, and plantains 2. Pulses (beans, peas and lentils) 3. Nuts and seeds 4. Dairy 5. Meat, poultry and fish 6. Eggs 7. Dark green leafy vegetables 8. Other vitamin A-rich fruits and vegetables 9. Other vegetables 10. Other fruits³.

Preparations

A meeting should be organised with all staff who will be involved in this activity to:

- Familiarise them with the methodological guidelines
- Agree on the objectives and scope of the analysis and data collection requirements
- Decide on the data collection method, agree on frequency and period of data collection
- Draft a list of food groups and adapt model questionnaires to local contexts
- Train enumerators
- Field test and modify the questionnaire where needed.
- Coordinate activities.

Sampling

There are numerous sampling, sample size and survey design decisions that depend on the objectives and context for data collection. There are a few decisions specific to measurement of food group diversity for women of reproductive age (WRA), including selection of respondent(s) within the household, sampling of days of the week, sampling of “unusual” days (e.g. feasts) and issues related to seasonality that are described in the Minimum Dietary Diversity for Women: A Guide to measurement. (FAO/Family Health International (FHI) 360, 2016), Appendix 1. <http://www.fao.org/3/a-i5486e.pdf>.

³ The food groups are further described and defined in <http://www.fao.org/3/a-i5486e.pdf>, Section 2, and Appendix 2

With regards to the total number of households to survey, in general a 10% sample (10% of all households) will provide reliable data. A specific policy priority, surveys could be implemented among specific target groups (e.g. lower-income households; women producers vs. non-producers) or in specific areas of the city.

Data Collection

Data are collected on the foods and beverages consumed in the previous 24 hours which are aggregated into 10 distinct food groups. Does not require information on **quantitative** food intake (amounts eaten per day).

Data can be collected through (1) The open recall method or (2) The list-based method.

Open recall method. In a qualitative open 24-hour recall (henceforth, “open recall”), the enumerator asks a series of standard probing questions to help the respondent recall all foods and beverages consumed the previous day and night and also probes for main ingredients in mixed dishes. Specifically, the recall period covers from when the respondent awoke the previous day, through the day and night for a 24-hour period. The recall is “open” because the enumerator does not read predefined foods/groups to the respondent. Each food or beverage that the respondent mentions can be circled, underlined or ticked on a predefined list. Foods not already included on the predefined list can be either classified by the enumerator into an existing predefined food group or recorded in a separate place on the questionnaire and coded later into one of the predefined food groups. This method is recommended and is detailed in Minimum Dietary Diversity for Women: A Guide to measurement. (FAO/Family Health International (FHI) 360, 2016), Section 3 (model questionnaire), <http://www.fao.org/3/a-i5486e.pdf>.

List-based method. In the list-based method, the enumerator does read a list of foods and beverages to the respondent. The enumerator informs respondents that they should respond “yes” for each food or beverage consumed during the specified recall period of the previous day and night. The enumerator continues by reading a list of foods organised in groups, giving multiple examples for each food group. There is anecdotal evidence that data collected with this method are less complete. An example questionnaire and more details are given in Appendix 3 of the Minimum Dietary Diversity for Women: A Guide to measurement. (FAO/Family Health International (FHI) 360, 2016), <http://www.fao.org/3/a-i5486e.pdf>.

There are advantages and disadvantages to each method as detailed in the mentioned Guide to measurement. This guide describes and recommends the open recall because it may lead to more accurate and complete recall of all foods and beverages consumed. Of key concern are the linked issues of respondent burden and the time needed (and thus cost) to implement the recall. There is no universal answer regarding which method is quicker, because it depends on the simplicity or complexity of the woman’s diet, on the length of the food group list and on the number of examples needed for each food group on a list-based questionnaire. When diets are simple, the open recall is likely to be the quicker of the two.

The Guide to measurement provides two elements that comprise the MDD-W questionnaire. The first element is a block of standard text (a “script”) to adapt and use in guiding the respondent through an open recall of foods and beverages consumed the previous day and night. The text also includes statements to guide the enumerator in recording information. The second element is a model questionnaire form, which needs to be adapted with local foods (see Section 4 for guidance on translation and adaptation of the text and questionnaire). Guidance notes on enumerator training and how to field test the methodology are also provided.

Data Analysis and Disaggregation

Women who consume foods from at least 5 out of 10 food groups have a higher likelihood of micronutrient adequacy. Several indicators can be derived from the basic data, including (i) proportion of women who consume 5 or more food groups out of ten; (ii) mean dietary diversity score; (iii) proportion of women consuming any specific food group such as animal source foods.

The referenced Guidelines also outline a standardised methodology for data analysis. Presentation can be as simple as the percent of WRA achieving MDD-W or “minimum dietary diversity”. The indicator was developed for exactly this purpose, i.e. when a single, simple, dichotomous indicator is needed. The interpretation of the indicator is: “X% of women achieved minimum dietary diversity, and they are more likely to have higher (more adequate) micronutrient intakes than the X% of women who did not”.

In some cases, it may be useful to present results separately by selected geographic, socioeconomic or household characteristics (e.g. by different areas in the city, by wealth quintile or by level of education), but decisions on appropriate disaggregation will be survey- and context-specific and will depend on objectives, sampling and sample sizes. While designed to meet the need for a single, simple indicator, the data collected to construct the indicator also provide a rich description of diet patterns. The information may also reflect specific food groups of interest in particular contexts (e.g. animal-source foods, fruits and vegetables, nutrient-poor and/or energy-dense groups and other specific food groups promoted in interventions).

References and links to reports/tools

Martin-Prevel Y., M. Arimond, P. Allemand, D. Wiesmann, T. J Ballard, M. Deitchler, M.C. Dop, G. Kennedy, A. Lartey, W. TK Lee, and M. Moursi (2017) on behalf of the Women’s Dietary Diversity Project (WDDP). Study Development of a Dichotomous Indicator for Population-Level Assessment of Dietary Diversity in Women of Reproductive Age. *Curr Dev Nutr* 2017. Available from <http://cdn.nutrition.org/content/asnaoa/1/12/cdn.117.001701.full.pdf>.

UN-FAO, 2016. Compendium for nutrition sensitive agriculture. <http://www.fao.org/3/a-i6275e.pdf>

UN-FAO, 2016. Minimum Dietary Diversity for Women: A Guide to measurement. (FAO/Family Health International (FHI) 360, 2016). <http://www.fao.org/3/a-i5486e.pdf>



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Indicator 8: Number of households living in “food deserts”

MUFPP framework of actions' category: Sustainable diets and nutrition

The indicator measures the geospatial distribution of the food retail establishments and of socioeconomic population groups to analyse the number (or percentage) of households living at a certain distance from food markets.

Overview table

| | |
|--|--|
| MUFPP Work stream | Sustainable Diets and Nutrition |
| MUFPP action | Promote sustainable diets (healthy, safe, culturally appropriate, environmentally friendly and rights-based) through relevant education, health promotion and communication programmes, with special attention to schools, care centres, markets and the media. |
| What the indicator measures | Number of households living in “food deserts” |
| Which variables need to be measured / what data are needed | <ul style="list-style-type: none"> Types of food retail establishments (supermarket, convenience store, etc.) Socioeconomic variables of population |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Number/percentage of households, km or miles to supermarket |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | If desired: disaggregate information for specific household categories (e.g. socio-economic wealth classes or areas in the city) |
| Possible sources of information of such data | <ul style="list-style-type: none"> Public health authority inspection data Planning department business census Business licensing department records |
| Possible methods/tools for data-collection | <ul style="list-style-type: none"> -Analysis of existing datasets -Design and implementation of retail environment surveys |
| Expertise required | <ul style="list-style-type: none"> -GIS mapping, -Collecting data through product inventories/ surveys |
| Resources required/ estimated costs | Experienced GIS analyst |

| | |
|--------------------------------|---|
| Specific observations | Cities in developed countries are more likely to have existing regulatory datasets on the types and location of food retail establishments. They cities are also likely to have very few informal, unlicensed retail outlets. In other cities, there can be a high number of informal shops which can be a very significant food source for many lower income residents. Traditional regulatory data sources will not capture these markets. Primary data collection will have to be done to take into account the characteristics of these informal markets and build a comprehensive picture of the city's food retail environments. |
| Examples of application | <p>The Toronto Public Health Department led an analysis of the city's food retail environments in 2014 to assess the variation in the quality and quantity of food outlets in Toronto. The analyses were based on Toronto's public health inspection system database. The results showed that Toronto has very few "food deserts" defined as lower income areas with no supermarket within 1km walking distance. The research also looked at the availability of healthier vs less healthy food products geographically. Across Toronto there is also an overabundance of less healthy food options. According to an analysis of the modified food retail environment index (MFREI) which calculates the ratio of healthier to less healthy food store locations within a 1km walking distance from each city block on average there are four less healthy food stores for every healthier food retail outlet. Healthier food retail was defined as a supermarket, butcher shop, fish shop, bakery (some), or any smaller food store that sells a significant quantity of fresh produce. By this definition, about one third of all food stores in Toronto are considered healthier food retail. There was no significant correlation between neighbourhood income and index score. However, there are several areas of Toronto where low income and a low MFREI score overlap. In these areas, there are a high number of lower income households and the food environment within which they choose to spend their limited resources near home is dominated by stores that sell unhealthy food¹.</p> <p>Since 2012, the Johns Hopkins Center for a Livable Future (CLF) and the Baltimore Food Policy Initiative (BFPI) have collaborated to examine the physical food environment in Baltimore City to identify gaps and opportunities in healthy food access. A 2018 report builds upon the 2015 report: Mapping Baltimore City's Food Environment by providing an update on the Baltimore City food retail environment, including an in-depth analysis that identifies geographic areas that should be prioritised for healthy food policy and programmatic activities, and strategies and opportunities to address healthy food access. In addition, this report specifically highlights various elements of the physical food environment, from retail outlets to urban agriculture to nutrition assistance, to provide a more focused look at each component².</p> |

Rationale/evidence

The subject of food retail environments is increasing in popularity among both researchers and policy makers. Food deserts have received a significant amount of attention because of possible connections with dietary behaviours, food purchasing, weight status, or diet-related disease outcomes. Typically, they are described as residential areas, often in cities, where low-income residents have limited or no geographic access to affordable food retail establishments offering a range of healthy food options. Long distances to supermarkets is exacerbated when residents lack the financial resources to own a car, have insufficient access to public transit or are socially isolated with few friends or family to rely on.

¹ Toronto Public Health. Toronto Food Strategy: 2015 Update. June 2015.

² <https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/pdf/projects/bal-city-food-env/baltimore-food-environment-digital.pdf>

There is no consensus on a definition of “food deserts”. Some authors question the usefulness of the food desert construct, arguing that it obscures the core issue of inadequate income, regardless of one’s proximity to a supermarket. This variation in definition and approach creates inconsistency and ambiguity in the validity of their results, providing outcomes that can lead to differing or even contradictory opinions about the extent of the food desert problem and its actual location³.

Baltimore (USA) recently renamed “food desert” areas of Baltimore where residents don’t have ready access to healthy, affordable food to be now known as “*healthy food priority areas*.” According to Mayor Catherine Pugh the new term is more accurate. ‘Deserts’ implies there is no food, when actually there is an imbalance between healthy and unhealthy foods. A new study released by the city and researchers at the Johns Hopkins University concluded that 146,077 city residents live in such areas — 23.5 percent of the population. A total of 124,521 of them are African-American. To be deemed a priority area, a neighbourhood must rank poorly in a measure of food store quality, have a low median income, have more than 30 percent of households without cars, and be more than a quarter-mile from a supermarket⁴.

To date, the presence and characteristics of food deserts have been studied primarily in urban settings including Australia, the UK, the United States and Canada. Results of research on food deserts are equivocal. Beaulac et al. (2009) found that clear disparities in food access exist by income and race in many cities in the U.S., but not elsewhere⁵. Food deserts have been identified in cities in Australia and the UK. However, in the latter, the establishment of a supermarket did not alter residents’ diets.

Lytle et al. (2017) reviewed food environment studies and found that geographic analysis (65% of studies reviewed) was the most common method. However, only one in four studies reported the reliability of measures⁶. A challenge with many food desert studies is that their complex methods and detailed inputs, often requiring significant primary data collection, may make them difficult and expensive to replicate. Given the dynamic nature of the contemporary foodscape, where retailers routinely leave or enter a community, it is critical to be able to update food desert analyses regularly so they are current and relevant; complex, resource-intensive methods may make this challenging to do in a timely fashion⁷.

Despite the contested nature of food deserts, and the lack of consensus on the appropriate methods to measure and describe them, they nonetheless have become an important concept that facilitates discussion, debate and negotiation within communities, and between communities and policy makers, about how to address food insecurity in the context of modern foodscapes⁸.

Glossary/concepts/definitions used

Food Desert: There is no agreed upon definition of a “food desert”. The USDA defines it as:

“a low-income census tract where either a substantial number or share of residents has low access to a supermarket or large grocery store. “Low income” tracts are defined as those where at least 20 percent of the people have income at or below the federal poverty levels for family size, or

³ D’Acosta, J. (2015). Finding Food Deserts: A Study of food access measures in the Phoenix-Mesa urban area. A Thesis Presented to the Faculty of the USC Graduate School. University of Southern California.

⁴ See footnote 2

⁵ Beaulac, J., Kristjansson, E., & Cummins, S. (2009). Peer reviewed: A systematic review of food deserts, 1966-2007. *Preventing chronic disease*, 6(3).

⁶ Lytle, L. A., & Sokol, R. L. (2017). Measures of the food environment: A systematic review of the field, 2007–2015. *Health & Place*. 44, 18-34.

⁷ Joyce et al. (2017), op. cit.

⁸ Joyce et al. (2017), op. cit.

where median family income for the tract is at or below 80 percent of the surrounding area's median family income. Tracts qualify as "low access" tracts if at least 500 persons or 33 percent of their population live more than a mile from a supermarket or large grocery store (for rural census tracts, the distance is more than 10 miles)⁹."

Food Environment: The food environment includes features of the community, such as the number and kinds of food outlets in people's neighbourhoods (geographic food access). It also features the consumer experience, such as the kinds of foods that are available, affordable, and of good quality¹⁰.

Food Swamp: Lower socio-economic neighbourhoods have high geographic access to food retailers perceived as promoting mainly minimally nutritious food options such as fast food outlets and convenience stores).

Preparations

Local governments may need to link with national government agencies, ministries and research institutes to coordinate data collection and analysis. One option could include an inter-sectoral monitoring team that includes statistical offices, national agencies/ministries and other sector representatives. The responsibility for data collection, analysis and dissemination, as well as reporting, could then fall on the inter-sectoral team. Establishing mechanisms for easy and transparent sharing and validation of data is critical for ensuring a strong link among stakeholders for implementing solutions.

A meeting should be organised with all partners who will be involved in this activity to:

- Agree on the objectives and scope of the analysis and data collection requirements
- Define the methodology to be applied for data collection and analysis, and
- How to coordinate the activities within the team.

Data Collection and Analysis

This section provides an overview of key issues in data collection and analysis. For a more comprehensive guide, please refer to the resources below:

- C. Misiaszek C., S. Buzogany and H. Freishtat (2018). Baltimore's city food environment: 2018 report. Johns Hopkins Center for a Livable Future and the City of Baltimore. Available at: <https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/pdf/projects/bal-city-food-env/baltimore-food-environment-digital.pdf>
- Minaker, L. (2013). Measuring the Food Environment in Canada. Ottawa, Ontario: Health Canada. Available from http://www.foodsecuritynews.com/resource-documents/MeasureFoodEnvironm_EN.pdf.
- USDA Economic Research Service (2017). Food Access Research Atlas: Documentation. Available from <https://www.ers.usda.gov/data-products/food-access-research-atlas/documentation/>.
- Ver Ploeg, M., Dutko, P., & Breneman, V. (2014). Measuring food access and food deserts for policy purposes. *Applied Economic Perspectives and Policy*, 37(2), 205-225. Available from <https://academic.oup.com/aep/article/37/2/205/8641>.
- Centers for Disease Control and Prevention. (2014). Healthier food retail: Beginning the assessment process in your state or community. Atlanta: US Department of Health and Human Services. Available from <https://www.cdc.gov/obesity/downloads/HFRassessment.pdf>.

⁹ USDA (2017). Food Desert Locator. Release No. 0191.11. Available from <https://www.fns.usda.gov/tags/food-desert-locator>.

¹⁰

⁰ Minaker, L. (2013). Measuring the Food Environment in Canada. Ottawa, Ontario: Health Canada.

- Cohen, B. E. (2002). Community food security assessment toolkit (pp. 02-013). Washington, DC: US Department of Agriculture, Economic Research Service. Available from http://www.uc.edu/cdc/urban_database/food_resources/community_food_security_assessment_USDA.pdf.

Researchers have identified four features of the food environment for assessing quality and quantity¹¹.

- **Geographic food access** refers to the geographic availability of different types of food stores and restaurants. There are various ways to measure geographic access. For example, one can measure the proximity of homes to specific outlet types, such as grocery stores or fast food outlets. Another measure is to count the number of convenience stores or fast food outlets within a given geographic area.
- **Food availability** refers to the actual foods that are available in someone's neighbourhood. For example, studies examining food availability have looked at whether or not fresh fruits and vegetables are within a certain distance of peoples' homes, or the amount of shelf-space dedicated to energy-dense snack foods in someone's neighbourhood.
- **Food affordability** refers to the cost of foods within a defined area. It can be measured using an absolute method such as a nutritious food basket.
- **Food quality** measures subjective assessments of food quality – whether fruits and vegetables appear withered or bruised. Food quality measurement can gauge residents' satisfaction with the quality of foods in their neighbourhoods.

Variables for Disaggregation

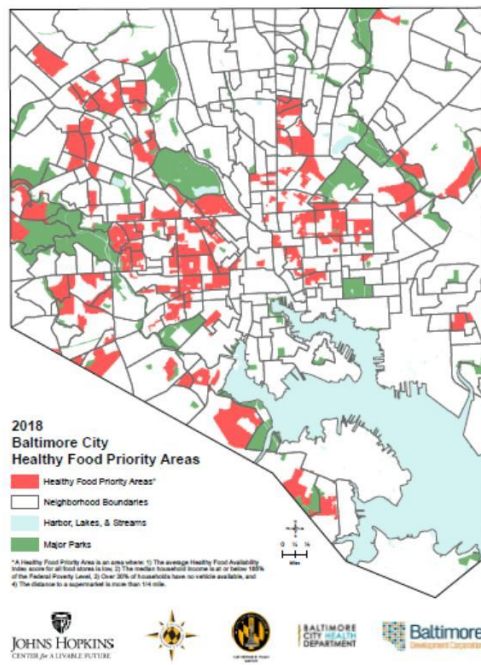
The indicators related to food deserts can be disaggregated by:

- Regional differences
- Socioeconomic variations
- Informal urban settlements
- Locally important marginalised groups.

By disaggregating the data spatially (see the example from Baltimore below¹²) and by different socioeconomic strata, it is possible to identify which parts of the population do not have access to food retail outlets.

¹¹ Minaker, L. (2013). op. cit.

¹² See footnote 2



References and links to reports/tools

C. Misiaszek C., S. Buzogany and H. Freishtat (2018). Baltimore's city food environment: 2018 report. Johns Hopkins Center for a Livable Future and the City of Baltimore. Available at:

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Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 9: Costs of a nutritious food basket at city/community level

MUFPP framework of actions' category: Sustainable diets and nutrition

The indicator measures a medium cost of a diet meeting minimum requirements of macro- and micronutrients or food based dietary guidelines based on a weighted food price index.

Overview table

| MUFPP Work stream | Sustainable diets and nutrition |
|--|--|
| MUFPP action | Promote sustainable diets (healthy, safe, culturally appropriate, environmentally friendly and rights-based) through relevant education, health promotion and communication programmes, with special attention to schools, care centres, markets and the media. |
| What the indicator measures | The minimum cost of a diet meeting minimum requirements of macro and micronutrients or food based dietary guidelines. |
| Which variables need to be measured / what data are needed | The following data are needed: -List of main food markets -List of food items to be included in a nutritious food basket -Unit costs/Prices of selected nutritious and healthy foods in local markets -Data on food requirements for specific age/sex groups of reference households |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Average costs of specific food items in local currency unit per person per day |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Food items that make up a nutritious food basket |
| Possible sources of information of such data | -Statistics Office, Health Department -Food price monitors -Surveys among different market outlets |
| Possible methods/tools for data-collection | -Market/price information where they exist -Market surveys |
| Expertise required | Food costs surveying |
| Resources required/ estimated costs | |

| | |
|--------------------------------|--|
| Specific observations | <p>There are in many cities ongoing efforts and data on food basket (consumption) monitoring (Statistics Office, Health Department). Often the price of a basic food basket is tracked, but typically not based on nutritious diets.</p> <p>Also, this indicator looks at food offers in the markets (focus on outlets, rather than on what/how much is consumed). Other consumption focused food security indicators are suggested in addition to this specific indicator.</p> |
| Examples of application | <p>Every two years, the Provincial Health Services Authority (PHSA) works with the Ministry of Health and the five regional health authorities to monitor the cost of a nutritionally adequate diet in British Columbia, Canada. Data is collected every two years using Health Canada's National Nutritious Food Basket (NNFB) tool, which includes 67 food items that are minimally processed, require preparation, and are considered to be commonly eaten by most Canadians in amounts that provide a nutritionally adequate, balanced diet. Data collection is implemented by the regional health authorities (RHAs) and occurs in the last week of May and the first week of June. A sample of approximately 220 full-service grocery stores were randomly selected and stratified by the health service delivery areas (HSDAs) of the RHAs. Complete data for 196 stores was obtained and used to determine the average cost of the NNFB. The surveillance team at PHSA analysed the data submitted by the RHAs using algorithms and information received from Health Canada. The average cost in each food category is weighted by purchase popularity and the amount of food that each person needs, adjusted by sex and age. Then the total cost was adjusted based on the size of family using the Household Size Adjustment Factor to account for the economies or diseconomies of scale¹.</p> <p>Save the Children, an NGO, piloted an approach "to quantify the extent to which households could afford to feed their children under the age of 2 and a whole family of 5 people, with a diet meeting minimum requirements of macro and micronutrients." The cost of the cheapest adequate diet was based on household surveys and calculated using a linear programming tool and a spreadsheet model built in Microsoft Excel 2000.²</p> <p>Note that several cities already collect food price data that are needed for calculating this indicator. For example, the municipality of Curitiba, Brazil, through a programme called Disk Economy collects daily data on the price of food³.</p> |

Rationale/evidence

Consumption of sufficient, safe, and nutritious food is critical to the health and well-being of any urban household. One of the food security indicators used is the average monthly cost of a nutritionally adequate, balanced diet, e.g. a **nutritious food basket**. Food costing is used to monitor both affordability and accessibility of foods by relating the cost of the food basket to individual/family incomes. It will help (i) determine the minimum cost of a nutritious food basket (healthy diet), (ii) to determine the affordability of a healthy diet by household type. This indicator may provide direction to a city's health department in regard to fulfilling the requirement of monitoring food affordability and consequently supporting and promoting access to nutritious, safe, personally acceptable foods through policy and programme planning, and by targeting specific priority populations. Note that such

¹ 2015 findings are documented in the following report: <http://www.phsa.ca/population-public-health-site/Documents/2015%20Food%20Costing%20in%20BC%20-%20FINAL.pdf>

² <https://resourcecentre.savethechildren.net/sites/default/files/documents/3841.pdf> (accessed 29-01-2018).

This paper presents the results of piloting a new method for estimating the cost and affordability of the diet in four study locations (villages in Bangladesh, Ethiopia, Myanmar and Tanzania). This method –based on household rather than market surveys- is one of the fewer attempts conducted in the developing world.

³ See: <http://www.curitiba.pr.gov.br/servicos/cidadao/disque-economia/162>

policies and programmes should take into account that decreasing food costs cannot come at the expense of farmers.

The cost of a Nutritious Food Basket, using a list of food items, can be priced to estimate the average cost of feeding –on the basis of a healthy diet- different age (for example children) and sex groups or household compositions (for example a reference family of four including a man and woman, each aged 31–50 years; a boy, 14–18 years of age; and, a girl, 4–8 years old). The basket is designed to reflect an example of an eating pattern that meets local (or international) nutrition and dietary recommendations and eating behaviours of the average urban population. Items in the Nutritious Food Basket reflect the lowest price available in a specified purchase size, regardless of brand. The resulting food basket cost is based on the average cost of each food item from all surveyed market stores.

Glossary/concepts/definitions used

A **Nutritious Food Basket (NFB)** is a survey tool that is a measure of the cost of basic healthy eating that represents current nutrition recommendations and average food purchasing patterns. Current nutrition recommendations or dietary guidelines are available for specific countries based on types and quantities of food that are recommended for different age and sex groups.

Healthy diet: A diet is considered healthy for an individual when it covers both its micro- and macronutrient requirements.

Preparations

A meeting should be organised with all staff who will be involved in this activity to:

- Familiarise them with the methodological guidelines
- Agree on the objectives and scope of the analysis and data collection requirements
- Draft a list of food items to be included in the nutritious food basket
- Train food surveyors
- List and sample market stores/outlets to be surveyed
- Agree on frequency and period of data collection.

The list of food items that make up a nutritious food basket can be taken from available dietary guidelines or obtained from the Ministry of Health.

Food surveyors should understand the entire process of food costing. To ensure they have received a full explanation of their role, food surveyor training should include:

- Reviewing the procedures;
- Providing examples of common problems encountered;
- Practising food costing at a store (if possible); and
- Completing sample calculations.

To be sure the data is collected in the same way, all food surveyors must receive the same instructions and follow the same procedures. It is strongly recommended that food surveyors be trained in-store whenever possible to provide realistic hands-on experience. Training conducted in-house should try to mimic in-store training as closely as possible. When training surveyors, remind them to handle all items with care while costing food (Training Handouts are provided in:

http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/guidance/nutritiousfoodbasket_gr.pdf).

It is strongly advised to run full length trial surveys in order to gauge amount of time needed, review quality of recordings and usability of the resulting data and decide on any adaptations needed.

Sampling

To account for seasonal differences in food offers and food prices, food costing should preferably be done each main production season.

If seasonal (or monthly) is not possible, annual sampling is suggested. Note that in the latter case, data collection is a one-time snapshot event that may not necessarily reflect the average annual cost estimate.

Food costing may focus and be limited to specific areas in the city only, notably lower income areas.

Food prices vary across markets (varying from informal street markets to open markets, supermarkets, grocery stores, neighbourhood shops). It is recommended to purposively sample 10% of each main type of food markets.

To be included in the list of market stores/outlets, the following could be taken into account (adapted from Ministry of Health Promotion Canada, 2010. Nutritious food basket-Guidance Document):

- The market store must offer a major part or full line of products. Any store that does not have the capacity to have the full range of items in the NFB would not qualify (e.g. many convenience stores, drug stores, and department stores would not meet this criterion).
- The final list of markets should include representation from each of the major chains operating in the city/selected area; include both premium and discount stores from any of the major chains above; as well as any independent market stores.
- Exclude stores such as: Warehouse-type stores which may not regularly have food basket items in the specified sizes; Stores that require membership for shopping privileges, because membership is not accessible to the entire population and it is not possible to attribute the membership cost to the food items; and Convenience stores.
- Stores should be representative of the types of stores in which individuals in the city/selected area typically shop. The store selection strategy includes sampling at least one store from each major chain operating within a specific area. Not sampling from a range of stores could skew food prices. The relative importance (i.e. market share) of any store is not a factor in store selection strategy.

Note that when sampling includes high-end “health food” grocery stores, the inclusion of these stores may disproportionately influence food costs. Costs may be calculated, including or excluding such specific stores.

Food costing should be conducted for all major market outlets in the city/neighbourhood. A list of all market outlets (including informal markets and convenience stores) should be drawn up and a random sample made. Review the list of selected stores on an annual basis to consider whether different stores or any new major chains/groups or independents need to be included.

Data Collection

Once stores have been identified, the surveyors should make contact with the stores to request permission and thank them for their cooperation. Note that store managers who have a better understanding of how the information is used are more likely to participate. Send a letter of confirmation timed to arrive about a week prior to survey dates, and take a copy of the letter to the store manager on the day that food costing is completed to help remind the store manager about your communication. Follow up with a letter of thanks after the surveys have been completed. If a store that was selected does not permit to carry out in-store costing, consider if the remaining stores accurately represent the region. If not, store selection will need to be revisited.

Survey selected stores within the set time-period. Complete the costing in any given store in a single visit. Review all food costing forms to ensure purchase units are correct and enter the information into a cost averaging spreadsheet.

Data Analysis and Disaggregation

Ensure that in-store costing forms are complete for each store surveyed. Review prices to ensure they are in a form that can be entered into a cost averaging spreadsheet. The person coordinating the NFB data collection needs to check the following:

- Where the specified purchase unit is not available and prices for alternative-size products have been recorded, the price needs to be calculated for the preferred purchase unit.
- Are prices for fresh produce in a per kilogram format? If not, the price per item should be converted to a per kilogram price.
- For produce priced in multiple formats, has a lowest price per kilogram been calculated?
- Are there missing values? Note: Do not enter anything (including “0”) in the cost averaging spreadsheet for these items where there are missing values (e.g., when a food item is not available). The cost averaging spreadsheet will calculate the average cost of the food item from stores for which there is data. If “0” is entered, the average will include the price of \$0 for the store for which there is no data, lowering the apparent average cost of the food item.
- Food prices from each store must be entered into a cost averaging spreadsheet.
- Calculate the cost of the food basket for specific age/sex groups or reference households.

Costs of a nutritious food basket can be mapped for specific areas/districts in the city or for specific households or population groups (e.g. pregnant women, children). In this way, mapping can focus on low-income areas/neighbourhoods to analyse food costs in relation to average household income levels.

Generally, inflation rate is also not considered when comparing prices over time. Such data analysis limitations should be clearly reported.

More detailed guidelines and reporting formats can be found here:

http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/guidance/nutritiousfoodbasket_gr.pdf

References and links to reports/tools

Ministry of Health Promotion Canada, 2010. Nutritious food basket-Guidance Document.

http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/guidance/nutritiousfoodbasket_gr.pdf

See further: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-nutrition-surveillance/national-nutritious-food-basket.html>

Save the Children The Minimum Cost of A Healthy Diet. Available at:

<https://resourcecentre.savethechildren.net/sites/default/files/documents/3841.pdf> (accessed 29-01-2018) . This paper presents the results of piloting a new method for estimating the cost and affordability of the diet in four study locations (villages in Bangladesh, Ethiopia, Myanmar and Tanzania). This method –based on household rather than market surveys- is one of the fewer attempts conducted in the developing world.



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Milan Urban Food Policy Pact Monitoring Framework

March 2021 version

Indicator 10: Individual average daily consumption of meat

MUFPP framework of actions' category: Sustainable diets and nutrition

Note this is not a normative indicator on recommended daily intake of meat. It will monitor meat consumption in order to discuss sustainable and healthy diets from a health and environmental perspective.

Overview table

| MUFPP Work stream | Sustainable Diets and Nutrition |
|--|--|
| MUFPP action | Promote sustainable diets (healthy, safe, culturally appropriate, environmentally friendly and rights-based) through relevant education, health promotion and communication programmes, with special attention to schools, care centres, markets and the media. |
| What the indicator measures | Individual average daily consumption of meat |
| Which variables need to be measured / what data are needed | <ul style="list-style-type: none"> Meat categories (ruminants, pork, poultry, fish, etc.) Red meat vs processed meat Socioeconomic variables |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Weight of meat consumption If desired, the following could (also) be measured: Share of expenditures on meat of total food expenditures). |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Grams of meat per day per capita OR annual kilograms of meat consumption per capita |
| Possible sources of information of such data | <ul style="list-style-type: none"> Agriculture departments (meat production data) Health departments or academic institutions (household dietary surveys) |
| Possible methods/tools for data-collection | <ul style="list-style-type: none"> Data analysis from existing reports Household dietary or consumption surveys |
| Expertise required | Data analysis, survey design and implementation |
| Resources required/ estimated costs | |

| | |
|--------------------------------|---|
| Specific observations | The specific categories of animals included in meat consumption can vary, in particular, whether fish are included. FAO defines meat as all animals used for food. However, the OECD includes only beef, veal, pig, poultry and sheep. Aggregate production (carcass mass availability) or retail data are often used as proxies for per capita consumption. The accuracy of production data as a consumption proxy can be limited in countries where the population is small but meat exports are high. |
| Examples of application | <p>The School of Public Health at the University of São Paulo conducted 24-hour diet recall surveys among residents in 2003 and 2008 to track trends in meat consumption. Data were collected from adolescents, adults and seniors in São Paulo. The daily mean of red and processed meat consumption was 100 g/day in 2003 and 113 g/day in 2008. Excessive red and processed meat consumption was observed in almost 75% of the subjects, especially among adolescents in both surveys. Beef represented the largest proportion of meat consumed, followed by poultry, pork and fish in both surveys¹.</p> <p>The City of Ghent monitor meat consumption through biannual market research with questionnaires sent out to thousands of citizens in Ghent, Flanders, other Belgian cities, etc. This allows them to see the evolution for Ghent and to compare the city to other regions and cities around Ghent. Total costs for their 2016 survey (including Ghent and Brussels areas) were 6 500 Euro.</p> |

Rationale/evidence

Meat/animal sourced protein can be part of a balanced diet contributing valuable nutrients that are beneficial to health. Meat and meat products contain important levels of protein, vitamins, minerals and micronutrients which are essential for growth and development. Further processing of meat offers the opportunity to add value, reduce prices, improve food safety and extend the shelf-life. This can result in increased household income and improved nutrition. While the per capita consumption of meat in some industrialised countries is high, per capita consumption below 10 kg in developing countries must be considered insufficient and often leads to undernourishment and malnutrition. It is also estimated that more than 2 billion people in the world are deficient in key vitamins and minerals, particularly vitamin A, iodine, iron and zinc. Deficiencies occur when people have limited access to micronutrient-rich foods such as meat, fish, dairy, fruit and vegetables. These sources are usually combined in the daily food intake, but in regions where not all of them are readily available, intake of the others needs to be increased. It is for these reasons that some cities (like Nairobi, Kenya and Quito, Ecuador promote livestock production and consumption as an important part of their urban agriculture and urban food security programmes).

Although nutrients from animals may be of higher quality or more readily absorbed than vegetable sources, it is possible to have a healthy vegetarian diet. The steadily growing world population and increasing incomes creates higher demand for meat, but at the same time leaves limited space for expansion in livestock production. Therefore the maximum utilisation of existing food resources becomes even more important².

Global meat consumption and production patterns pose a threat to the natural environment by contributing to climate change, resource depletion and the extinction of species. The food system as a whole accounts for an estimated 20-30% of the global greenhouse gas emissions while, within food consumption patterns, meat and dairy products are the main contributors to environmental impacts.

¹ de Carvalho, A. M., César, C. L. G., Fisberg, R. M., & Marchioni, D. M. (2014). Meat consumption in Sao Paulo–Brazil: trend in the last decade. *PloS one*, 9(5), e96667.

² FAO (2014). Animal Production and Health: Meat consumption. Agriculture and Consumer Protection Department. Available from <http://www.fao.org/ag/againfo/themes/en/meat/background.html>.

Among the different types of meat, beef has the largest and chicken the smallest environmental impact in terms of climate change, land use and fossil fuel depletion. Given a growing population and an increase in wealth, the demand for food and meat is predicted to increase by 70% by 2050 for food and by 2030 for meat³. With rapid global urbanisation, it will be important for cities to gauge trends in meat consumption to inform health and environmental strategic plans. It is in this context that this indicator monitors meat consumption as part of environmentally sustainable diets.

Glossary/concepts/definitions used

Meat: The flesh of animals used for food (including beef, poultry, pork, fish and others)⁴.

Preparations

A meeting should be organised with all staff who will be involved in this activity to:

- Familiarise them with meat consumption assessments
- Agree on the objectives and scope of the analysis and data collection requirements
- Define the methodology to be applied for data collection and analysis, and
- How to coordinate the activities.

Data Collection and Analysis

FAO figures for meat consumption are generally based on carcass mass availability (with “carcass mass” for poultry estimated as ready-to-cook mass), divided by population⁵. The amount eaten by humans differs from carcass mass availability because the latter does not account for losses, which include bones, losses in retail and food service or home preparation (including trim and cooking), spoilage and “downstream” waste, and amounts consumed by pets (compare dressed weight)⁶.

For a detailed methodology of population meat consumption data collection and analysis, please refer to the following resources:

FAOSTAT: Food and Agriculture Data. Available from <http://www.fao.org/faostat>.

OECD Data: Meat Consumption. Available from <https://data.oecd.org/agroutput/meat-consumption.htm>.

Cities may also decide to add a question on meat consumption in other sustainable diets and nutrition consumption surveys or design a specific survey on the topic. An example survey used in Ghent is available in Dutch and can be obtained from the city of Ghent⁷.

References and links to reports/tools

FAO (2013). Current Worldwide Annual Meat Consumption per capita, Livestock and Fish Primary Equivalent. Food and Agriculture Organization of the United Nations. Available from <http://www.fao.org/docrep/005/y4252e/y4252e05b.htm>.

³ Van Mierlo, K., Rohmer, S., & Gerdessen, J. C. (2017). A model for composing meat replacers: Reducing the environmental impact of our food consumption pattern while retaining its nutritional value. *Journal of Cleaner Production*, 165, 930-950. <https://www.sciencedirect.com/science/article/pii/S0959652617315330>

⁴ FAO (1994). Definition and Classification of Commodities. Available from <http://www.fao.org/waicent/faoinfo/economic/faodef/fdef17e.htm>.

⁵ FAOSTAT. (Statistical database of the Food and Agriculture Organization of the United Nations. Methods and Standards. http://faostat3.fao.org/mes/methodology_list/E.

⁶ Loss-adjusted food availability documentation. United States Department of Agriculture, Economic Research Service. [http://www.ers.usda.gov/data-products/food-availability-\(per-capita\)-data-system/loss-adjusted-food-availability-documentation.aspx](http://www.ers.usda.gov/data-products/food-availability-(per-capita)-data-system/loss-adjusted-food-availability-documentation.aspx).

⁷ Please contact: katrien.verbeke@stad.gent

FAO (2014). Animal Production and Health: Meat consumption. Agriculture and Consumer Protection Department. Available from <http://www.fao.org/ag/againfo/themes/en/meat/background.html>.

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Van Mierlo, K., Rohmer, S., & Gerdessen, J. C. (2017). A model for composing meat replacers: Reducing the environmental impact of our food consumption pattern while retaining its nutritional value. *Journal of Cleaner Production*, 165, 930-950.



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Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 11: Number of adults with type 2 diabetes

MUFFPP framework of actions' category: Sustainable diets and nutrition

This indicator measures the number and/or prevalence of type 2 diabetes among adults, youth and children.

Overview table

| MUFFPP Work stream | Sustainable Diets and Nutrition |
|--|--|
| MUFFPP action | Address non-communicable diseases associated with poor diets and obesity, giving specific attention where appropriate to reducing intake of sugar, salt, trans fats, meat and dairy products and increasing consumption of fruits and vegetables and non-processed foods. |
| What the indicator measures | Number of adults with type 2 diabetes |
| Which variables need to be measured / what data are needed | <ul style="list-style-type: none"> ▪ Geography ▪ Socioeconomic variables ▪ Sex ▪ Race/ethnicity |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | -Number of adults, percentage of the population Note: The indicator can also be applied to other population groups such as "Number of children or youth with type 2 diabetes" |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Instances of diagnosed and undiagnosed diabetes |
| Possible sources of information of such data | -National health department surveillance systems -WHO diabetes country profiles |
| Possible methods/tools for data-collection | -Review of national datasets -Surveys among primary healthcare providers |
| Expertise required | Data analysis, survey design and implementation |

| | |
|--|--|
| Resources required/ estimated costs | |
| Specific observations | Prevalence data generally does not distinguish between type 1 & 2 diabetes but 90-95% of instances are type 2. |
| Examples of application | |

Rationale/evidence

Diabetes is a serious, chronic disease that occurs either when the pancreas does not produce enough insulin (a hormone that regulates blood sugar, or glucose), or when the body cannot effectively use the insulin it produces. Both the number of cases and the prevalence of diabetes have been steadily increasing over the past few decades. Globally, an estimated 422 million adults were living with diabetes in 2014, compared to 108 million in 1980. The global prevalence (age-standardized) of diabetes has nearly doubled since 1980, rising from 4.7% to 8.5% in the adult population. This reflects an increase in associated risk factors such as being overweight or obese. Over the past decade, diabetes prevalence has risen faster in low- and middle-income countries than in high-income countries. Diabetes caused 1.5 million deaths in 2012. Higher-than-optimal blood glucose caused an additional 2.2 million deaths, by increasing the risks of cardiovascular and other diseases. Because sophisticated laboratory tests are usually required to distinguish between type 1 diabetes (which requires insulin injections for survival) and type 2 diabetes (where the body cannot properly use the insulin it produces), separate global estimates of diabetes prevalence for type 1 and type 2 do not exist. The majority of people with diabetes are affected by type 2 diabetes. This used to occur nearly entirely among adults, but now occurs in children too. Diabetes and its complications bring about substantial economic loss to people with diabetes and their families, and to health systems and national economies through direct medical costs and loss of work and wages. While the major cost drivers are hospital and outpatient care, a contributing factor is the rise in cost for analogue insulins which are increasingly prescribed despite little evidence that they provide significant advantages over cheaper human insulins¹.

Glossary/concepts/definitions used

Type 2 diabetes: Diabetes mellitus is a chronic disease caused by inherited and/or acquired deficiency in production of insulin by the pancreas, or by the ineffectiveness of the insulin produced. Such a deficiency results in increased concentrations of glucose in the blood, which in turn damage many of the body's systems, in particular the blood vessels and nerves. Type 2 diabetes is much more common and accounts for around 90% of all diabetes cases worldwide. It occurs most frequently in adults, but is being noted increasingly in adolescents as well².

Preparations

A meeting should be organised with all staff who will be involved in this activity to:

- Familiarise them with diabetes surveillance data and measurement
- Agree on the objectives and scope of the analysis and data collection requirements
- Define the methodology to be applied for data collection and analysis, and
- How to coordinate the activities.

¹ World Health Organization. (2016). Global report on diabetes. World Health Organization. http://apps.who.int/iris/bitstream/handle/10665/204871/9789241565257_eng.pdf;jsessionid=5066019369BD F5A33376336470B598A1?sequence=1

² WHO Fact Sheet #138: Diabetes Mellitus. Available from <http://www.who.int/mediacentre/factsheets/fs138/en/>.

Data Collection and Analysis

Crude estimates of urban diabetes prevalence may be drawn based on the WHO 2016 country level estimates³. This could be achieved by prorating national statistics according to the urban population in question. This would not take into account urban vs rural differences. A second approach would be to search for existing population health surveillance datasets or conducting a survey among households and primary care professionals using a randomized sample to estimate the city's diabetes prevalence. The U.S. Centres for Disease Control and Prevention (CDC) has published detailed diabetes estimates along with explanations of their methodologies⁴.

CDC Estimates of Diagnosed and Undiagnosed Diabetes among Adults Aged 18 Years or Older

The percentage of adults aged 18 years or older with diabetes (diagnosed or undiagnosed) was obtained using 2011–2014 National Health and Nutrition Examination Survey (NHANES) data. People who self-reported being told by a doctor or health professional that they had diabetes (other than during pregnancy) were classified as having diagnosed diabetes. Those not reporting a history of diagnosed diabetes but who had either a fasting plasma glucose greater than or equal to 126 mg/dl or an A1C level greater than or equal to 6.5% were classified as having undiagnosed diabetes. For consistency with earlier estimates, fasting glucose values were adjusted using recommended regression equations. People with missing values for either fasting glucose or A1C and pregnant women were excluded. People with diagnosed diabetes from the interviewed sample were combined with people with undiagnosed diabetes from the fasting plasma glucose subsample. Appropriate sampling weights were used so that the sum of the weights added to the total U.S. population.

The age-specific percentages of diagnosed and undiagnosed diabetes for age groups 18–44, 45–64, and 65 years or older were then applied to the corresponding July 1, 2015 U.S. resident population estimates from the U.S. Census Bureau to derive the age-specific numbers of adults with diagnosed and undiagnosed diabetes. These age-specific numbers of adults were added to obtain the estimated total number of adults with diagnosed and undiagnosed diabetes. The same procedure was used to obtain the total number of adults with diagnosed and undiagnosed diabetes by sex. Age-adjusted percentages of diagnosed and undiagnosed diabetes were calculated among adults aged 18 years or older by sex, race/ethnicity, and education level by the direct method to the 2000 U.S. Census standard population, using age groups 18–44, 45–64, and 65 years or older⁵.

References and links to reports/tools

Centers for Disease Control and Prevention. (2014). National diabetes statistics report: estimates of diabetes and its burden in the United States, 2014. Atlanta, GA: US Department of Health and Human Services, 2014.

World Health Organization: Diabetes country profiles (2016). Available from <http://www.who.int/diabetes/country-profiles/en/>

World Health Organization. (2016). Global report on diabetes. World Health Organization.

³ World Health Organization: Diabetes country profiles 2016. Available from <http://www.who.int/diabetes/country-profiles/en/>.

⁴ Centers for Disease Control and Prevention. (2014). National diabetes statistics report: estimates of diabetes and its burden in the United States, 2014. Atlanta, GA: US Department of Health and Human Services, 2014.

⁵ CDC (2014). Op. cit.



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Indicator 12: Prevalence of stunting for children under 5 years

MUFPP framework of actions' category: Sustainable diets and nutrition

This indicator measures prevalence of stunting (poor linear growth) among children under 5 years. Stunting refers to low height for age, reflecting a sustained past episode or episodes of under-nutrition and poor health.

Overview table

| MUFPP Work stream | Sustainable Diets and Nutrition |
|--|--|
| MUFPP action | Address non-communicable diseases associated with poor diets and obesity, giving specific attention where appropriate to reducing intake of sugar, salt, trans fats, meat and dairy products and increasing consumption of fruits and vegetables and non-processed foods. |
| What the indicator measures | Prevalence of stunting (poor linear growth) among children under 5 years. Stunting refers to low height for age, reflecting a sustained past episode or episodes of under-nutrition and poor |
| Which variables need to be measured / what data are needed | -Height and age -This indicator can be disaggregated by sex, age, household income, and other socioeconomic and spatial qualifiers. |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Percentage of stunting among children under 5 years – Height (cm) for age (months) <-2 SD of WHO Child Growth Standards median. |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Children under 5 years |
| Possible sources of information of such data | -Public school records, municipal public health records -Population surveillance data from WHO, national health departments -Primary data collection from primary health care providers |
| Possible methods/tools for data-collection | -Data analysis from existing records: data might already have been collected as part of school routine health checks where these measures are taken. -Household surveys |
| Expertise required | Data analysis, survey design and implementation. |

| | |
|--|---|
| | Requires carrying height boards to measure heights of children and specific training for accurate measurement. Requires determining child's age in months accurately. |
| Resources required/ estimated costs | |
| Specific observations | <p>Data quality problems can be eliminated or minimised through proper survey planning, thorough training, continuous standardization, and close field supervision to ensure adherence to measurement protocols throughout the data collection process.</p> <p>This indicator will usually not allow to show observable changes in many small scale interventions and over short periods of time.</p> |
| Examples of application | |

Rationale/evidence

Children's linear growth in the first five years of life is assessed by the stunting indicator. Stunting is evidence that children are too short for their age, which in turn is a reflection of a chronic state of undernutrition.

Undernutrition puts children at greater risk of dying from common infections, increases the frequency and severity of such infections, and contributes to delayed recovery. The interaction between undernutrition and infection can create a potentially lethal cycle of worsening illness and deteriorating nutritional status. Poor nutrition in the first 1,000 days of a child's life can also lead to stunted growth, which is associated with impaired cognitive ability and reduced school and work performance. In 2016, 22.9% of children under age 5 worldwide had stunted growth. Overall trends are positive. From 2000-2016, stunting prevalence declined from 32.7% to 22.9% globally, and the number of children affected fell from 198 million to 155 million. In 2016, about one in two stunted children lived in South Asia and one in three in sub-Saharan Africa¹.

Despite improvements in the number of population-based, nationally representative surveys conducted since 1990, many countries do not have high quality data on anthropometric indicators that allow an examination of trends over time. In some instances, surveys have been completed and reports written but documentation is either suboptimal or the reports are not made available².

Glossary/concepts/definitions used

Stunting: The World Health Organisation defines stunting as the "height for age" value being less than two standard deviations of the WHO Child Growth Standards median³.

Preparations

A meeting should be organised with all staff who will be involved in this activity to:

- Familiarise them with the methodological guidelines
- Agree on the objectives and scope of the analysis and data collection requirements
- Develop/ adapt a survey design if primary data collection is needed, and
- Agree on the frequency and period of data collection.

Data Collection and Analysis

For a detailed overview of the methodology for collecting and analysing data for child stunting estimates, see the methodology chapter in the 2012 UNICEF-WHO global estimates report⁴.

References and links to reports/tools

De Onis, M., Brown, D., Blossner, M., & Borghi, E. (2012). Levels and trends in child malnutrition. UNICEF-WHO-The World Bank joint child malnutrition estimates.

Levels and Trends in Child Malnutrition: Key findings of the 2017 edition (2017). UNICEF / WHO / World Bank Group. Joint Child Malnutrition Estimates.

¹ UNICEF (2018). Undernutrition contributes to nearly half of all deaths in children under 5 and is widespread in Asia and Africa. Available from <https://data.unicef.org/topic/nutrition/malnutrition>.

² De Onis, M., Brown, D., Blossner, M., & Borghi, E. (2012). Levels and trends in child malnutrition. UNICEF-WHO-The World Bank joint child malnutrition estimates. Available from http://www.who.int/nutgrowthdb/jme_unicef_who_wb.pdf.

³ <http://www.who.int/nutgrowthdb/about/introduction/en/index2.html>

⁴ De Onis, et al. (2012). Op. cit.



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Indicator 13: Prevalence of overweight or obesity among adults, youth and children

MUFPP framework of actions' category: Sustainable diets and nutrition

This indicator measures prevalence of overweight or obesity among adults, youth and children.

Overview table

| MUFPP Work stream | Sustainable Diets and Nutrition |
|--|--|
| MUFPP action | Address non-communicable diseases associated with poor diets and obesity, giving specific attention where appropriate to reducing intake of sugar, salt, trans fats, meat and dairy products and increasing consumption of fruits and vegetables and non-processed foods. |
| What the indicator measures | Prevalence of overweight or obesity among adults, youth and children |
| Which variables need to be measured / what data are needed | Body weight and height measurements; age and gender |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Percentage of populations that are overweight or obese |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | -Need for disaggregation by age: Birth to <5 years of age; age 5-18; >18 years of age -Need for disaggregation by gender |
| Possible sources of information of such data | Primary collection of individual measurements in school setting for children and youth and from primary healthcare professionals for adults. Municipal public health system records; Public school records. |
| Possible methods/tools for data-collection | Previous or ongoing records and surveys by the health department Direct measurement |
| Expertise required | Height and weight measurement |
| Resources required/ estimated costs | |

| | |
|--------------------------------|--|
| Specific observations | Note: This indicators covers in fact 3 indicators: overweight in children under 5 years of age (which is SDG indicator 2.2.2); obesity in school-aged children (ages 5-19), and adult obesity. Sources and standards are different for each. |
| Examples of application | In 2014, the Toronto Public Health department conducted The Student Survey that collected health information, including the direct measurement of students' height and weight. Public Health Nurses and assistants visited 466 classrooms at 165 schools during a 7-week period. The survey sample included 6,053 grade 7 to 12 students. The sample was designed to represent Toronto's diverse public school students, and took into account grade, school board, an average measure of students' socio-economic status within each school, and each school's location within Toronto. The results found that almost one in three students were overweight or obese, putting them at higher risk for heart disease, diabetes and some cancers later in life ¹ . |

Rationale/evidence

Obesity is a complex health issue to address. Obesity results from a combination of causes and contributing factors, including individual factors such as behaviour and genetics. Behaviours can include dietary patterns, physical activity, inactivity, medication use, and other exposures. Additional contributing factors in our society include the food and physical activity environment, education and skills, and food marketing and promotion. Obesity is associated with poorer mental health outcomes, reduced quality of life, diabetes, heart disease, stroke, and some types of cancer².

Childhood obesity is reaching alarming proportions in many countries and poses an urgent and serious challenge. The Sustainable Development Goals, set by the United Nations in 2015, identify prevention and control of non-communicable diseases as core priorities, and child overweight is one component of SDG indicator 2.2.2. Among the non-communicable disease risk factors, obesity is particularly concerning and has the potential to negate many of the health benefits that have contributed to increased life expectancy. The prevalence of infant, childhood and adolescent obesity is rising around the world. Although rates may be plateauing in some settings, in absolute numbers there are more children who are overweight and obese in low- and middle-income countries than in high-income countries. Obesity can affect a child's immediate health, educational attainment and quality of life. Children with obesity are very likely to remain obese as adults and are at risk of chronic illness³.

Glossary/concepts/definitions used

BMI: Body mass index (kg/m^2) = weight (kg)/height² (m^2)

ADULT OVERWEIGHT AND OBESITY: Weight that is higher than what is considered as a healthy weight for a given height is described as overweight or obese. BMI is used as a screening tool for overweight or obesity. Overweight is defined as a BMI of 25.0 to <30, and obesity is a BMI of 30.0 or higher.

¹ Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015. <https://www.toronto.ca/legdocs/mmis/2015/hl/bgrd/backgroundfile-76820.pdf>

² Centers for Disease Control & Prevention (2017). Adult Obesity Causes & Consequences. Available from <https://www.cdc.gov/obesity/adult/causes.html>.

³ World Health Organization (2016). Report of the Commission on Ending Childhood Obesity. 2016. WHO Press. Geneva. <http://www.who.int/end-childhood-obesity/publications/echo-report/en/>

CHILDHOOD OBESITY: From birth to less than 5 years of age: weight-for-height more than 3 Standard Deviation (SD) above the WHO Child Growth Standards median⁴. From age 5 to less than 19 years: BMI-for-age more than 2 SD above the WHO growth reference median⁵.

CHILDHOOD OVERWEIGHT: From birth to less than 5 years of age: weight-for-height more than 2 SD above WHO Child Growth Standards median⁶. From age 5 to less than 19 years: BMI-for-age more than 1 SD above WHO growth reference median⁷.

⁴ Ng M, Fleming T, Robinson M, Thomson B, Graetz N, Margono C, et al. Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet*. 2014; 384:766–81.

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(14\)60460-8/abstract](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(14)60460-8/abstract)

⁵ Roberto CA, Swinburn B, Hawkes C, Huang TTK, Costa SA, Ashe M, et al. Patchy progress on obesity prevention: emerging examples, entrenched barriers, and new thinking. *Lancet*. 2015; 385:2400–9.

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(14\)61744-X/abstract?code=lancet-site](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(14)61744-X/abstract?code=lancet-site)

⁵ Ng et al. (2014), op. cit.

⁶ Ng et al. (2014), op. cit.

⁷ Roberto et al. (2015), op. cit.

Data Collection and Analysis

Child Overweight and Obesity Measurement

Child overweight and obesity measurement is often coordinated through the school system. But the surveillance project requires collaboration among a wide range of local stakeholders whose assistance can help to improve delivery of the programme, data and information that needs to be collected, staff training and equipment required and which schools and children should be included. Engaging with local authority staff, primary care professionals, providers, schools, parents and children themselves can help with delivery and ensure all involved understand the purpose, benefits and outcomes of the programme.

Taking the Measurements

Measurements should take place in a private room where the results are secure and cannot be seen or heard by anyone who is not directly involved in taking the measurements. In the exceptional case that a separate room is not available, a screened-off area of a classroom can be used. Practitioners should ensure that the calibrated weighing scale is placed on a firm, level surface with the read-out display concealed from the participating child and others. Practitioners should also ensure the height measure is correctly assembled and is placed on a firm, level surface with its stabilisers resting against a vertical surface (such as a wall or door) to ensure maximum rigidity. It is good practice to confirm that the height measure is correctly assembled by checking with an item of known length, such as a metre ruler.

For a step by step guide to measuring child and youth overweight and obesity, see the National Child Measurement Programme Operational Guidance (2017)⁸.

Adult Overweight and Obesity Measurement

For a guide to measuring adult overweight and obesity, see TOOL E3 Measurement and assessment of overweight and obesity⁹.

Data disaggregation

Data need to be disaggregated by age (Birth to <5 years of age; age 5-18; >18 years of age) and gender.

References and links to reports/tools

Centers for Disease Control & Prevention (2016). Defining Adult Overweight and Obesity. Available from <https://www.cdc.gov/obesity/adult/defining.html>.

De Onis, M., Brown, D., Blossner, M., & Borghi, E. (2012). Levels and trends in child malnutrition. UNICEF-WHO-The World Bank joint child malnutrition estimates.

Levels and Trends in Child Malnutrition: Key findings of the 2017 edition (2017). UNICEF / WHO / World Bank Group. Joint Child Malnutrition Estimates.

Public Health England (2017). National Child Measurement Programme Operational Guidance 2017. Available from

⁸ Public Health England (2017). National Child Measurement Programme Operational Guidance 2017. Available from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/643226/PHE_national_child_measurement_programme_operational_guidance.pdf.

⁹ UK Faculty of Public Health. TOOL E3 Measurement and assessment of overweight and obesity – ADULTS. Available from http://www.fph.org.uk/uploads/HealthyWeight_SectE_Toolkit03.pdf.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/643226/PHE_national_child_measurement_programme_operational_guidance.pdf.

UK Faculty of Public Health. TOOL E3 Measurement and assessment of overweight and obesity – ADULTS. Available from http://www.fph.org.uk/uploads/HealthyWeight_SectE_Toolkit03.pdf.

World Health Organization (2016). Report of the Commission on Ending Childhood Obesity. 2016. WHO Press. Geneva.



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Indicator 14: Number of city-led or supported activities to promote sustainable diets

MUFPP framework of actions' category: Sustainable diets and nutrition

The indicator measures the number of city-led or supported activities to promote sustainable diets. Data might be disaggregated by type of activity and target audience.

Overview table

| MUFPP Work stream | Sustainable Diets and Nutrition |
|--|--|
| MUFPP action | Develop sustainable dietary guidelines to inform consumers, city planners (in particular for public food procurement), food service providers, retailers, producers and processors, and promote communication and training campaigns. |
| What the indicator measures | Number of city-led or supported activities to promote sustainable diets |
| Which variables need to be measured / what data are needed | Total number of activities, number of people participating in activities |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Number of city-led or supported activities |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Data can be disaggregation by type of activity and target audience |
| Possible sources of information of such data | Records from local government departments or NGOs supporting activities |
| Possible methods/tools for data-collection | -Analysis of records -Survey among community agencies/ NGOs |
| Expertise required | Data analysis, survey design and implementation |
| Resources required/ estimated costs | |

| | |
|--------------------------------|--|
| Specific observations | The indicator can monitor activities on sustainable diets from a specific perspective that is of most interest to a given city. Cities and countries have – according to their priorities -for example focused on the following variables of sustainable diets: seasonal, local, organic production, consuming less meat and fish; and considering packaging. In Germany, there is an additional focus on purchasing fair trade–certified produce wherever possible ¹ . |
| Examples of application | Some countries, such as Germany and Sweden, have developed guidelines for their citizens that integrate health and sustainability when making food choices. However, the Swedish guidelines were withdrawn following incompatibility with the European Union’s internal market. |

Rationale/evidence

The choices we make about the food we eat affect our health and have major ramifications for the state of the environment. The food system is responsible for more than a quarter of all greenhouse gas (GHG) emissions, of which up to 80% are associated with livestock production. Without targeted dietary changes, the situation is expected to worsen as a growing and wealthier global population adopts diets resulting in more GHG emissions and that increase the health burden from chronic, non-communicable diseases associated with high body weight and unhealthy diets². There is no consensus on what constitutes a sustainable diet but, in general, it is one with “low environmental impacts that contribute to food and nutrition security and healthy life for present and future generations”³. By this or any other definition, no country has achieved a sustainable diet at this point.

Glossary/concepts/definitions used

Sustainable Diet: Sustainable diets are those diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimising natural and human resources⁴.

City-led or Supported Activities: Any type of event, publication or activity designed to promote sustainable diets to the local population or more broadly in collaboration with regional and/or national partners.

Preparations

The team responsible for monitoring this indicator should agree on:

1. Type of data disaggregation and categories that will be used
2. Data collection method, and
3. List of departments or community agencies/ NGOs from which to request data.

¹ Clonan, A., & Holdsworth, M. (2012). The challenges of eating a healthy and sustainable diet. *Am J Clin Nutr* September 2012. Vol. 96 no. 3 459-460. <https://academic.oup.com/ajcn/article/96/3/459/4576746>

² Springmann, M., Godfray, H. C. J., Rayner, M., & Scarborough, P. (2016). Analysis and valuation of the health and climate change co-benefits of dietary change. *Proceedings of the National Academy of Sciences*, 113(15), 4146-4151. <http://www.pnas.org/content/113/15/4146>

³ FAO. (2010). Sustainable diets and biodiversity. Directions and solutions for policy, research and action. In Proceedings of the international scientific symposium: “biodiversity and sustainable diets united against hunger”, 3-5 November 2010. Rome, Italy: FAO Headquarters. <http://www.fao.org/docrep/016/i3004e/i3004e.pdf>

⁴ FAO. (2010). Op cit.

Sampling:

Given that sustainable diet promotion is still a new area, it is unlikely that sampling will be needed.

Data Collection and Analysis

Data disaggregation can be done by the type of activity and the type and number of audiences targeted by the activity.

Type of Activity

Indicate the number and different types of activities to promote sustainable diets:

- ▶ Reports
- ▶ Public information campaigns
- ▶ Events
- ▶ Training

Types of Audiences

- ▶ General public
- ▶ Government officials
- ▶ Health professionals
- ▶ Schools
- ▶ Others

References and links to reports/tools

Birt, C., Buzeti, T., Grosso, G., Justesen, L., Lachat, C., Lafranconi, A. & Sarlio-Lähteenkorva, S. (2017). Healthy and Sustainable Diets for European Countries.

Donati, M., Menozzi, D., Zighetti, C., Rosi, A., Zinetti, A., & Scazzina, F. (2016). Towards a sustainable diet combining economic, environmental and nutritional objectives. *Appetite*, 106, 48-57.

FAO. (2010). Sustainable diets and biodiversity. Directions and solutions for policy, research and action. In Proceedings of the international scientific symposium: “biodiversity and sustainable diets united against hunger”, 3e5 November 2010. Rome, Italy: FAO Headquarters.

Mason, P., & Lang, T. (2017). Sustainable diets: How ecological nutrition can transform consumption and the food system. Taylor & Francis.



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March 2021 version

Indicator 15: Existence of policies/programmes that address sugar, salt and fat consumption in relation to specific target groups (e.g. general public, in hospitals & schools)

MUFPP framework of actions' category: Sustainable diets and nutrition

The indicator measures the existence of laws/regulations/policies/programmes that address sugar, salt and fat consumption in relation to specific target groups (e.g. general public, in hospitals and schools).

Overview table

| MUFPP Work stream | Sustainable Diets and Nutrition |
|---|---|
| MUFPP action | <ul style="list-style-type: none"> - Explore regulatory and voluntary instruments to promote sustainable diets involving private and public companies as appropriate, using marketing, publicity ... - Encourage joint action by health and food sectors to implement integrated people-centred strategies for healthy lifestyles and social inclusion. |
| What the indicator measures | Existence of laws/regulations/policies/programmes that address sugar, salt and fat consumption in relation to specific target groups (e.g. general public, in hospitals & schools) |
| Which variables need to be measured / what data are needed | <ul style="list-style-type: none"> . Number and type of laws, regulations, policies and programmes . Level of implementation and enforcement and Information and communication . Number and type of information and communication mechanisms and target groups |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | <ul style="list-style-type: none"> . Number (and types) of laws, regulations, policies and programmes . Number and type of information and communication mechanisms and target groups |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | <ul style="list-style-type: none"> . Laws/Regulations/Policies/ programmes related to sugar, salt and fat consumption |
| Possible sources of information of such data | <ul style="list-style-type: none"> -City council -Health departments, education departments, -School boards/ associations -Hospitals |

| | |
|---|--|
| Possible methods/tools for data-collection | <ul style="list-style-type: none"> ▪ Data collection from existing reports ▪ Surveys |
| Expertise required | Data analysis, survey design and implementation |
| Resources required/estimated costs | |
| Specific observations | |
| Examples of application | |

Rationale/evidence

Non-communicable diseases (NCDs) are increasing at alarming rates globally. The burden of NCDs in developing countries outweighs that of communicable diseases, both in high and low-income countries. There are globally more than 1 billion overweight people and at least 300 million of them are clinically obese. Close to 800 million people are suffering from malnutrition, a slow decline over the past decade. Lifestyle and consumption patterns are key determinants of such diseases and include changes in diets, physical activity and tobacco use. Rapid changes in diets and lifestyles that have occurred with industrialisation, urbanisation, economic development and market globalisation, have accelerated over the past decade. This is having a significant impact on the health and nutritional status of populations, particularly in developing countries and in countries in transition. While standards of living have improved, food availability has expanded and become more diversified, and access to services has increased, there have also been significant negative consequences in terms of inappropriate dietary patterns, decreased physical activities and increased tobacco use. Changes in the world food economy are reflected in shifting dietary patterns, for example, increased consumption of energy-dense diets high in fat, sugar and salt. Because of these changes in dietary and lifestyle patterns, chronic NCDs (including obesity, diabetes mellitus, cardiovascular disease (CVD), hypertension and stroke, and some types of cancer) are becoming increasingly significant causes of disability and premature death in both developing and newly developed countries, placing additional burdens on already overtaxed national health budgets¹.

Glossary/concepts/definitions used

NCDs: A non-communicable disease (NCD) is a medical condition or disease that is not caused by infectious agents (non-infectious or non-transmissible). NCDs can refer to chronic diseases which last for long periods of time and progress slowly. NCDs also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviours factors. The main types of NCDs are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes (<http://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>)

Policy: A course of action adopted by government (business or organisation) to induce certain changes in the decisions and behaviour of actors in that society in order to achieve certain goals.

Programme: A set plan of activities to produce positive outcomes for a specific or targeted population.

Preparations

The team responsible for monitoring this indicator should agree on the type of data disaggregation and categories that will be used and the data collection method.

Sampling

A purposely sampled number of external stakeholders (e.g. health departments, education departments, school boards/ associations, hospitals) could be engaged in a participatory analysis of existing policies and programmes.

¹ World Health Organization. (2003). Diet, nutrition and the prevention of chronic diseases: Report of a Joint WHO/FAO Expert Consultation. Available from http://apps.who.int/iris/bitstream/10665/42665/1/WHO_TRS_916.pdf?ua=1.

Data Collection and Analysis

During a monitoring/review meeting the following table can be discussed and filled. Specific observations made during the meeting can be added in the final column. Also recommendations for improvement can be added here.

Scoring sheet

| Characteristics | Scoring | | | Total score | Disaggregation of information | Observations/ Recommendations |
|--|---------------------------|--------------------|--------------|-------------|--|-------------------------------|
| Presence of policies/programmes that address sugar, salt and fat consumption in relation to specific target groups | Yes= 1 point | No= 0 points | | | -Number and type of laws/policies and regulations -Type of target groups addressed | |
| | | | | | | |
| Level of implementation: is the municipal policy/implementation actually implemented or enforced? | Yes, completely= 2 points | Partially= 1 point | No= 0 points | | -Discuss for each of the policies or regulations. -Indicate reasons for partial or non-implementation/enforcement | |
| | | | | | | |
| Information and communication: Are policies and regulations widely shared within city government and to potential beneficiaries | Yes, completely= 2 points | Partially= 1 point | No= 0 points | | -Number and type of information and communication mechanisms and target groups | |
| | | | | | | |
| Total score: | | | | | | |

Note: If existing, it may be relevant to further critically assess the specific policies or programmes themselves in order to highlight areas for improvement. The critical policy analysis proposed for Indicator 3 (*Presence of a municipal urban food policy or strategy and/or action plans*) may be used and adapted for this purpose.

Data analysis/calculation of the indicator

Based on the scoring and further information provided, participants in the monitoring/review process may identify gaps or areas for strengthening or improvement:

- How can existing policies and programmes be better implemented and communicated?
- What new or revised policies and programmes are proposed?
- What process should be followed to implement these changes? Steps to be taken? Stakeholders to be involved? Critical time-lines? Resources required?

References and links to reports/tools

World Health Organization. (2003). Diet, nutrition and the prevention of chronic diseases: Report of a Joint WHO/FAO Expert Consultation. Available from http://apps.who.int/iris/bitstream/10665/42665/1/WHO_TRS_916.pdf?ua=1.



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Indicator 16: Presence of programmes/policies that promote the availability of nutritious and diversified foods in public facilities

MUFPP framework of actions' category: Sustainable diets and nutrition

The indicator monitors presence of programmes/policies that promote the availability of nutritious and diversified foods in public facilities.

Overview table

| MUFPP Work stream | Sustainable Diets and Nutrition |
|--|---|
| MUFPP action | Adapt standards and regulations to make sustainable diets and safe drinking water accessible in public sector facilities such as hospitals, health and childcare facilities, workplaces, universities, schools, food and catering services, municipal offices and prisons, and to the extent possible, in private sector retail and wholesale food distribution and markets. |
| What the indicator measures | Presence of programmes/policies that promote the availability of nutritious and diversified foods in public facilities |
| Which variables need to be measured / what data are needed | <ul style="list-style-type: none"> ▶ Number and type of policies and programmes ▶ Level of implementation ▶ Information and communication ▶ Types of public facilities |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | <ul style="list-style-type: none"> ▶ Number (and types) of policies and programmes ▶ Number and type of information and communication mechanisms and target groups |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | <ul style="list-style-type: none"> ▶ Policies/ programmes related to nutritious and diversified foods in public facilities |
| Possible sources of information of such data | <ul style="list-style-type: none"> ▶ City council public records ▶ Health departments ▶ Education departments, school boards/ associations |
| Possible methods/tools for data-collection | <ul style="list-style-type: none"> ▶ Programme/ policy review and document analysis |
| Expertise required | <ul style="list-style-type: none"> ▶ Policy and document analysis |

| | |
|--|--|
| Resources required/ estimated costs | |
| Specific observations | |
| Examples of application | |

Rationale/evidence

Consumption of sufficient, safe, and nutritious food is critical to the health and well-being of any urban household/individual. The Milan Pact Monitoring Framework proposes a set of indicators to measure different aspects of sustainable diets and nutrition. The combination of these indicators provides the more comprehensive analysis. Non-communicable diseases (NCDs) are increasing at alarming rates globally. The burden of NCDs in developing countries outweighs that of communicable diseases, both in high and low-income countries. There are globally more than 1 billion overweight people and at least 300 million of them are clinically obese. Close to 800 million people are suffering from malnutrition, a slow decline over the past decade. Lifestyle and consumption patterns are key determinants of such diseases and include changes in diets, physical activity and tobacco use. Rapid changes in diets and lifestyles that have occurred with industrialisation, urbanisation, economic development and market globalisation, have accelerated over the past decade. This is having a significant impact on the health and nutritional status of populations, particularly in developing countries and in countries in transition. Changes in the world food economy are reflected in shifting dietary patterns, for example, increased consumption of energy-dense diets high in fat, sugar and salt. Because of these changes in dietary and lifestyle patterns, chronic NCDs (including obesity, diabetes mellitus, cardiovascular disease (CVD), hypertension and stroke, and some types of cancer) are becoming increasingly significant causes of disability and premature death in both developing and newly developed countries, placing additional burdens on already overtaxed national health budgets¹.

Local governments have the opportunity to set standards for the quality of foods available in public facilities such as government offices, parks, community centres, childcare sites and events. While the majority of food access points (supermarkets, convenience stores, etc.) are not run by governments, setting standards in publically run environments can help normalize healthier, more diversified food options and leverage public funding to support the development of supply chains for these foods.

Glossary/concepts/definitions used

Diversified Foods/ Food Group Diversity: Refers to the diversity of consumption. For this purpose, food items are grouped under overall food groups. The ten used food groups are: 1. Grains, white roots and tubers, and plantains 2. Pulses (beans, peas and lentils) 3. Nuts and seeds 4. Dairy 5. Meat, poultry and fish 6. Eggs 7. Dark green leafy vegetables 8. Other vitamin A-rich fruits and vegetables 9. Other vegetables 10. Other fruits².

Policy: A course of action adopted by government (business or organisation) to induce certain changes in the decisions and behaviour of actors in that society in order to achieve certain goals.

Programme: A set plan of activities to produce positive outcomes for a specific or targeted population.

Public Facility: Any building, place or event that is wholly funded or directly operated by a government department or agency.

¹ World Health Organization. (2003). Diet, nutrition and the prevention of chronic diseases: Report of a Joint WHO/FAO Expert Consultation. Available from http://apps.who.int/iris/bitstream/10665/42665/1/WHO_TRS_916.pdf?ua=1.

² The food groups are further described and defined in <http://www.fao.org/3/a-i5486e.pdf>, Section 2, and Appendix 2

Preparations

The team responsible for monitoring this indicator should agree on the type of data disaggregation and categories that will be used and the data collection method.

Sampling

A randomly sampled number of internal and external stakeholders (e.g. health departments, education departments, school boards/ associations, hospitals) could be engaged in a participatory analysis of existing policies and programmes.

Data Collection and Analysis

During a monitoring/review meeting the following table can be discussed and filled. Specific observations made during the meeting can be added in the final column. Also recommendations for improvement can be added here.

Scoring sheet

| Characteristics | Scoring | | | Total score | Disaggregation of information | Observations/Recommendations |
|--|---------------------------|---------------------|--------------|-------------|---|------------------------------|
| Presence of programmes/policies that promote the availability of nutritious and diversified foods in public facilities | Yes= 1 point | No= 0 points | | | -Number and type of policies and programmes -Distinguish among types of facilities | |
| | | | | | | |
| Level of implementation: is the municipal policy/implementation actually implemented or enforced? | Yes, completely= 2 points | Partially = 1 point | No= 0 points | | -Discuss for each of the policies or programmes. -Indicate reasons for partial or non-implementation/enforcement | |
| | | | | | | |
| Information and communication: Are policies and regulations widely shared within city government and to potential beneficiaries | Yes= 1 point | Partially= 1 point | No= 0 points | | Number and type of information and communication mechanisms and target groups | |
| | | | | | | |
| Total score: | | | | | | |

Note: If existing, it may be relevant to further critically assess the specific policies or programmes themselves in order to highlight areas for improvement. The critical policy analysis proposed for Indicator 3 (*Presence of a municipal urban food policy or strategy and/or action plans*) may be used and adapted for this purpose.

Data analysis/calculation of the indicator

Based on the scoring and further information provided, participants in the monitoring/review process may identify gaps or areas for strengthening or improvement:

- ▶ How can existing policies and programmes be better implemented and communicated?
- ▶ What new or revised policies and programmes are proposed?
- ▶ What process should be followed to implement these changes? Steps to be taken? Stakeholders to be involved? Critical time-lines? Resources required?

References and links to reports/tools

World Health Organization. (2003). Diet, nutrition and the prevention of chronic diseases: Report of a Joint WHO/FAO Expert Consultation. Available from http://apps.who.int/iris/bitstream/10665/42665/1/WHO_TRS_916.pdf?ua=1.



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Milan Urban Food Policy Pact Monitoring Framework

March 2021 version

Indicator 17: Percentage of population with access to safe drinking water and adequate sanitation

MUFPP framework of actions' category: Sustainable diets and nutrition

The indicator measures the percentage of population with access to safe drinking water and adequate sanitation. By disaggregating the data spatially and by different socioeconomic strata, it is possible to identify which parts of the population are being left behind.

Overview table

| MUFPP Work stream | Sustainable Diets and Nutrition |
|--|---|
| MUFPP action | <p>- Adapt standards and regulations to make safe drinking water accessible in public and private sector facilities such as hospitals, health and childcare facilities, workplaces universities, schools, food and catering services, municipal offices and prisons, and to the extent possible, in private sector retail and wholesale food distribution and markets.</p> <p>- Invest in and commit to achieving universal access to safe drinking water and adequate sanitation with the participation of civil society and various partnerships, as appropriate.</p> |
| What the indicator measures | Percentage of population with access to safe drinking water and adequate sanitation |
| Which variables need to be measured / what data are needed | <ul style="list-style-type: none"> • Regional differences • Socio-economic variations • Informal urban settlements • Locally important marginalized groups. |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Percentage of population |
| Unit(s) of Analysis (i.e. people under 5 years old, ect.) | <p>Current data can be disaggregated for place of residence and subnational region as well as wealth. Over time, the ambition is to include informal urban settlements in the data collected, as well as to develop survey instruments that can capture marginalized groups.</p> <p>By disaggregating the data spatially and by different socioeconomic strata, it is possible to identify which parts of the population are being left behind.</p> |

| | |
|---|---|
| Possible sources of information of such data | -Household surveys -Institution/ utility records and licensed sanitation emptying service providers |
| Possible methods/tools for data-collection | Household surveys |
| Expertise required | Survey data collection and analysis. Experience in primary research in marginalised communities. |
| Resources required/ estimated costs | |
| Specific observations | |
| Examples of application | In 2015, WHO and UNICEF provided estimates for safely managed drinking water for 96 countries, representing 35% of the global population ¹ . |

Rationale/evidence

Access to water, sanitation and hygiene is a human right, but approximately 1.8 billion people use a source of drinking water that is fecally contaminated. Globally 2.4 billion people lack access to basic sanitation services. More than 80 percent of wastewater resulting from human activities is discharged into rivers or sea without any treatment, leading to pollution².

Water and sanitation improvements, in addition to hygiene behaviour education, can have significant health effects by reducing a variety of disease conditions such as diarrhoea, intestinal helminths, guinea worm, and skin diseases. Water and sanitation improvements affect health primarily by interrupting or reducing the transmission of disease agents. Raising the quality of drinking water reduces the ingestion of pathogens. With less disease, children can eat and absorb more food, thereby improving their nutritional status. Also, a healthier adult population is a more productive population, and improvements in water and sanitation can improve income and the capacity to acquire food³.

Improving the quality and quantity of water available can also lead to greater income generation or food production activities, both of which could result in the intake of more and better food, improving a family's diet as well as child health outcomes. A safely managed sanitation chain is essential to protecting the health of individuals and communities. Leaking latrines and raw wastewater can spread disease and provide a breeding ground for mosquitoes, as well as pollute groundwater and surface water that may serve as potential sources of drinking water.

Target 6 of the Sustainable Development Goals calls for the achievement by 2030 of “universal and equitable access to safe and affordable drinking water for all” and “access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations”. Women and girls are a specific demographic of interest because increasing access to water and sanitation means they will not have to walk for hours to collect water and not having to share sanitary facilities with other households improves women's security. Reduced time in accessing water also frees up time to care for sick household members. Improved access also supports menstrual hygiene management which will help to enable more women and girls

¹ World Health Organization and the United Nations Children's Fund (2017). Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG baselines. Available from <http://www.who.int/mediacentre/news/releases/2017/launch-version-report-jmp-water-sanitation-hygiene.pdf>.

² United Nations (2006). Clean Water and Sanitation: Why it matters. Available from http://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/6_Why-it-Matters_Sanitation_2p.pdf.

³ Billig, P., Bendahmane, D. & Swindale, A. (1999). Water and Sanitation Indicators Measurement Guide. Food and Nutrition Technical Assistance Project, Academy for Educational Development.

to attend school and work outside the home⁴.

Glossary/concepts/definitions used

Access to a safe water source: The home or compound is connected directly to a piped system or that a public fountain, well, or stand post is located within 200 meters of the home.

Safe drinking water: The water is free of contaminants. The treatment needed for water to qualify as “safe” is directly dependent on the quality of the raw water.

Improved sanitation facility: Includes flush or pour-flush toilets to sewerage systems, septic tanks or pit latrines, improved pit latrines (pit latrines with a slab or ventilated pit latrines) and composting toilets. Improved sanitation facilities that do not fulfil the above-mentioned criteria for treatment are categorized as “basic” services. If the facility is shared with other households the service is categorized as “limited”.

Use of safely managed sanitation services: A sanitation facility is the predominant means of excreta disposal for household members >12 months of age.

Preparations

Local governments will need to link with national government agencies and ministries in coordination data collection and analysis. One option could include an inter-sectoral monitoring team that includes statistical offices, national agencies/ ministries and other sector representatives. The responsibility for data collection, analysis and dissemination, as well as reporting, could then fall on the inter-sectoral team. Establishing mechanisms for easy and transparent sharing and validation of data is critical for ensuring a strong link among stakeholders for implementing solutions.

A meeting should be organised with all partners who will be involved in this activity to:

- Agree on the objectives and scope of the analysis and data collection requirements
- Define the methodology to be applied for data collection and analysis, and
- How to coordinate the activities within the team.

Sampling:

Data are collected by means of a survey of a random sample of households. A cluster survey should not be used because water sources may be location related. The survey should be carried out at the time of year when the water quantity is lowest or most sources have run dry. The surveyor(s) should visit each house or compound and verify access to a water supply. In some cases, the distance to the water supply may have to be measured to be sure it is within 200 meters⁵.

Data Collection and Analysis

This section provides an overview of key issues in data collection and analysis. For a more comprehensive guide, please refer to the resources below:

- The Integrated Monitoring Guide for Sustainable Development Goal 6 (2017)⁶ provides additional information on definitions, variables for disaggregation, complementary indicators and stages of monitoring.

⁴ UN Water (2017). Integrated Monitoring Guide for Sustainable Development Goal 6 on Water and Sanitation – Targets and global indicators.

⁵ Billig et al. (1999), op. cit.

⁶ UN Water (2017), op. cit.

- USAID's Water and Sanitation Indicators Measurement Guide (1999)⁷ is an in depth guide covering monitoring indicators for measuring water and sanitation-related program performance with definitions, calculation, sources of data and target values.
- The WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation developed a set of harmonized survey questions on access to water and sanitation facilities⁸.

⁷ Billig et al. (1999), op. cit.

⁸ World Health Organization (2006). Core questions on drinking-water and sanitation for household surveys. Available from http://www.who.int/water_sanitation_health/monitoring/oms_brochure_core_questionsfinal24608.pdf.

| Indicator | Potential Data Sources | Notes |
|---|--|---|
| Percentage of households with year-round access to a safe water source | Data are collected by means of a survey of a random sample of households. A cluster survey should not be used because water sources may be location related. | WHO collected data on “reasonable access to safe drinking water” from national governments five times during the International Decade for Drinking Water Supply and Sanitation (1980 to 1990). Such access was defined for urban areas as access to piped water or a public standpipe within 200 meters of a dwelling or housing unit. For rural areas, “reasonable” is taken to mean that a family member need not spend a “disproportionate” part of the day collecting water. |
| Proportion of the population using safely managed sanitation services | Household surveys in which the surveyor asks the mother or household head about family latrine use and then inspects the latrine to see if it is functioning, hygienic and shows signs of use. | <p>Improved sanitation facilities include flush or pour-flush toilets to sewerage systems, septic tanks or pit latrines, improved pit latrines (pit latrines with a slab or ventilated pit latrines) and composting toilets.</p> <p>Improved sanitation facilities that do not fulfil the above-mentioned criteria for treatment are categorized as “basic” services. If the facility is shared with other households the service is categorized as “limited”.</p> <p>For young children, the issue is whether their feces are deposited into a sanitation facility, not whether they actually use the facility themselves. For example, mothers may put soiled diapers or feces from small potties into a latrine.</p> |

Variables for Disaggregation

The indicators related to sanitation facilities can be disaggregated by service level – no services, limited services, basic services and safely managed services. The monitoring of access “for all”, as well as the aspect of affordability, require disaggregation of data to capture potential inequalities across socioeconomic strata, including within households and geographical locations. In certain regions, it may be useful to include an indicator on time spent collecting water, to further analyse the state of “basic” services. It is also important to monitor access beyond the household, in institutional settings such as schools, health-care facilities and the workplace.

Other potential data variables to explore for analysis include:

- Regional differences
- Socio-economic variations
- informal urban settlements
- locally important marginalized groups

By disaggregating the data spatially and by different socioeconomic strata, it is possible to identify which parts of the population are being left behind.

References and links to reports/tools

Billig, P., Bendahmane, D. & Swindale, A. (1999). Water and Sanitation Indicators Measurement Guide. Food and Nutrition Technical Assistance Project, Academy for Educational Development.

UN Water (2017). Integrated Monitoring Guide for Sustainable Development Goal 6 on Water and Sanitation – Targets and global indicators.

UN Water (2016). How to use the Integrated Monitoring Guide for SDG 6. Available from https://www.pseau.org/outils/ouvrages/un_water_how_to_use_the_integrated_monitoring_guide_for_sdg6_2016.pdf.

World Health Organization (2006). Core questions on drinking-water and sanitation for household surveys. Available from http://www.who.int/water_sanitation_health/monitoring/oms_brochure_core_questionsfinal24608.pdf.

World Health Organization and the United Nations Children's Fund (2017). Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG baselines. Available from <http://www.who.int/mediacentre/news/releases/2017/launch-version-report-jmp-water-sanitation-hygiene.pdf>.



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Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 18: Percentage of food insecure households based on the Food Insecurity Experience Scale (FIES)

MUFPP framework of actions' category: Social and economic equity

The indicators measures severity of food insecurity experience based on the Food Insecurity Experience Scale (FIES). This is an indicator of food access, not diet quality.

Overview table

| MUFPP Work stream | Social and economic equity |
|--|--|
| MUFPP action | Use cash and food transfers, and other forms of social protection systems to provide vulnerable populations with access to healthy food . This is as a means of increasing the level of food security for specific vulnerable groups. |
| What the indicator measures | Severity of food insecurity experience based on the Food Insecurity Experience Scale (FIES). This is an indicator of food access, not diet quality. |
| Which variables need to be measured / what data are needed | The data are collected using the FIES Survey module, composed of 8 yes/no questions asked to an adult respondent. The choice of additional variables to collect in the survey will depend on the objective of the survey, but should include at a minimum basic demographic information. |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Percentage people or households experiencing moderate or severe food insecurity. |
| Unit(s) of Analysis (i.e people under 5 years old, etc.) | Households or individuals |
| Possible sources of information of such data | The FIES survey module can be included in many types of surveys, such as health and nutrition surveys and household income and expenditure surveys. |
| Possible methods/tools for data-collection | The FIES survey module (individual or household version) |
| Expertise required | Survey methodology and statistical analysis |
| Resources required/ estimated costs | Human and financial resources to include an 8-item survey module in a population survey, collect data in the field and conduct data analysis. |

| | |
|--------------------------------|---|
| Specific observations | <p>The FIES data has been collected by FAO in over 145 countries since 2014 in the Gallup World Poll. The global data reveal that the FIES results show significant and high correlations in the expected direction with most accepted indicators of development, including child mortality, stunting, poverty measures and the Gini index.</p> <p>The FIES can be used to estimate the prevalence of moderate or severe food insecurity at the municipal level when the FIES survey module is included in a survey that is representative of the municipal population. It depends on the sample design.</p> |
| Examples of application | <p>National survey data in Brazil in 2004, based on the Brazilian Food Insecurity Scale (a predecessor of the FIES), found significant differences in household food insecurity levels among the five geographical regions of the country¹. Evidence of these stark regional inequalities convinced the Brazilian government to direct resources and public policies toward the more vulnerable regions. Many other examples can be found in Lesson 5 of the FAO e-learning course: SDG Indicator 2.1.2 – Using the Food Insecurity Experience Scale. Available at: http://www.fao.org/elearning/#/elc/en/course/SDG212.</p> |

Rationale/evidence

Access to enough nutritionally adequate food was declared a basic human right at the World Food Summit in Rome in 1996.

The United Nations Food and Agriculture Organization (FAO) has undertaken a project called Voices of the Hungry (VoH) to develop and support a survey-based experiential measure of access to food, called the Food Insecurity Experience Scale (FIES). It is an experience-based metric of severity of food insecurity that relies on people's direct responses to a series of questions regarding their access to adequate food.

A growing number of national governments are adopting the FIES. Its ease of application makes it accessible to people at many levels and from diverse fields, although data analysis requires a solid statistical background. Local governments, non-governmental organisations and advocacy groups can also appropriate this relatively simple instrument to monitor food insecurity locally or regionally, engaging diverse stakeholders in the process, and building bridges between people of different backgrounds. This may in fact be where their greatest potential lies to effect change and contribute to guaranteeing the human right to adequate food.

Glossary/concepts/definitions used

Food Security is said to exist when all people, at all times, have physical, social and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

Preparations

Producing this indicator requires data collection in the field from a representative sample of the population. This implies preparation of the survey questionnaire (print or CAPI), a sampling framework, training of enumerators to collect the data, data collection and analysis.

¹ Brasil/IBGE (2006). Pesquisa Nacional por Amostra de Domicílios-2004, Suplemento de Segurança Alimentar; Rio de Janeiro. Available from http://biblioteca.ibge.gov.br/visualizacao/monografias/GEBIS%20-%20RJ/segalimentar/suguranca_alimentar2004.pdf.

Sampling

The sample design must guarantee representativeness of the sub-populations of interest (e.g. those that are vulnerable to food insecurity, or specific geographic areas of the city).

Data Collection and Analysis

Data collection: 8 question survey module with dichotomous (yes/no) responses

Data analysis: Thresholds can be set on the raw score to classify the food security severity status of respondents, but Rasch analyses and probabilistic assignment are recommended (as described in the e-learning course cited below).

For detailed guides for applying the FIES survey module and analysing the data, see:

the FAO e-learning course: SDG Indicator 2.1.2 – Using the Food Insecurity Experience Scale (FIES).

Available at: <http://www.fao.org/elearning/#/elc/en/course/SDG212>.

Additional important resources can be found at the Voices of the Hungry webpage at: <http://www.fao.org/in-action/voices-of-the-hungry/en/#.WoxNck2ovcs>. See in particular “Using the FIES”: <http://www.fao.org/in-action/voices-of-the-hungry/using-fies/en/>, where translations of the FIES survey module can be found in 170 languages).

The Food Insecurity Experience Scale: Measuring food insecurity through people’s experiences. Available at <http://www.fao.org/3/a-i7835e.pdf>.

The FIES Survey Module

The FIES-SM questions refer to the experiences of the individual respondent or of the respondent’s household as a whole. The questions focus on self-reported food-related behaviours and experiences associated with increasing difficulties in accessing food due to resource constraints.

During the last 12 months, was there a time when, because of lack of money or other resources:

1. You were worried you would not have enough food to eat?
2. You were unable to eat healthy and nutritious food?
3. You ate only a few kinds of foods?
4. You had to skip a meal?
5. You ate less than you thought you should?
6. Your household ran out of food?
7. You were hungry but did not eat?
8. You went without eating for a whole day?

The set of eight questions compose a scale that covers a range of severity of food insecurity:



No single tool can account for the many dimensions of food and nutrition security. The FIES complements the existing set of food and nutrition security indicators. Used in combination with other measures, the FIES has the potential to contribute to a more comprehensive understanding of the causes and consequences of food insecurity and to inform more effective policies and interventions. Because the FIES is easy for professionals and institutions from any sector to use, its inclusion in diverse

types of surveys can help strengthen links between different sectorial perspectives, for example, between agriculture, social protection, health and nutrition.

Results from surveys that include the FIES can also be used to inform decisions regarding priorities for targeting programmes and resources. While it is not appropriate to use the FIES to identify individual beneficiaries for programmes, the information provided by population surveys that include the FIES can serve to identify vulnerable sub-populations or geographic areas that are more affected by food insecurity².

References and links to reports/tools

Ballard, T.J., Kepple, A.W. & Cafiero, C. 2013. The food insecurity experience scale: development of a global standard for monitoring hunger worldwide. Technical Paper. Rome, FAO. Available from <http://www.fao.org/economic/ess/ess-fs/voices/en/>.

Cafiero, C., Viviani, S., & Nord, M. (2018). Food security measurement in a global context: The food insecurity experience scale. *Measurement*, 116, 146-152.

FAO (2016). Methods for estimating comparable prevalence rates of food insecurity experienced by adults throughout the world. Rome, FAO. Available at: <http://www.fao.org/3/a-i4830e.pdf>

FAO (2017). The Food Insecurity Experience Scale: Measuring food insecurity through people's experiences. Available from <http://www.fao.org/3/a-i7835e.pdf>.

FAO (2018) FAO e-learning course: SDG Indicator 2.1.2 – Using the Food Insecurity Experience Scale (FIES). Available at: <http://www.fao.org/elearning/#/elc/en/course/SDG212>

Voices of the Hungry webpage: <http://www.fao.org/in-action/voices-of-the-hungry/en/#.WoxNck2ovcs>

² FAO (2017). The Food Insecurity Experience Scale. Available from <http://www.fao.org/in-action/voices-of-the-hungry/fies/en/>.



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Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 19: Percentage of people supported by food and/or social assistance programmes

MUFPP framework of actions' category: Social and economic equity

The indicator measures the take-up (or usage) of food and/or social assistance support through programmes that target vulnerable groups that are struggling to feed themselves. Over time, this indicator should show how take-up is increasing or decreasing, or speeding up/slowing down.

Overview table

| MUFPP Work stream | Social and economic equity |
|--|---|
| MUFPP action | Use cash and food transfers, and other forms of social protection systems to provide vulnerable populations with access to healthy food. This is as a means of increasing the level of food security for specific vulnerable groups. |
| What the indicator measures | The indicator measures the take-up (or usage) of food and/or social assistance support through programmes that target vulnerable groups that are struggling to feed themselves. Over time, this indicator should show how take-up is increasing or decreasing, or speeding up/slowing down. |
| Which variables need to be measured / what data are needed | Total city population; figures for different 'vulnerable' groups; audit/numbers of food assistance programmes; types and numbers of social assistance programmes that relate to food security; numbers of people using the assistance programmes (or registered to use them); data in relation to a timeframe - specific length of time that users are encouraged to participate or eligible for assistance (e.g. number of weeks or months). |
| Unit of measurement (i.e. Percentages, averages, number, etc.) | Percentage of the total city population in receipt of food or social assistance support because they are struggling to feed themselves. |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Data can be disaggregated by category of vulnerable groups e.g. children, families, young people, indigenous, elderly, disabled, unemployed, etc. Data could also be disaggregated by type of food or social assistance programme and by numbers of people benefiting from the different types. For example, it may be very helpful to have clear and separate data for school feeding programmes |

| | |
|---|---|
| | in order to support specific actions and monitoring ¹ . Social assistance programmes could also include unconditional cash-transfers or cash-transfers conditional to food acquisition/production. |
| Possible sources of information of such data | <ul style="list-style-type: none"> -National and local government statistics departments and social assistance/benefits departments -Food Security and Public Health Agencies or departments -NGO's and community sector organisations -City partnerships addressing food insecurity/poverty; -Family and Children centres; -Homeless centres; Rough sleeper initiatives -Doctor surgeries and clinics. |
| Possible methods/tools for data-collection | Use national food insecurity data to estimate city level data if none exists. Audit of all food/social assistance programmes. Existing report and data analysis from above sources. Interviews with key stakeholders to identify existing data or sources of data. Surveys with the above types of organisations to collect data on number of users if no overview of food and social assistance programmes exist or if there are significant gaps. |
| Expertise required | Data analysis and statistical expertise; interview and survey research design and analysis |
| Resources required/ estimated costs | |
| Specific observations | This indicator could become less useful if for example national or local budget cuts reduce government services and thus reduce assistance programmes and services. This could result in lower indicator figures and an incorrect assumption that this means food insecurity is reduced. In an alternative scenario, the indicator could also become less useful if for example high cost of living forces low income families and vulnerable individuals out of the city and thus reduces the demands on food or social assistance programmes. |
| Examples of application | Many cities collect data in relation to food insecurity: New York City, US; Brighton and Hove, UK; see notes below under References. |

Rationale/evidence

Scope: While this indicator is limited in scope both in relation to the complex causes of food insecurity, and in relation to quantifying the degree to which food insecurity is prevalent within a city, it quantifies the uptake of food and or social assistance programmes which are provided to support vulnerable groups, which is probably one of the easiest indicators to measure. The resulting figure should be seen in the context of total population as well as figures for vulnerable groups. The focus should be on assistance programmes that target those most in need of help (i.e. emergency food provision), even though most likely this will represent only the people who are using it as a last resort (rather than the many more living with long-term food insecurity and missed meals).

Sustainable Development Goals (SDG's): The SDG's focus on ending poverty, fighting inequality and tackling climate change. This indicator relates to SDG goals 1 and 2, and specifically to target 1.3. Goal 1 is to 'End poverty in all its forms everywhere'. Goal 2 is to 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture'. Why does this matter? 'Extreme hunger and malnutrition remains a barrier to sustainable development and creates a trap from which people cannot easily escape. Hunger and malnutrition mean less productive individuals, who are more prone to disease and thus often unable to earn more and improve their livelihoods.'² SDG Target 1.3 is to 'Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable'. The SGD indicator for this target is 1.3.1: 'Proportion of population covered by social protection floors/systems, by sex, distinguishing

¹ Note that a separate indicator 20 on school feeding programmes is also proposed.

² UN Sustainable Development Goals <http://www.un.org/sustainabledevelopment/>

children, unemployed persons, older persons, persons with disabilities, pregnant women, new-borns, work-injury victims and the poor and the vulnerable’.

Food and cities: In the case of food, the critical challenge is to increase the level of food security for specific vulnerable groups within local communities through the provision of food assistance programmes or social assistance programmes, thus ensuring that the most vulnerable groups always have access to food. Cities need to understand the extent of food insecurity within their populations and to have appropriate assistance systems in place. They also need to know the number of people in receipt of such assistance, ideally at any given time. This may be easier to do for nationally administered cash transfers (which are more likely to have built in monitoring systems) than for other food assistance programmes.

Glossary/concepts/definitions used

Definition of ‘vulnerable populations’: In general, ‘vulnerability’ is accepted to mean susceptibility to harm or suffering. ‘Vulnerability’ is a regularly used word that means different things in different contexts.

In the context of public health, the World Health Organisation (WHO) states: ‘Vulnerability is the degree to which a population, individual or organization is unable to anticipate, cope with, resist and recover from the impacts of disasters. Children, pregnant women, elderly people, malnourished people, and people who are ill or immune-compromised, are particularly vulnerable when a disaster strikes, and take a relatively high share of the disease burden associated with emergencies. Poverty – and its common consequences such as malnutrition, homelessness, poor housing and destitution – is a major contributor to vulnerability.’³

Each nation (or city) will have its own criteria to define vulnerability and identify specific vulnerable groups of people; e.g. income, educational opportunities, health status, etc. People are by definition vulnerable if they depend on food programs or social assistance or both for their wellbeing or even their survival.

Brazil, for example, defines ‘*vulnerability*’ as follows: ‘to be susceptible, to be propitious to a particular problem, due to individual, social and institutional conditions, which may or may not lead to a situation of risk, but not necessarily one is the consequence of the other. As a result of poverty, deprivation (lack of income, precarious or nil access to public services, among others) and, or, weakening of affective relationships - relational and social belonging (age, ethnic, gender or disability discrimination, among others)’. There is also a definition of ‘*risk*’: individuals and families in situations of personal or social risk and violation of rights (victims of physical, psychic and sexual violence, neglect, abandonment, threats, abuse, use of psychoactive substances, compliance with socio-educational measures, street situation, situation child labour, among others).

Clarity about types of assistance: It may be important to separate out ‘food assistance programmes’ and ‘social assistance programmes’, depending on the type of programmes available. Some cities will have clear food assistance programmes. Others will have social assistance programmes that amongst other issues also assist, directly or indirectly, with poverty and food insecurity. However it may be the case that the working or non-working poor who are eligible for some additional income through social assistance still depend on other food programs because social assistance rates are too low to support dietary diversity given the high costs of fixed expenses like rent.

The municipality of Quito, Ecuador, for example does not have a specific program of food assistance (e.g. soup kitchens or specific points of provision of food for those who receive a bonus). They only have their urban agriculture and bio-fairs programmes (distribution of surplus organic produce), and support through childcare centres for young children of 3 years, where a balanced and nutritious diet is guaranteed.

Definition of ‘food assistance programmes’: Not surprisingly definitions are complex. Over the last two decades, terms that relate to the emergency provision of food in humanitarian crisis situations at a global level have evolved. Whereas the term ‘food aid’ was commonly used (giving food directly to the hungry), there has been a shift to ‘food assistance’ in order to include cash, value vouchers or electronic funds to buy nutritious ingredients as well as direct in-kind food distribution. The World Food Programme defines food assistance as involving ‘a more complex understanding of people’s long-term nutritional needs and of the diverse approaches required to meet them [...] recognising that hunger does not occur in a vacuum. It means we must concentrate time, resources and efforts on the most vulnerable in society. It implies not just emergency interventions, but tailored, multi-year support programmes designed to lift a whole nation’s nutritional indicators.’

³ Environmental health in emergencies and disasters: a practical guide,’ WHO, 2002

However, at a global level the definitions remain unclear; for example some food assistance programmes only focus on direct food aid and cash payments while others include wider food system interventions like production or market support. 'Food assistance instruments might include direct food-based transfers (such as general rations, food-for-work, supplementary feeding or vulnerable group feeding and school feeding), food subsidies, cash transfers and vouchers (including school or user fee waivers) and agricultural and livestock support.'⁴

This is useful context for defining 'food assistance' at a city level. A city may define its food assistance programmes as purely emergency food provision for people in crisis (e.g. food banks, soup kitchens, child feeding centres, supplementary feeding programmes for mothers and babies) over a specific length of time (e.g. up to 12 months) or it could include other wider intervention programmes that aim to move people away from food insecurity in the longer term.

The Community Food Centres network in Canada provides an example of wider intervention programmes based in local communities. From the simple beginnings of one food bank in Toronto set up over 30 years ago during the recession, a national network of community food centres now exists. In addition to emergency food provision, the centres offer community kitchens and gardens, healthy drop-in meals, peri-natal support, outdoor bake ovens, affordable food markets, and community action and civic engagement programmes.⁵

In the US, the Department of Agriculture (USDA) Food and Nutrition Service's 'Supplemental Nutrition Assistance Program' (SNAP) offers nutrition assistance to millions of eligible, low-income individuals and families and provides economic benefits to communities. SNAP is the largest programme in the domestic hunger safety net. The Food and Nutrition Service works with State agencies, nutrition educators, and neighbourhood and faith-based organisations to ensure that those eligible for nutrition assistance can make informed decisions about applying for the programme and can access benefits. FNS also works with State partners and the retail community to improve programme administration and ensure program integrity.⁶

Definition of 'social assistance programmes': Social assistance programmes, usually means tested, may not specifically focus on food provision, but may indirectly contribute. The World Bank defines social assistance as follows: 'Social assistance programs are non-contributory transfers in cash or in-kind and are usually targeted at the poor and vulnerable. Some programs are focused on improving chronic poverty or providing equality of opportunity; others more on protecting families from shocks and longstanding losses they can inflict for the unprotected poor. These programmes also known as social safety net programs or social welfare, include cash transfers (conditional and unconditional), in-kind transfers, such as school feeding and targeted food assistance, and near cash benefits such as fee waivers and food vouchers.'⁷

⁴ 'Food aid and food assistance in emergency and transitional contexts: a review of current thinking'; Paul Harvey, Karen Proudlock, Edward Clay, Barry Riley and Susanne Jaspars; June 2010; Humanitarian Policy Group Overseas Development Institute, UK <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/6038.pdf>

⁵ Community Food Centres, Canada https://cfccanada.ca/mission_vision

⁶ USDA's SNAP programme <https://www.fns.usda.gov/snap/supplemental-nutrition-assistance-program-snap>

⁷ ASPIRE: The Atlas of Social Protection - Indicators of Resilience and Equity | Social Assistance | The World Bank <http://datatopics.worldbank.org/aspire/indicator/social-assistance>

Other examples of social assistance programmes include cash for work, cash for education, unconditional social pension, fee waiver for school fees, etc. For reference, see the Social Assistance in Developing Countries database.⁸

Many countries have nationally designed and administered social assistance programmes. Each city will have an understanding of its own relevant social assistance programmes, whether local or national. For example, the SUAS system is a public system that organises Social Assistance services in Brazil in a decentralized way. Established to guarantee protection to the family, maternity, childhood, adolescence and old age, in order to reduce damage and prevent vulnerability and social risk, it organises its actions through 'Basic Social Protection' and 'Special Social Protection'.⁹

Preparations

The team responsible for monitoring this indicator should agree on:

1. Type of data disaggregation and categories that will be used (see further notes below).
2. Data collection method (analysis and projection of existing data or further gathering of new data from stakeholder organisations).
3. If interviews or surveys with stakeholder organisations are to be used to help identify other sources of data, the right questions to ask have to be clarified. Training/briefing of interviewers may be needed.
4. If there are significant data gaps, then further research and investment may be required to help the organisers of community based food and/or social assistance programmes to gather and present appropriate data.

Sampling

In the case that new primary data has to be collected by means of survey of food and/or social assistance programmes, a 25% sample of programmes is minimally needed to be able to present useful figures and extrapolation estimates. In this case, the programmes surveyed could be sampled according to category of vulnerability or geographic area - in relation to clearly defined groups of users and/or in neighbourhoods where food assistance is critical.

Data collection and data disaggregation

An initial audit of existing food assistance and relevant social assistance programmes will be needed from the outset in order to set the context for any further work. The resulting list could also be turned into a directory and used for future monitoring purposes.

If basic programme information is not available, then this should be the starting point. An audit survey with food and relevant social assistance programmes could include questions on types of programme assistance; categories of beneficiaries; length of time during which beneficiaries receive supported; regularity of support provided.

The second step will be to identify all possible existing and relevant data sets that either are part of setting the context or direct numbers of programme users. National data on food insecurity may be available.

⁸ Social Assistance in Developing Countries Database; March 2006; Armando Barrientos and Rebecca Holmes IDS, University of Sussex for the UK Department for International Development (DFID) http://www.chronicpoverty.org/uploads/publication_files/Social_Assistance_Database_Version2_March_2006.pdf

⁹ Brazilian Social Assistance Policy (SUAS) http://www.ipc-undp.org/doc_africa_brazil/5.SNAS.pdf

Data could be disaggregated by category of vulnerable groups, according to the city's own definitions; for example, children, families, young people, elderly, disabled, unemployed, etc. Data could also be disaggregated by type of food or social assistance programme and by numbers of people benefiting from the different types; for example food banks, soup kitchens, community feeding centres, food vouchers, etc.

Data analysis/calculation of the indicator

The indicator is computed by calculating the total number of people receiving food and/or relevant social assistance as a percentage of the total city population. Further useful figures could include more detailed breakdown by neighbourhood to show more nuanced patterns for the city. Similarly there could be more detailed breakdown figures relating to different types of programmes or different categories of vulnerable groups. If possible such data should be made available too as a set of additional indicators.

References and links to reports/tools

Overview report on approaches to the design of emergency food assistance programmes in urban and peri-urban settings

Emergencies in urban settings: a technical review of food-based program options, USDA, August 2008, http://pdf.usaid.gov/pdf_docs/Pnadm940.pdf

Brighton and Hove Food Partnership, UK

The Brighton and Hove Food Poverty Action Plan 2015-18 is a coordinated approach of a city in the South of England to address food insecurity. Food poverty is categorized in two ways: i) crisis level and ii) ongoing food poverty. The overall outcome they want to see in relation to 'crisis level' is a reduction (or slower growth) in the number of people experiencing hunger or seeking emergency assistance.

Their chosen indicators for food poverty at crisis level are:

- Number of food banks in the city; weekly food parcel distribution; yearly change in demand
- Annual number of Local Discretionary Social Fund (LDSF) payments for food and cooking equipment.

For more information see pages 4 & 6

http://bhfood.org.uk/wpcontent/uploads/2017/09/FINAL_Food_Poverty_Action_Plan_2015.pdf

New York City and work on addressing food insecurity

New York City defines food insecurity as 'the lack of access, at times, to enough nutritionally adequate food for an active, healthy life for all members of a household. Food insecure families may worry that food will run out before they have enough money to buy more, eat less than they should, or be unable to afford to eat balanced meals.' Work to address food insecurity in New York is focused around reducing the 'Meal Gap' alongside the food insecurity rate in all boroughs, in addition to prioritizing funding for emergency food that is made available to those who may need it.

The metrics used for this work include: Food insecurity rates for different areas of the city; the 'meal gap' – missing meals per person by neighbourhood; Emergency Food Assistance Program investment; Numbers of supplemental Nutrition Assistance Program (SNAP) program recipients i) by neighbourhood and ii) by specific vulnerable groups; and neighbourhood based practical food distribution achievements.

The Meal Gap, New York City's official measure of food insecurity, represents the meals missing from the homes of families and individuals struggling with (longer-term) food insecurity - that is, when household food budgets fall too short to secure adequate, nutritious food year-round.

For NYC food metrics reports 2012-2017, see <http://www1.nyc.gov/site/foodpolicy/about/food-metrics-report.page>

A new tool to measure food insecurity: The Food Insecurity Experience Scale (FIES) is a new and innovative approach to measuring the prevalence of food insecurity. It is based on direct responses of individuals about their access to food. This promising new tool permits a more disaggregated analysis of food insecurity by place of residence, gender and other factors.¹⁰ (See separate Indicator 18 for how to use FIES.)

¹⁰ Asia and the Pacific: Regional overview of food insecurity, FAO, 2016 <http://www.fao.org/3/a-i6481e.pdf>



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Milan Urban Food Policy Pact Monitoring Framework

March 2021 version

Indicator 20: Percentage of children and youth (under 18 years) benefitting from school feeding programmes

MUFPP framework of actions' category: Social and economic equity

This indicator measures the proportion of children and youth (everyone under 18 years old) attending school who benefit from a school feeding programme.

Overview table

| MUFPP Work stream | Social and economic equity |
|---|---|
| MUFPP action | Reorient school feeding programmes and other institutional food service to provide food that is healthy, local and regionally sourced, seasonal and sustainably produced. |
| What the indicator measures | The proportion of children and youth (everyone under 18 years old) attending school who benefit from a school feeding programme. |
| Unit of measurement (i.e. Percentages, averages, number, etc.) | Percentage; in relation to the total number of children and young people (everyone under 18 years old) attending school in the city |
| Which variables need to be measured / what data are needed | <ul style="list-style-type: none"> -Numbers and percentages of total population under 18 years old attending school and benefiting from a school feeding programme -Number and type of school feeding programmes -Categories of beneficiaries by age, sex or by type of feeding programme or by geographical area (e.g. neighbourhood). Further detail may be needed where within one school some parents pay for school food and others do not. |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | School children. Data can be disaggregated by category of 'school': pre-school/kindergarten; primary school; secondary & high school; other type of school. Data can also be disaggregated by sex and by school age categories (defined as appropriate for each city for children under the age of 18 years). Data can be disaggregated by type of school feeding programme, or by geographical area of the city. |
| Possible sources of information of such data | <ul style="list-style-type: none"> -National and local population statistics -Organisations and institutions that work with children -School feeding programme providers -Schools and education authorities |

| | |
|---|---|
| | -Children's residential centres; Street children centres; Community-run schools; Free school meal statistics |
| Possible methods/tools for data-collection | Analysis of city population statistics; audit of number and type of school feeding programmes; analysis of school feeding programme statistics and monitoring; surveys if there is insufficient data |
| Expertise required | Data and statistical analysis; research, surveying and data collection |
| Resources required/estimated costs | |
| Specific observations | There are different aims for school feeding, depending on the country. Countries in the global south (lower income) will typically focus on addressing poverty and malnutrition as well as encouraging school attendance, while countries in the global north (higher income) tend to focus more on addressing obesity and healthy eating (also this is an increasing problem in other regions, like Latin America, as well). Nutrition will be a shared objective, though approaches and standards will vary. However it is important to note that there are increasing food poverty/food insecurity initiatives in the global north that operate within the school context, and in addition to school lunches (e.g. breakfast clubs, after school food, holiday hunger or emergency food programmes in schools). Some cities/countries in both the global north and south do not have school feeding programmes nor provide any kind of school meals. It will be important to note where there is an absence of school feeding programmes, and the reasons for that in context notes. |
| Examples of application | Community-based school feeding programme and an urban intervention in Lusaka province, Zambia, with a focus on street children. (See more information in References section below.) |

Rationale/evidence

Scope: This indicator differs from the previous indicator (Percentage of people supported by food and/or social assistance programmes) in that is specific to children and to all types of school feeding programmes. However there could easily be overlaps with both indicators and it will be important for each city to find ways to clearly distinguish one indicator from the other. For example this indicator could be seen as a sub-indicator to the other.

World Food Programme (WFP) rationale: The WFP says that almost every country in the world for which they have information seeks to feed its school children. In 2013, based on a sample of 169 countries, the WFP estimated that at least 368 million children are fed daily when they are at school.¹ The WFP and partners have invested significantly in school feeding programmes. WFP highlights the crucial role that school feeding programmes play. 'Every day, countless children across the globe turn up for school on an empty stomach, which makes it hard to focus on lessons. Many simply do not go, as their families need them to help in the fields or around the house. For all of them, a daily school meal can mean not only better nutrition and health, but also increased access to and achievement in education. It is also a strong incentive to consistently send children to school.'²

Glossary/concepts/definitions used

Definition of 'child': The United Nations Convention on the Rights of a Child (UNCRC) defines children as 'everyone under 18 years old'.³

Definition of 'school feeding' programme: The World Food Programme defines 'School Feeding' as

¹ The state of school feeding worldwide, 2013, The World Food Programme (see reference section below)

² The World Food Programme; school meals <http://www1.wfp.org/school-meals>

³ UNICEF Summary of the UN Convention on the Rights of the Child <https://www.unicef.org.uk/what-we-do/un-convention-child-rights/>

the provision of food to schoolchildren. This is most commonly done by provision of in-school meals - breakfast, lunch or both; and/or fortified, high-energy biscuits or nutritious snacks. Alternatively, and to enhance school attendance, some programmes provide take home rations (transfer of food resources or cash to entire families conditional upon school enrolment and regular attendance of children). The WFP also encourages a local procurement connection with local farmers and growers, thus combining nutritional and educational benefits with a positive impact on local economies.

Typical types of school feeding programmes in cities: There are many different types of school feeding programmes, some run by government institutions and others run by the private sector or NGO's; some centralised, some decentralised and some specific to localities. There are also many different objectives e.g. education, health and nutrition, agriculture and community development. Some school feeding programmes are explicitly a form of social protection system that provides vulnerable populations (i.e. children) with access to healthy food and others are not. For example, Brazil's school feeding programme was established in 1954 initially as a national strategy to address under-nutrition and low levels of education. It has evolved over the years to the current focus of 'meeting nutritional needs while in the classroom, and by supporting the formation of healthy habits through food and nutrition education [... and] also promotes local family farming.'⁴

School lunches: In some countries, school lunches are provided. Lunches may be paid for by parents; free to low-income families; or free to all, depending on the country or the local education authority policy or the individual school. Government schools may have different arrangements to non-government run schools. It will be important to clarify the particular context of the city and its schools.

School breakfasts and after school meals: In some countries breakfast before school starts, or food after school closes is provided. This may be because families can't afford to feed their children or it could be because parents have to drop children at school very early and it is easier for the child to eat breakfast once they are in school. After school meals could be provided along with other play activities because parents cannot collect their children earlier, or because the children are part of an activity club after school hours. Some families may depend on the school for feeding their children due to low income and others due to demands on the parents' time. It will be important to clarify the particular context of the school and its non-lunch food provision.

Snacks, milk, fresh fruit and vegetables: Many schools around the world provide milk or healthy snacks, even if they do not provide lunches. These may be paid for or free, compulsory or voluntary. These schemes may be independent of school meal provision, and administered by different agencies or organisations. Again the context of this is important to note.

Children's centres (under the age of 5): Data from children centres could be included if this is an important aspect for the city. For example, in Ecuador addressing chronic child nutrition through child centres is a key priority. However this data may already have been used for the indicator 'Percentage of people supported by food and/or social assistance programmes'. Technically this indicator is focussed on school age children, but 'school age' will need to be defined.

Age and school attendance: There may be more complications if school attendees fall outside the definition of 'children' and are over 18 yrs. of age. As noted above, there may also be children under the typical school age that should be counted. The city of Curitiba in Brazil for example has information regarding the national school feeding program (PNAE). All students and children enrolled in the

⁴ The Brazilian school feeding programme: an example of an integrated programme in support of food and nutrition security, 2012; Sidaner, Balaban and Burlandy; NS Public Health Nutrition Journal; http://hgsf-global.org/en/bank/downloads/doc_details/294-the-brazilian-school-feeding-programme-an-example-of-an-integrated-programme-in-support-of-food-and

Municipal Education Network benefit from the program (a total of 132,145 children and students from 3 months to young and old).

See the reports below in 'References' for further information on types, case studies and evidence of impact.

Preparations

The team responsible for monitoring this indicator should agree on:

1. The context: is vulnerability an important aspect and therefore needs more specific data (e.g. focus on types of school feeding programmes that are targeted at vulnerable groups)? Or is the focus on school feeding programmes in general and therefore on all children benefitting in any way – all school children themselves being a 'vulnerable' group?
2. Which types of school feeding programmes should be included?
3. Should children's centre data be included or not, if the focus is on school age children?
4. Type of data disaggregation and categories that will be used (see further below)
5. Data collection method (analysis of existing data or new surveys)
6. If surveys are to be used, survey questions and instrument have to be designed. Training of survey enumerators may be needed.

Sampling

In case new data are collected by means of a school feeding programme survey, a 10% sample (ideally 10% of each different type of school feeding programmes) is minimally needed. Alternatively, the sampling could be done by geographic area of the city (10% of all the programmes in each agreed specific area of the city).

Data collection and data disaggregation

Data can be disaggregated by school stage-related age categories (defined as appropriate for each city for children under the age of 18 years). For example, pre-primary, primary and secondary-school age children. Data can also be disaggregated by type of school: e.g. pre-school/kindergarten; primary school; secondary & high school; other type of school; or by government/non-government school. Data can be disaggregated by type of school feeding programme: e.g. school lunches only; breakfast, lunch and after school meals; snacks only; no feeding programme, etc.

Data can be collected from existing records and registers held centrally (national or local government or independent school feeding programme organisers). If no such records exist, then data should be collected by surveys with schools or school feeding programme organisers. In this case sampling will very likely be needed (as above).

Data analysis/calculation of the indicator

In order to calculate the proportion of school-attending children who are beneficiaries of the national school feeding programme, two figures are needed:

- The total number of school-attending children (under the age of 18) in the city
- The total number of pre-primary-, primary- and secondary-school children who receive some form of school feeding (e.g. a hot meal, biscuit or snack or take-home ration) from the national school feeding programme.

References and links to reports/tools

The state of school feeding worldwide, 2013, World Food Programme: 'An attempt to share and learn what works best in school feeding programmes around the world so that governments may

explore their life-changing potential to nourish young bodies and minds in classrooms everywhere, particularly in the world's poorest and most challenged communities'.

<http://documents.wfp.org/stellent/groups/public/documents/communications/wfp257481.pdf>

Global School Feeding Sourcebook: Lessons from 14 Countries, 2016; Lesley Drake et al.

Case studies from around the world that look at different models and their impacts

<http://hdl.handle.net/10986/24418>

Zambia's Community-based school feeding programme

An urban intervention in Lusaka province, Zambia, with a focus on street children.

(School Feeding programme in Zambia; Kate Vorley, Project Concern International and Mary Corbett, ENN, 2016 <http://www.ennonline.net/fex/25/school>)

School meals in Europe

A report by the Polish Eurydice Unit: Foundation for the Development of the Education System Warsaw 2016. This report provides an overview of contrasting approaches to meal provision and financing in different European countries (provision for children from low income families, p8; milk, fruit and vegetables, p16)

(http://eurydice.org.pl/wp-content/uploads/2016/05/meals_raport_ENG.pdf)



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Milan Urban Food Policy Pact Monitoring Framework

March 2021 version

Indicator 21: Number of formal jobs related to urban food system that pay at least the national minimum or living wage

MUFPP framework of actions' category: Social and economic equity

The indicator measures the total number of formal paid jobs that the urban food system provides at or above the nationally accepted minimum or liveable wage. Note: If it is NOT possible to quantify jobs paid at least at the national minimum or living wage, the focus should be to quantify the total number of formal paid jobs in the food system.

Overview table

| MUFPP Work stream | Social and economic equity |
|--|--|
| MUFPP action | <ul style="list-style-type: none"> - Promote decent employment for all, including fair economic relations, fair ... - Encourage and support social and solidarity economy activities, paying special ... |
| What the indicator measures | The indicator measures the total number of formal paid jobs that the food sector provides at or above the nationally accepted minimum or liveable wage. NB if it is NOT possible to quantify jobs paid at least the national minimum or living wage, the focus should be to quantify the total number of formal paid jobs in the food and drink sector. |
| Which variables need to be measured / what data are needed | <ul style="list-style-type: none"> -Total number of jobs related to the urban food system -Total number of jobs that are paid the minimum/living wage or above. The number of jobs in the food system will need to be compared with other figures, e.g. total number of jobs in the city; or with other employment sectors. There may be seasonal variations in numbers of jobs in the food system so this information could be important to note. Localized typology of the six main business categories will need to be identified prior to data collection or analysis (see notes below). |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Number of formal jobs paid at least the nationally set minimum or living/liveable wage. This figure could be compared to total job numbers within the city and will be a useful benchmark to help measure change over time. It could also be compared to the total number of jobs provided by the urban food system, including those below the minimum/liveable wage and who are partially employed. |
| Unit(s) of Analysis | The numbers of jobs will need to be disaggregated by sector within the food system (see definitions below). |

| | |
|---|---|
| <i>(i.e people under 5 years old, etc.)</i> | |
| Possible sources of information of such data | <ul style="list-style-type: none"> -National or local government employment registers and statistics or census data -Ministry/Department of Labour or Employment or Economic Development -Local Chamber of Commerce -Trade Unions representing food sector workers -Manufacturing Associations -Business or enterprise development agencies -Food sector support agencies |
| Possible methods/tools for data-collection | <ul style="list-style-type: none"> -Review of existing data -Interviews with holders of key data (most likely by representative bodies within the food system or by any other institution or organisation working with the food system) |
| Expertise required | Data analysis; research and interviews |
| Resources required/estimated costs | |
| Specific observations | If there is no way to get specific figures for this indicator, it would still be worth knowing the total number of jobs in the urban food system, regardless of wage rates. If finding figures for the whole food system is too difficult, part of the food system could be considered (e.g. specific food business categories). This indicator doesn't include the informal food sector, but a similar process could be followed to develop a specific informal food sector indicator. |
| Examples of application | Vancouver in Canada has looked specifically at the growth of the local food sector. http://www.vancouvereconomic.com/vecs-focus-areas/local-food/ . The methodology can be seen in section 5 of this report. http://www.vancouvereconomic.com/wp-content/uploads/2015/06/vec-local-food-screen1.pdf |

Rationale/evidence

The food and drink sector is a significant provider of jobs in every country around the world and there are many different types of jobs that define the food and drink sector. Very often however, the working conditions are poor and jobs are low paid. Any city wishing to address food system change needs to understand both the significance of and the issues facing workers in the food and drink sector.

The International Labour Organisation (ILO, established in 1919 based on a view that lasting peace is closely related to social justice), distinguishes between the 'tobacco, food and drink sector' and 'agriculture, plantations and other rural sectors'. The ILO highlights the significance of employment in the global food and drink sector and draws attention to some of the 'challenges to overcome in order to fulfil decent work in this sector, including low labour productivity and low skills; limited social protection and other benefits; occupational, safety and health issues at the workplace; gaps in working conditions between female and male workers; and the need to strengthen social dialogue.'¹

According to the ILO agriculture alone 'accounted for 31 per cent of global employment in 2013, down from 45 per cent in 1991. While the numbers working in agriculture are expected to continue to decline over time, the sheer scale of the working poor in the sector, and the inherently dangerous and uncertain nature of agricultural work require that the world focus on addressing decent work deficits at all levels.'²

¹ International Labour Organisation website; Food drink and tobacco sector <http://www.ilo.org/global/industries-and-sectors/food-drink-tobacco/lang--en/index.htm>

² ILO Agriculture, plantations and other rural sectors <http://www.ilo.org/global/industries-and-sectors/agriculture-plantations-other-rural-sectors/lang--en/index.htm>

Glossary/concepts/definitions used

The urban food system: Urban food systems will be increasingly called upon to contribute to multiple agendas and goals including job creation, nutrition and health, environmental sustainability and food security. According to the World Bank (2018)³, the food system is a major generator of urban employment and livelihoods in areas of food processing and food distribution (and potentially, recycling and waste management); large and small-scale and formal and informal enterprises benefit from the food system; and it is often a key source of work for women and young people. The food and beverage sector is the only labour-intensive, low-tech industry that sustains value-added and employment growth in manufacturing and service sectors as countries move up to upper-middle and high incomes.

A key task is to decide which businesses and organisations constitute 'the food system or the food and beverage sector' in the city. This apparently simple term is in fact quite complex.

The 'food system' or 'food sector' is often used to mean the 'food and beverage sector'. Use and meaning of 'the food and beverage sector' vary. The term can refer primarily to the food and beverage processing and manufacturing industry alone (companies that source their raw materials from the agricultural sector) or it could include the whole food chain - from agriculture, food and beverage manufacturing, retail, hospitality and logistics. The ILO definitions outlined above, separate food products and related manufacturing from production systems - in relation to areas of employment.

The food and beverage sector encompasses all businesses operating in the production, processing, or retailing of food and beverage products. It may or may not include the hospitality/food service sector. In the US, the 'food and beverages industry' is defined as all companies involved in processing raw food materials, packaging, and distributing them. This includes fresh, prepared foods as well as packaged foods, and alcoholic and non-alcoholic beverages. The two segments within this definition are production and distribution of edible goods. Distribution involves transporting the finished food product into the hands of consumers, but the definition excludes grocery stores and the retail sector.⁴

The Food and Agriculture Organisation (FAO) tends to use the terms 'food sector', 'food systems' and 'food chain' interchangeably, meaning all the stages from on-farm production (including input manufacturing) to the consumer's plate.

Categories of food business: From the perspective of urban food strategy planning, the 'food system' or 'food sector' generally includes the following six key categories of business types:

- Urban and peri-urban food production
- Food processing and manufacturing
- Wholesale & distribution of food
- Food Retail
- Catering, hospitality & food service
- Organic and food waste management/disposal/re-use.

In the interest of clear auditing and accuracy, within each of the above six categories, there are also sub-categories. Business types within these above categories will vary from country to country. Therefore, for each of these six business categories, a list of main business types needs to be developed. For example, within retail a range of types can be distinguished: supermarkets, smaller

³ The World Bank, FAO and RUAF Foundation, 2018. Urban food system diagnostic and metrics framework. Washington, USA

⁴ International Business Center at Michigan State University; globalEDGE™ knowledge web-portal <https://globaleedge.msu.edu/industries/food-and-beverage/memo>

grocery stores, specialist food retailers (e.g. bakers, butchers, and fish sellers), kiosks, market vendors, etc. An adapted and locally relevant food business typology needs to be developed and used to guide data collection and analysis.

Consideration of jobs in urban and peri-urban agriculture: Within a city, the focus is more likely to be on non-land based jobs that take place beyond the farm gate, but there may be populations of agricultural workers who work on the land within the city boundary or who travel out of the city to work in rural areas.

The informal food sector: The informal sector plays an important role. In some cities, this sector is more important than the formal food sector. It provides jobs and reduces unemployment and underemployment, but in many cases the jobs are low-paid and the job security is poor. While this indicator does not include the informal food sector due to the likely absence of data, it is nevertheless important to understand what comprises the informal food system/sector in terms of context. Unfortunately there is no absolute definition - the simplest is whether the business is registered to pay taxes or not. The informal sector includes small manufacturing enterprises and small traders and service providers, legal and illegal activities and a wide array of artisans. The most visible activities relating to the informal food sector are: i) food production (urban and peri-urban); ii) catering and transport; iii) the retail sale of fresh or prepared products (e.g. the stationary or itinerant sale of street food).⁵

Jobs vs employees: A full time job may be split between more than one person; thus there may be more employees than jobs. The full time equivalent (FTE) pay rate for a job may be deemed to be a liveable wage as a total, but if the job is split between more than one person, they may still be paid below the liveable wage. These details will be too complicated to deal with for this indicator but it is worth the researchers being aware of such situations in terms of context and nuance.

Minimum/living/liveable wage: Many countries have national policy that determines minimum or living wage rates. For example in the UK the National Minimum Wage is the minimum pay per hour almost all workers are entitled to. The National Living Wage is higher than the National Minimum Wage - workers get it if they're over 25. These rates are reviewed annually. Under UK law, it doesn't matter how small an employer is, they still have to pay the correct minimum wage.⁶ In South Africa a new National Minimum Wage Bill (R20 per hour) is due to come into effect on May 1st 2018, though it may take another two years for farm, forestry and domestic sectors to be brought up to 100% of the national minimum wage.⁷

Preparations

The team responsible for monitoring this indicator should agree on:

1. Definition of the 'food system' - This need to include a locally appropriate typology of food businesses within the six main categories outlined above. Using the main six categories as a shared framework between all cities will enable a degree of comparison.
2. Definition of the minimum/living/liveable wage as appropriate to the country - If there is no national minimum wage set in policy, there may be a level that is discussed by civil society and thus be one that can be used. If there is a need for interviews, the researchers need to have clear information to share with respondents on the national or minimum wage levels, with any variations noted for different sectors if relevant (for example the lower level for the farming

⁵ The informal food sector: Municipal support policies for operators; 'Food in Cities' collection no. 4; FAO, 2003 <http://www.fao.org/3/a-y4312e.pdf>

⁶ UK National Minimum Wage and National Living Wage <https://www.gov.uk/national-minimum-wage-rates>

⁷ Fin24 online news website, Nov 2017 <https://www.fin24.com/Economy/cabinet-approves-minimum-wage-bill-20171102>

sector in South Africa – see above). Details of different national minimum wage rates in local currencies can be found online; for example see Brazil figures here:

<https://tradingeconomics.com/brazil/minimum-wages>.

3. Type of data disaggregation and categories that will be used (see further below)
4. Data collection method if there is no centrally available data
5. Interview design - If interviews are required, questions and instrument have to be designed. Training of interviewers may be needed.

Sampling

The purpose of the survey will be to find out new information on numbers of jobs and wage levels. In case these data have to be collected, a survey could be used in specific food business categories or for specific types of businesses within a category. If for example it is decided to focus only on the food retail sector, a typology of businesses within that category is first needed, followed by an audit of the total number of such businesses in each category. In turn this will enable a sampled approach. A 10% sample (10% of all food businesses within one food business category) is minimally needed.

Example

Total number of types of formal food retail businesses: 5

Total number of retail businesses: 380 (10% = 38 businesses to survey)

Supermarkets: 20 (10% = 2)

Smaller grocery stores: 100 (10% = 10)

Specialist food retailers - bakers (40; 10% = 4), butchers (40; 10% = 4), fish sellers (20; 10% = 2), fruit & veg shops (60; 10% = 6)

Registered food market traders – 100 (10% = 10)

NB: If the decision is to only sample one type of retail business then a higher minimal sample number of 25% – ie 25% of all supermarkets (25% = 5). This would give enough to make an educated estimated about the total.

Data collection and data disaggregation

Total number of jobs in the food sector

Data disaggregation can be done by: i) Category of food business; ii) Type of food business within each category; iii) Number of jobs per type of food business; iv) Number of jobs per category of food business; v) Total number of jobs in the food system.

Jobs paid at least the minimum/living/liveable wage

Data disaggregation can be done by: i) Number of such jobs per type of food business; ii) Number of such jobs per category of food business; iii) Total number of such jobs in the food system.

Existing data on food system employment can be collected from national or local government statistics, records and registers. In addition, other departments or organisations may hold useful data that can help with building an overall picture even if estimated. Interviews with key experts, e.g. university academics or government statisticians, or local labour organisations or trade unions may help with further details, accuracy and clarity, especially if only estimates can be reached.

New data from surveys

It is unlikely that any survey could collect absolute data, given the complexity and extent of the food system, so any survey results would be only to develop estimates or to provide specific sub-sets of data in relation to jobs within specific business types or categories.

Data analysis/calculation of the indicator

The indicator is computed by calculating the total number of jobs in the food system, and comparing that total with the total number of jobs paid at or above the national minimum/living wage.

Depending on the data available, estimates may be needed. Or where there is more information about specific sectors, those figures can be presented in the context of whole picture and estimated totals.

As a data subset it could be important to consider number of jobs for men and women separately and to take note of types of jobs that employ more men than women and vice versa if this additional information becomes clear during data analysis. This would provide additional metrics in relation to the MUFPP action area: Promote decent employment for all, within the food system, with the full inclusion of women.

References and links to reports/tools

The World Bank, FAO and RUAF Foundation, 2018. Urban food system diagnostic and metrics framework. Washington, USA

<http://documents.worldbank.org/curated/en/807971522102099658/pdf/Final-report-Urban-Food-Systems-Diagnostic-and-Metrics-Framework.pdf>

Food and drink sector statistics

Cities in many countries have available data on jobs in the food and drink sector – a starting point for this indicator.

UK: In the UK a central website holds employment data relating to Local Government jurisdictional areas. To find out which of the employment categories would include the food and drink sector, an interview with a Local Government statistician would be necessary. For example the city of Bristol: <http://www.nomisweb.co.uk/reports/lmp/la/1946157348/report.aspx?town=bristol#tabjobs>

Toronto: Food and Beverage sector statistics

<https://www.toronto.ca/business-economy/industry-sector-support/food-beverage/>

Minimum and living wage policy in South Africa:

'A National Minimum Wage for South Africa: recommendations on policy and implementation', 2016 http://www.treasury.gov.za/publications/other/NMW_Report_Draft_CoP_FINAL.PDF



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Milan Urban Food Policy Pact Monitoring Framework

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Indicator 22: Number of community-based food assets in the city

MUFPP framework of actions' category: Social and economic equity

This indicator measures the number of community-based food assets in the city, such as community kitchens, community gardens, community shops, cafes, food hubs.

Overview table

| MUFPP Work stream | Social and economic equity |
|---|--|
| MUFPP action | Promote networks and support grassroots activities that create social inclusion and provide food to marginalised individuals. |
| What the indicator measures | The number of community-based food assets in the city. These could be by category, e.g. community kitchens, community gardens, community shops, cafés, food hubs. |
| Which variables need to be measured / what data are needed | Geographical location; categories and sub-categories of assets; assets that specifically target particular user groups (e.g. free or low-cost catering or retail) |
| Unit of measurement (i.e. Percentages, averages, number, etc.) | Number by category of community-based food asset |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Type of community-based food asset |
| Possible sources of information of such data | <ul style="list-style-type: none"> -Existing asset maps or directories -Local food sector reports -Public food register (or lists kept by the environmental health team who register premises dealing with food) -NGO's, community sector, local food networks -Food Policy Council or equivalent body -Welfare & food insecurity workers; academics |
| Possible methods/tools for data-collection | Analysis of existing reports and registers; interviews with key stakeholders; online searches; surveys with key stakeholders. |

| | |
|--|---|
| | (NB: some of the data required for this indicator may already have been collected for other indicators, e.g. school feeding; social assistance programmes, food-related learning and skills development) |
| Expertise required | Research, data analysis, interview and survey skills |
| Resources required/ estimated costs | |
| Specific observations | The most useful way to present the collated data is on food asset maps or in directories. A decision will need to be made about whether to include school-based assets or keep this a separate indicator. GIS mapping of these can be a useful planning and political tool as well as a community engagement vehicle. |
| Examples of application | Vancouver: http://www.vch.ca/public-health/nutrition/food-asset-map |

Rationale/evidence

To enable a connection with the planning system: In 2007 the American Planning Association (APA) produced its Policy Guide on Community and Regional Food Planning, a belated attempt to make amends for the fact that the planning community, academics and professionals alike, had signally failed to engage with the food system (Morgan, 2009).¹

To empower community action: Since 2000, the concept and practice of Food Systems Assessments has developed significantly, driven by i) interest in local food system and ii) the importance of including the food system in urban planning. A review of food system assessment approaches identified eight types of assessments (Freedgood, Meter and Pierce-Quiñonez, 2011). One of these was community food asset mapping, a participatory model that engages a wide range of stakeholders in charting the assets in their food system in the form of a map. 'Avoiding the negative implications of a "needs" assessment (which can spiral community members into inactivity), an "asset map" can bring people together more positively to discuss what their community already has, rather than what it lacks.'²

Sharing information: Understanding the presence, location, and impact of community-based food assets is an important early step in urban food system planning. Sharing this information in the form of a map or directory enables wider engagement, networking and provides a basis for new collaborations to further strengthen the food system. Importantly it can also inform policy and strategic decision making by the municipality.

Baseline data: In Vancouver (as in a number of other cities), one of the ways to create a baseline of Vancouver's food system is to document food assets. 'Food assets are defined as resources, facilities, services or spaces that are available to Vancouver residents, and which are used to support the local food system'³.

Glossary/concepts/definitions used

Categories of food assets: Each city will need to work out the most appropriate categories to use. For example, Vancouver use the following criteria: 'places where people can grow, prepare, share, buy, receive or learn about food' and have identified eight categories.

- Schools
- Community organisations
- Retail stores or markets,
- Growing food spaces
- Kitchen or food programmes,
- Neighbourhood food networks,
- Free or low cost grocery items,
- Free or low cost meals.

Within these categories, some have further sub-categories. For example, kitchens are further broken down into three sub-categories: kitchen access, food skills workshops, community kitchen

¹ Feeding the city: the challenge of urban food planning, Kevin Morgan, Cardiff University (editorial); International planning studies, volume 14, 2009

² Emerging assessment tools to inform food system planning, Julia Freedgood, Marisol Pierce-Quiñonez, Kenneth A. Meter; Journal of Agriculture, Food Systems and Community Development, 2011 <https://foodsystemsjournal.org/index.php/fsj/article/viewFile/84/83>

³ What feeds us: Vancouver food strategy, January 2013 <http://vancouver.ca/files/cov/vancouver-food-strategy-final.PDF>

programmes. Growing food divides into four: community gardens, community orchards, urban farms, garden programmes and education.

Community organizations and schools are included 'because they are places where community members can get support with learning and health or connect with others in their community'.⁴ However, the schools are only noted for their presence rather than any specific food assets they offer.

Vancouver has collected information on food assets and created an interactive online map as a resource. The North Shore Community asset map (north of Vancouver city) is very similar with a few slightly different sub-categories to suit their situation, e.g. growing food categories. (See website link in footnotes for further details).

Preparations

The team responsible for monitoring this indicator should agree on:

1. Whether or not to include schools; clear rationale for decision
2. Main asset categories and sub-categories; clear rationale for decisions
3. Any other types of data disaggregation that will be used (see further below)
4. Data collection and recording method (it may be most efficient to create a map)
5. If surveys are to be used, survey questions and instrument have to be designed. Training of survey enumerators may be needed.
6. How the information gathered for this indicator could be shared (e.g. maps/directories).

Sampling

In case data are collected by means of a survey with food-related community based organisations, the aim is to fill as many gaps and gather specific details so a sample is not relevant. It might be pragmatic to focus on particular neighbourhoods if resources are very limited, with the view to building up more information as soon as that becomes possible.

Data collection and data disaggregation

Note: Some of the data required for this indicator could usefully inform some of the other social and equity indicators, e.g. school feeding; social assistance programmes, food-related learning and skills development. This should be identified from the start. Otherwise, data generated for them would also be useful for this indicator.

Data disaggregation can be done by:

1. Geographical location e.g. neighbourhoods
2. Categories of assets e.g. community kitchens, community gardens, community shops, cafes, food hubs.
3. Sub-categories of assets – see notes above. These may only become clear once analysis of data is underway. Each city will need to decide what sub-categories are most useful and locally relevant.
3. Type of user group - it may be important to identify assets that specifically target particular user groups.

Data collection can be from existing records, registers and reports; from interviews with key stakeholders to identify further sources of information; from a survey with community-based food

⁴ Vancouver Coastal Health, Vancouver Food Asset Map <http://www.vch.ca/public-health/nutrition/food-asset-map>

organisations to identify food assets, specific details of focus of activity and types of users – to help fill gaps in data and clarify sub categories.

Data analysis/calculation of the indicator

The indicator is computed by calculating the total number of community-based food assets. On its own, a number is not very revealing so it needs to be understood alongside a more useful detailed breakdown of assets by geography, category and subcategory, ideally presented visually.

References and links to reports/tools

Ideas on how to gather and present the data on community food assets:

Vancouver, Canada: food asset mapping

Vancouver Coastal Health, Vancouver Food Asset Map <http://www.vch.ca/public-health/nutrition/food-asset-map>

London, UK: using a community-led asset approach

Gipsy Hill Food Village Hub: a community-led asset based approach to positively influencing the local food system; Cunningham and Oki, Public Health Lambeth Borough Council
https://www.lambeth.gov.uk/sites/default/files/Gipsy_Hill_Final_0.pdf

Washington, US: example of a localised neighbourhood asset map

Camp Washington food and community asset map
<https://static1.squarespace.com/static/5633fcede4b0b0c3596ed436/t/5788f6e103596e546ca53ace/1468593896214/Camp+Washington+Food+and+Community+Asset+Map+-+Pages.pdf>

Food coops toolkit, Sustain, UK: includes guidance on food mapping and community audits

A community audit is a type of mapping, but goes into more detail than food mapping because as well as finding out about food outlets, a community audit also includes other local facilities and services. <https://www.sustainweb.org/foodcoopstoolkit/communityaudit/>



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Indicator 23: Presence of food-related policies and targets with a specific focus on socially vulnerable groups

MUFPP framework of actions' category: Social and economic equity

The indicator allows for (self) assessment of the presence, and the level of implementation of food-related municipal policies and targets, that either directly target vulnerable groups or do so indirectly by supporting and enabling the grass-root activities of community-based networks to increase social inclusion and provide food to marginalised individuals.

Overview table

| MUFPP Work stream | Social and economic equity |
|---|--|
| MUFPP action | Promote networks and support grassroots activities that create social inclusion and provide food to marginalized individuals. |
| What the indicator measures | The indicator allows for (self) assessment of the presence (yes/no), and the level of implementation of food-related municipal policies and targets (with help of a scoring sheet), that either directly target vulnerable groups or do so indirectly by supporting and enabling the grass-root activities of community-based networks to increase social inclusion and provide food to marginalised individuals. The focus is on policies with a specific focus on vulnerable groups. If desired, critical assessment of the actual policy/ies may be implemented in addition. Both exercises help define areas for improvement. |
| Which variables need to be measured / what data are needed | First, information is collected on any existing food-related policies or strategies and targets that fit these criteria. A broad look may be needed across a number of different municipal policies and strategies, as there may not be any one that has a specific food focus – which policies, strategies and targets are relevant? Second, the specific focus on socially vulnerable groups needs to be clarified – which groups? Third, both the link within the policy/strategy to food and socially vulnerable groups needs to be clarified – which aspects? In order to complete the assessment, the next step is to investigate what is actually happening - the level of implementation, budget allocation, targets and monitoring of impact – as a result of the municipal policies, strategies and targets. |

| | |
|--|---|
| Unit of measurement (i.e. Percentages, averages, number, etc.) | Yes/No. This indicator will be assessed in a qualitative way. |
| Unit(s) of Analysis (i.e people under 5 years old, etc.) | The policy or programme. This indicator will be assessed in a qualitative way. |
| Possible sources of information of such data | Policies, strategies and planning documents from the municipality. Specific reports on the work. Key staff in the municipality. Key civil society groups, networks and NGO's involved with food work that targets socially vulnerable groups. |
| Possible methods/tools for data-collection | -Self assessment -Desk top research of documents -Interviews with relevant staff in the municipality who are involved with the implementation of relevant policy, strategy and targets; interviews with key stakeholders -External evaluation |
| Expertise required | Research and interview skills; expertise in policy formulation/strategic planning |
| Resources required/estimated costs | |
| Specific observations | Every city will have a different situation. Some will have very clear and specific food-related policies that address vulnerable groups while others will not. However there may be other policies and strategies that have an impact on food provision to vulnerable groups, or on food-related activities if not actual food provision. Many cities will have food safety and food hygiene policy required by law. These may or may not be included, as deemed appropriate. |
| Examples of application | Bristol City Council officers from several different departments took part in an externally facilitated food and planning development review (see tools below.) |

Rationale/evidence

Local governments that have signed the Milan Urban Food Policy Pact have all acknowledged and (re)claimed jurisdictional responsibility for food systems activities that directly impact the health and well-being of their residents. One way assess level of commitment is to examine i) the presence (or absence) of food-related policy or strategy, and the expected targets/outcomes, and ii) the specific target groups of people that should benefit from such policies. Most cities are unlikely to have done such an audit.

The significance of local government food-related policy and targets

The existence or absence of local government food related policies and targets potentially have a significant impact. A local government or municipality may have very clear food-related policies and targets. Some if not all of these may focus on addressing the issues faced by socially vulnerable groups. For example, household food security policy or school feeding programmes or mother and baby/child nutrition programmes. Some municipalities may have just one or two specific food policies, for example school meal provision or food safety legislation and procedure. While the presence of such policies and targets are crucial for any type of food system regulation or development, they are still only as effective as their implementation and ongoing development.

A comprehensive national survey on local governments' food-related activities was conducted in the US and found the following ways that local governments can address food systems.

- Policies supporting food access and production;
- Support of food-related projects or programs;
- Inclusion of food-related topics in official plans;
- Departments responsible for food issues;
- Coordination or collaboration with other stakeholders or communities on food system

- activities; and
- Awareness and use of federal resources available to local governments for funding food system development.

The report also noted the following: ‘Distinct from the distribution of emergency food, survey respondents reported far fewer activities more closely targeted toward systemically improving the health and security of vulnerable populations.’¹

Glossary/concepts/definitions used

Definition of ‘vulnerable populations’: In general, ‘vulnerability’ is accepted to mean susceptibility to harm or suffering. ‘Vulnerability’ is a regularly used word that means different things in different contexts. In the context of public health, the World Health Organisation (WHO) states: ‘Vulnerability is the degree to which a population, individual or organization is unable to anticipate, cope with, resist and recover from the impacts of disasters. Children, pregnant women, elderly people, malnourished people, and people who are ill or immune-compromised, are particularly vulnerable when a disaster strikes, and take a relatively high share of the disease burden associated with emergencies. Poverty – and its common consequences such as malnutrition, homelessness, poor housing and destitution – is a major contributor to vulnerability.’²

The Comune di Milano uses the definition of relative poverty (compared to an average situation) and absolute poverty (a condition of extreme poverty, so a condition characterized by severe deprivation of basic human needs).

Socially vulnerable groups: (See also definition notes for Indicator 19 “Percentage of people supported by food and/or social assistance programmes”). Social vulnerability is the result of an interaction of different personal, environmental and social factors that affect a person’s wellbeing or ability to cope with difficulties or disasters (as above). For example:

- Personal - age and health
- Environmental - availability of green space, quality of housing
- Social - levels of inequality and income, the strength of social networks, the cohesion of neighbourhoods.

Examples of different socially vulnerable groups could include:

- Very young children
- Older people
- People with poor mobility or access to adequate services
- People of various tenancy status and types of housing
- People who lack access to green space
- People experiencing social isolation
- People on low incomes.

While not all factors known to affect vulnerability can be easily measured, a number of them can be mapped using direct and proxy indicators such as those listed above.³

¹ Local Government Support for food Systems: themes and opportunities from national data, Laura Goddeeris, 2013, Michigan State University Centre for Regional Food Systems
<http://www.canr.msu.edu/foodsystems/uploads/files/local-govt-survey-brief.pdf>

² Environmental health in emergencies and disasters: a practical guide, WHO, 2002

³ Socially vulnerable groups sensitive to climate impacts, 2014; Climate Just <http://www.climatejust.org.uk/socially-vulnerable-groups-sensitive-climate-impacts>

Types of food-related policies and targets that focus on socially vulnerable groups: Each city will have different policies and targets. The starting point may be either the policy or the target group. Some examples are set out below.

Health and food access/provision: The US survey mentioned above found that the area of community health and food security is the most obvious area that connects to socially vulnerable groups, e.g. zoning ordinances that enable the operation of farmers' markets to increase food access, direct support for farmers' market developments, support for organisations dealing with emergency food distribution programmes, improved siting of shops providing fresh food in under-served neighbourhoods, enabling food assistance recipients to use farmers markets.

Food production and infrastructure: Support for production and infrastructure activity is a second area that may in some cities directly support socially vulnerable groups, e.g. land and water provision for urban food production; land use tenancy agreements; permissions for composting, green roofs, bees, chickens, and other small livestock in non-traditional zones; use of buildings for food production or processing.⁴

Healthy eating: In some cities there may be policy or strategy (education and/or practical support for behaviour change) that relates to obesity, healthy weight or healthy eating, and which targets specific groups of people or geographic areas of the city.

Nutrition: There may be specific nutrition-based targets. The World Health Organisation has set six key global nutrition targets to improve maternal, infant and young child nutrition by 2025, each of which connects in some way to food: stunting in under 5yrs.; anaemia in women; low birth weight; childhood overweight; breastfeeding; wasting.⁵

Food storage & cooking facilities: There may be a requirement for a certain standard of kitchen or food preparation and storage spatial specifications in housing development policy. There may be specific programmes to support low-income households with improving food preparation and cooking facilities (including fuel costs or improved fuel types).

Food hygiene and food safety for vulnerable groups: (In many countries this is required by law.) National public health or food safety agencies, local government environmental health or public health departments may have food safety policy or strategy or guidance in place to help protect specific vulnerable groups whose immune systems may be weakened, and thus most at risk of infections caused by food-related bacteria. For example *L. monocytogenes* (listeriosis), which can be a problem with chilled ready-to-eat foods, if food is not stored at the correct temperatures or if hygienic procedures are not adhered to. The groups of people most at risk include cancer patients, patients undergoing immunosuppressive or cytotoxic treatment, unborn and newly delivered infants, pregnant women, people with diabetes, alcoholics (including those with alcoholic liver disease) and a variety of other conditions. Elderly people are also included in this higher risk group.⁶

⁴ Local Government Support for food Systems: themes and opportunities from national data, Laura Goddeeris, 2013, Michigan State University Centre for Regional Food Systems

<http://www.canr.msu.edu/foodsystems/uploads/files/local-govt-survey-brief.pdf>

⁵ WHO Global nutrition targets 2025 <http://www.who.int/nutrition/global-target-2025/en/>

⁶ Reducing the risk of vulnerable groups contracting listeriosis; guidance for healthcare and social care organisations; UK Food Standards Agency <https://www.food.gov.uk/sites/default/files/listeria-guidance-june2016.pdf>

Specific vulnerable groups: It may be more relevant to start with specific categories of vulnerable groups and investigate which specific policies or strategies target support at them, or have outcome targets that relate to addressing the needs of these groups. These could include, for example, policy or strategy to support homeless young people, or street children, or drug users, or people living in a particularly vulnerable neighbourhood. The focus should be on the extent to which any such policies or strategies relate to food issues.

Funding for community-based work on food issues: A local government may choose to make funding available to other community based organisations to carry out work that relates to all of the above issues. In this case the policy (in this case one related to funding, but likely to be linked to specific objectives) may be indirectly targeted at specific vulnerable groups.

Preparations

This indicator could be kept as simple as possible with the research team only doing a review of policy documents, or more in-depth data could be collected to fill in any gaps and get a sense of policy impacts on socially vulnerable groups.

The team responsible for monitoring this indicator should agree on:

1. Clear criteria for selecting which policies or strategies are relevant to this indicator
2. An approach for how to gather information on the relevant existing local government policies, strategies and targets
3. Clear criteria for defining 'socially vulnerable groups', as appropriate for the city
4. A clear methodology for analysing and recording the links between food-related policy and socially vulnerable groups, in order to identify the relevant policies (e.g. review of policy documents, local government officer roundtable discussion – see below)
5. Any information gaps that need follow up and further clarification.
6. How to identify the key stakeholders – the most relevant people to interview for further information. This may be people who create policy or oversee its implementation. It could also include representatives of the groups that are the focus of the policies.
7. If key stakeholder interviews or surveys are to be used, questions have to be designed. Training of interviewers may be needed.
8. If roundtables are needed, the process will need to be designed and run by experienced facilitator who can draw out the information that is needed from the participants.

In case rather than self-assessment/audit other evaluations methods are selected (external evaluation, key informant interviews) respective preparations should be taken.

Sampling

The need for sampling will depend on the required breadth and depth of understanding in relation to this indicator. For example, interviews with key people within the municipality will provide data about the policies themselves but not whether the policy has any actual impact on socially vulnerable people.

For local government officers: A roundtable or series of interviews with all food-related policy makers or implementers could be used to help clarify which policies and targets exist and to what extent they focus on socially vulnerable groups.

If more information is needed on the impact of these policies on socially vulnerable groups, data may be gathered using interviews with representatives from key target groups of the policies.

For a wider assessment: A randomly sampled number of external stakeholders could be asked in a survey if they are aware of the existence, content and results of a food-related municipal policies and targets, that, directly or indirectly focus on socially vulnerable groups. (Such questions could also be included in a broader urban food-related survey.)

An in-depth assessment: A smaller group of randomly sampled external stakeholders could be invited to participate in a structured roundtable discussion to collect their views and experiences of food-related policy that is specifically aimed at socially vulnerable groups.

Data collection and data disaggregation

Data collection for this indicator is qualitative and takes an audit approach. There are several steps to work through. The order may not be as set out below:

- Identify existing food-related policies or strategies and targets that fit the agreed criteria for this indicator. A broad look may be needed across a number of different municipal policies and strategies, as there may not be any one that has a specific food focus – which policies, strategies and targets are relevant?
- Identify which socially vulnerable groups are most relevant. This could be done from the perspective of existing policy that has already identified such groups. Alternatively, interviews with key stakeholders could help to develop the criteria and at the same time build interest and buy-in for the work.
- Analyse the policies/strategies and targets to identify which, if any, specifically focus on socially vulnerable groups and on which aspects of food.
- If this is a priority area for the city, further investigation could assess what is actually happening - the level of implementation, budget allocation, targets and monitoring of impact – as a result of the municipal policies, strategies and targets. This could be done through further interviews or roundtable meetings with key stakeholders.

Scoring sheet

| Characteristics | Scoring | | | Total score | Disaggregation of information | Observations/ Recommendations |
|---|----------------------------------|---------------------------|---------------------|-------------|--|-------------------------------|
| Presence of relevant policies/strategies/targets that fit agreed criteria for this indicator | Yes= 1 point | No= 0 points | | | -Number and type of policies and strategies -Specific targets set -Type of socially vulnerable groups addressed | |
| | | | | | | |
| Level of implementation: is the policy/strategy actually implemented or enforced? | Yes, completely= 2 points | Partially= 1 point | No= 0 points | | -Discuss for each of the policies or strategies. -Indicate reasons for partial or non-implementation/enforcement | |
| | | | | | | |
| Socially vulnerable groups: The policy/strategy/targets specifically address socially vulnerable groups | Yes, completely= 2 points | Partially= 1 point | No= 0 points | | -Distinguish for each of the policies or strategies or targets. -Note: Specific vulnerable groups may be identified depending on local context and policy priorities. The scoring sheet could monitor | |
| | | | | | | |

| | | | | | | |
|---|----------------------------------|---------------------------|---------------------|--|---|--|
| | | | | | targeting of each defined vulnerable groups by giving each of them for a score of 1 (this specific group is targeted) or 0 (this groups is not targeted). | |
| Information and communication: Are policies and regulations widely shared within city government and to potential beneficiaries | Yes, completely= 2 points | Partially= 1 point | No= 0 points | | -Number and type of information and communication mechanisms and target groups | |
| Total score: | | | | | | |

Data analysis/calculation of the indicator

Based on the scoring and further information provided, participants in the monitoring/review process may identify gaps or areas for strengthening or improvement:

- How can existing policies and programmes be better implemented and communicated?
- How can better targets be set?
- What new or revised policies and programmes could be proposed?
- What process should be followed to implement these changes? Steps to be taken?
- Stakeholders to be involved? Critical time-lines? Resources required?

Note: If existing, it may be relevant to further critically assess the specific policies or programmes themselves in order to highlight areas for improvement. The critical policy analysis proposed for Food Governance Indicator 3 (*Presence of a municipal urban food policy or strategy and/or action plans*) may be used and adapted for this purpose. This approach could be adapted along the lines below.

| Type of food-related policy/targets | Focus of the policy - type of vulnerable group(s) | Objective of focus on socially vulnerable groups | Actual impact on socially vulnerable groups |
|-------------------------------------|---|--|---|
| | | | |
| | | | |
| | | | |

Ultimately, the purpose is to find out the extent to which food-related policies and targets are focussed at socially vulnerable groups. The analysis should identify which ones do that and in what way, or at least in which ways they attempt to do that. Assessing actual impact may be beyond the scope of this work, unless it is feasible to do stakeholder interviews or roundtable discussions.

References and links to reports/tools

City Council Food and planning developmental review: A report based on interviews with Bristol City Council staff about their work on food. A peer review team from the University of the West of England visited Bristol City Council on 17 March 2014 and interviewed 14 staff and one elected member about their roles in improving the health, sustainability and resilience of the food system that serves Bristol.

Although this particular review did not focus on any specific policy, this rapid appraisal approach could be adapted for the purposes of this indicator, and also provide other very useful data.

<http://bristolfoodpolicycouncil.org/food-and-planning-developmental-review-a-report-based-on-interviews-with-bristol-city-council-staff-about-their-work-on-food/>



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Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 24: Number of opportunities for food system-related learning and skill development in i) food and nutrition literacy, ii) employment training and iii) leadership

MUFPP framework of actions' category: Social and economic equity

Number of opportunities (courses, classes, etc.) for food system-related learning and skill development in three different categories: i) food and nutrition literacy, ii) employment training and iii) leadership. This exercise will support gathering baseline data on which to develop analysis of gaps, needs, opportunities, and to build further action.

Overview table

| MUFPP Work stream | Social and economic equity |
|--|--|
| MUFPP action | Promote participatory education, training and research in strengthening local food system action to increase social and economic equity, promote rights-based approaches, alleviate poverty and facilitate access to adequate and nutritious foods. |
| What the indicator measures | Number of opportunities (courses, classes, etc.) for food system-related learning and skill development in three different categories: i) food and nutrition literacy, ii) employment training and iii) leadership. This exercise will support gathering baseline data on which to base analysis of gaps, needs, opportunities, and to build further action. |
| Which variables need to be measured / what data are needed | Data on types/number of opportunities within each category of learning/skills are needed: i) food and nutrition literacy, ii) employment training and iii) leadership. Data could be further disaggregated within each of those categories for the following sub categories: i) formal; informal learning or training; ii) type of food-related skills gained by beneficiaries; iii) type of provider. |
| Unit of measurement (i.e. Percentages, averages, number, etc.) | Total number of opportunities in the city to gain formal or informal training or skills development in each of three categories: i) food and nutrition literacy, ii) food-system related employment training, and iii) food-system related leadership |

| | |
|--|---|
| Unit(s) of Analysis <i>(i.e. people under 5 years old, etc.)</i> | Specific typology of learning opportunities, skills gained, and of training providers |
| Possible sources of information of such data | <ul style="list-style-type: none"> -Adult education; community learning; further/higher education colleges; agricultural colleges; vocational colleges or learning centres; -Food centres; NGO's -Employment training programmes; job centres; business incubators; business support agencies -Environmental/public health department -Schools, colleges and universities -City food partnerships and food governance bodies; local education authority |
| Possible methods/tools for data-collection | Review of any relevant existing reports; interviews with key stakeholders; surveys |
| Expertise required | Research design; interviewing & surveys; data collection and analysis |
| Resources required/estimated costs | |
| Specific observations | The count should include all relevant programmes, and should note where there is specific support from the municipality. It may be deemed more useful to separate out one or more of the categories into different indicators, depending on the complexity of data. This indicator is currently structured to look at overall numbers and types of learning opportunities provided rather than at numbers of trainees or at any specific target group. If it were a policy priority to focus specific training/skills development on specific groups (e.g. socially vulnerable groups, or young people), then the guidelines still apply but the scope and parameters would need to be adapted. Collecting this data and developing an overview of existing training may prove a more valuable first stage exercise than attempting to start by counting numbers of trainees, but this could be added or done at the same time. This process could rather be seen as gathering baseline data from which to develop a food-systems education strategy based on a clear situation analysis. |
| Examples of application | |

Rationale/evidence

Many varied organisations and institutions, including the municipality, can potentially play an important role in building food-system related capacity and skills. This can be done in a way that promotes participatory education, training and research with a strategic focus on increasing social and economic equity, promoting rights-based approaches, alleviating poverty and facilitating improved access to adequate and nutritious foods.

If this were happening, one indicator would be the extent to which such learning and training opportunities are provided. Another would be to quantify the numbers (and types) of people gaining new skills and knowledge, and taking this further, to assess how they use their training in employment or activities that in turn contribute to strengthening the city (and city region) food system. A single indicator cannot adequately assess this.

However a starting point would be to understand the current situation. This indicator therefore focuses on assessing provision within the city of food-related learning and skills development opportunities. It measures the number of opportunities for food-related learning and skill development in three different categories: i) food and nutrition literacy, ii) employment training and iii) leadership supported by the municipality (directly or indirectly).

It is important to understand the role that different organisations and institutions play, including that of the municipality. Ideally an audit of all such opportunities should be done. Institutions like colleges and universities or even private businesses tend to offer formal academic or employment-related opportunities. Municipalities may provide funding to other organisations to provide these opportunities e.g. community groups, schools, health centres, vocational training centres. They may also provide some directly e.g. through local government-run adult learning programmes or family learning centres. If resources are limited, it may be easier to focus on those provided or supported by the local government in the first instance, given that they are MUFPP signatories.

Glossary/concepts/definitions used

What do we mean by ‘opportunities’ for food-related learning and skill development? Ideally there will be a wide range of opportunities to gain food related learning and skills. That range could include the provision of short or longer-term courses, individual classes, modules of study within other courses, work-based placements with businesses or institutions, apprenticeships in industry, long-term career training programmes. Such opportunities may be formal and result in formally recognised qualifications. Others may be community based and less focussed on formal qualifications but rather new skills and knowledge for improved health and wellbeing. The range will also target different types of learners and different ages in some cases. For example ‘continuing professional development’ learning may be available for people in full-time employment. Some schools may have a strong focus on food and nutrition literacy for children. Some vocational courses may focus specifically on unemployed youth.

Food-related learning and skills development categories & examples:

Food and nutrition literacy: Learning and skills development in this category of opportunities could include food preparation and cooking and or practical food growing sessions on the school curriculum. It could be health and nutrition classes for mothers and babies, or for young families. It could be cooking classes in the community to help encourage confidence to cook with seasonal fresh ingredients while on a low budget or use fuel/energy more efficiently. It could be learning how to grow food to eat, and how to store, preserve or process it. There are numerous examples of different types of opportunities within this category. Generally provision of this category tends to be provided in community settings, though some may be in more formal education settings e.g. diplomas or degrees in nutrition or nutrition education. There could also be more public approaches, such as the UK chef, Jamie Oliver’s work with schools in the US to increase awareness of the difference between positive and less positive food choices, and using this for a series on mainstream television.

Employment training related to food systems: Learning and skills development in this category of opportunities focus on skills for employment and building the capacity of the workforce. Examples include courses on public health, food hygiene and food safety, food and drink processing and manufacturing, the hospitality sector, catering and food service, agricultural and horticultural training, food wholesale, distribution and logistics, food retail, etc. This kind of training tends to be provided by colleges, universities and private companies. There may be apprenticeship or work-placement connections between education providers and business/industry/institutions. A municipality might directly provide related training for adult learners or might contribute funding to other learning and skills development routes.

Leadership related to food systems: The arena of ‘food leadership’ is not widely known, discussed or promoted. However, with the increased awareness of the role that cities and local governments can plan in food system transformation comes the need to develop a new generation of ‘food leaders’. The impact of investment in this area would be to increase the number of people ‘*learning our way out of deeply unsustainable food systems and learning our way in to more sustainable approaches to food production and consumption.*’ Learning and skills development in this category of opportunities could include involvement with food governance bodies, such as food boards, food partnerships or food

policy councils. These could be organisations as a whole, or individuals within organisations. It could be university students, urban agriculture organisers, public sector food procurement officers or catering managers. *‘Combine all of this with a focus on leadership studies and the possibilities tantalizingly unfold. Food movements, community projects, Indigenous initiatives and municipal governance suddenly take on new significance and strategic importance. Learning leadership through food can have lasting repercussions, both for individuals and for society as a whole.’*¹

What do we mean by ‘food-related learning and skill development’? A wide range of different types of knowledge and skills are covered by the three different categories above.

Food and nutrition literacy: Knowledge of how food, health and environment are related; understanding good nutrition; food literacy (understanding the process of how food gets to your plate and what types of foods should be on your plate; or planning and management, selection, preparation and eating); food production in an urban context.

Employment training: Food-related skills for employment and careers.

Leadership: Food system analysis, strengths, vulnerabilities and opportunities for transformation at many different levels (social, political, economic, environmental).

What do we mean by ‘strengthening local food system action’?

Ultimately this indicator relates to this stated MUFPP action plan outcome: ‘Local communities are equipped with knowledge, skills and expertise to develop local food system activities’. These should be actions ‘to increase social and economic equity, promote rights-based approaches, alleviate poverty and facilitate access to adequate and nutritious foods.’

Preparations

The team responsible for monitoring this indicator should agree on:

1. The scope and parameters for this indicator – which categories and types of opportunities to include (e.g. ‘food leadership’ could be treated as a separate indicator).
2. Should opportunities for vulnerable groups be highlighted; or should this be the entire focus of this indicator?
3. How to quantify ‘opportunities’ – attempt to count every single opportunity, or to count the number of types of opportunities within each category.
4. Whether to focus only on those opportunities that are supported by the municipality (directly or indirectly) or whether to include all provision of such opportunities.
5. Type of data disaggregation and categories that will be used and criteria for distinguishing between the categories, the types within the categories, and whether ‘formal’ or ‘informal’.
6. Potential sources of information.
7. Data collection method (analysis of records or surveys).
8. If surveys are to be used, survey questions and instrument have to be designed. Training of survey enumerators may be needed.

Sampling

In case data are collected by means of a survey, a 10% sample of all ‘opportunity’ providers in each of the three categories is minimally needed. Ideally the sample should represent a good range of types

¹ Food Leadership: Leadership and Adult Learning for Global Food Systems Transformation, 2017; edited by Catherine Etmanski; International Issues in Adult Education <https://www.sensepublishers.com/media/3192-food-leadership.pdf>

of providers in each of the categories in order to give as representative an overview of provision as possible.

Data collection and data disaggregation

There are various options on data disaggregation, depending on policy priorities and the amount of resources available for this indicator.

1. By unit of analysis: type of 'opportunity', meaning the means by which learning or skill development is provided, e.g. courses, classes, modules, work-based placements, apprenticeships, long-term training programmes, etc.
2. By number of opportunities within each category of learning/skills: i) food and nutrition literacy, ii) employment training and iii) leadership.
3. Data could be further disaggregated within each of those categories for the following sub categories: i) formal; informal learning or training; and ii) by specific type of food-related skills offered to/gained by beneficiaries.

Data can be collected from existing records and registers of the provider organisations. Further interviews with key stakeholders, and/or surveys with samples of providers will most likely be needed. The purpose of either or both will be to gain more accurate information on the provision of food-related learning and skills development opportunities.

A survey will need to gather information on types and numbers of opportunities/means of learning; types and numbers of skills or learning offered; and whether the learning or skills development is classed as 'informal' or 'formal'; way in which the municipality supports provision.

Data analysis/calculation of the indicator

The indicator is computed by calculating the total number of (or number of types of) opportunities for food-related learning and skill development in three different categories. In order to get to total numbers, all the above information will need to be collected.

References and links to reports/tools

Food Leadership: Leadership and Adult Learning for Global Food Systems Transformation, 2017; edited by Catherine Etmanski; International Issues in Adult Education. 'The middle section of the book looks at food leadership within a variety of contexts. One of these is food policy councils, which can promote inclusive leadership development activities aimed at food system change. Another is community gardens, where leadership can take many forms and support food system transformation. A final context is government and the development of political leadership.'

<https://www.sensepublishers.com/media/3192-food-leadership.pdf>

Sustainable Agriculture with Gender Inclusion and Participation | Quito, Ecuador. This project is run by the city to improve food security, urban agro-ecology, climate change adaptation, and nutrition. The program has been working together with women and female-headed households for over a decade to improve the quality of life of the most vulnerable people of the Metropolitan District of Quito. <https://unfccc.int/climate-action/momentum-for-change/women-for-results/sustainable-agriculture-with-gender-inclusion-and-participation-ecuador>

Example of a food safety course provided by Cambridge City Council. E-Learning: HABC Food Safety - Level 1 Award (online course). This basic foundation qualification is aimed at learners working in a catering environment in low-risk roles but where there is an element of food handling. This could include bar workers, waiting staff, health care workers, kitchen porters and stock/store room staff. <https://www.cambridge.gov.uk/food-safety-level-1-award-online-course>

Toronto's training for new Canadians. Toronto won a MUFPP award for its Community Food Works for Newcomers program that provides food safety training and a certificate to new Canadians:

<http://www.milanurbanfoodpolicypact.org/wp-content/uploads/2017/10/MPA-winners-2017.pdf>

and a video about the program here:

<https://www.youtube.com/watch?v=ayboGqLIE9w>

An overview of nutrition education and skills approaches from around the world. NOURISHING framework: Nutrition education and skills. This table provides examples of the types of policy action that can be taken within this policy area, examples of where these policy actions have been implemented, and a brief description of what the action involves (World Cancer Research Fund International).

https://www.wcrf-uk.org/sites/default/files/10_Give_Nutrition_Education_and_Skills_June_2017.pdf



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Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 25: Number of city residents within the municipal boundary with access to an (urban) agriculture garden

MUFFP framework of actions' category: Food production

Number of city residents with access to urban agriculture gardens/land. In order to account for geographic, economic and social differences across cities in access to gardens, the indicator will only reflect impact accurately if data is filtered by geospatial location, population density, income levels etc.

Overview table

| MUFFP Work stream | Food production |
|-----------------------------|---|
| MUFFP action | Promote and strengthen urban and peri-urban food production and processing based on sustainable approaches and integrate urban and peri-urban agriculture into city resilience plans. |
| What the indicator measures | <p>The indicator measures the accessibility of city residents (and specific target groups) to urban agriculture gardens/land. In order to account for geographic, economic and social differences across cities in access to gardens, the indicator will only reflect impact accurately if data is filtered by geospatial location, population density, income levels etc.</p> <p>Note: There may be situations where gardens exist, but people cannot access them due to cost, mobility or lack of adaptations for people with physical disabilities.</p> <p>Note: These can include city-designated gardens or urban agriculture gardens (community gardens, school gardens, allotment gardens) that are privately owned/managed or managed by social, community and other organisations. Data on the latter categories may be scarcer.</p> <p>Note: Urban agriculture is about food production, but also social, community benefits and environmental services. Depending on local policy interests, the indicator may focus on specific urban agriculture gardens or for example on gardens for food production only.</p> |

| | |
|--|--|
| Which variables need to be measured / what data are needed | <p>Metrics may include:</p> <ul style="list-style-type: none"> -Number of city residents within the municipal area -Number of agriculture gardens within the municipal areas -Spatial location of the gardens in relation to location of the growers household -Frequency of use (e.g. the definition of gardens and gardeners should reflect meaningful participation (such as criteria for minimum time commitment/time spend). Including gardens where people are only occasional visitors or have low involvement inflates data and distorts impact. <p>Possible additional data:</p> <ul style="list-style-type: none"> -Number (and type) of supporting policies -Number of growers/garden -Costs/fees of garden use. - Urban agriculture gardens surface area available per capita/household (or for different categories of households) -Number of people on garden waiting lists. |
| Unit of measurement (i.e. Percentages, averages, number, etc.) | Number or percentage of city residents |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Information may be disaggregated for specific target groups: low-income populations, slum inhabitants, elderly, migrants, specific ethno-cultural communities vs. newcomers, etc. |
| Possible sources of information of such data | <ul style="list-style-type: none"> -The city department/programme for (urban) agriculture, land use planning, cadastre, parks and gardens department, social development, health -NGOs, institutions |
| Possible methods/tools for data-collection | Data on number of urban agriculture gardens are likely available with different municipal support programmes. Spatial localisation of the gardens will require GIS mapping. Further analysis would require assessment of (supportive) policies, user fees and garden use/functioning. |
| Expertise required | GIS, policy analysis, survey design and administration |
| Resources required/ estimated costs | |
| Specific observations | |
| Examples of application | <p>In 2015, New York City committed in One New York: The Plan for a Strong and Just City to further build a more sustainable, resilient, and just food system where more of its food comes from regional and local growers, producers, and manufacturers. To achieve those goals, New York City is investing in infrastructure to strengthen its regional food system, supporting community based gardening and greening efforts to engage communities around food production, healthy eating, and community development, and encouraging the growth of local food producers and manufacturers to create good job opportunities in the food sector. As part of its Food Metrics Reporting, the city of New York monitors a set of related indicators, including the Number of registered community gardens on city-owned property. See: http://www1.nyc.gov/assets/foodpolicy/downloads/pdf/2017-Food-Metrics-Report-Corrected.pdf</p> <p>The city of Quito (Ecuador) set of its Urban Agriculture programme in 2002. The city monitors: Location of the urban agriculture gardens supported, surface area, type of gardens, number and type of users, production systems applied, technologies used and product destination.</p> |

Rationale/evidence

The Milan Urban Food Policy Pact acknowledges that urban and peri-urban agriculture offers opportunities to contribute to synergies across food security and nutrition, ecosystem services and human well-being. Urban agriculture gardens are important green spaces and offer a myriad of environmental, economic and social benefits such as providing fresh products and plants as well as contributing to a sense of community and connection to the environment, providing an opportunity for satisfying labour, improving neighbourhood, air quality, bio-diversity, contributing to air cooling, and the well-being of residents and neighbourhoods.

Urban agriculture gardens contributes to household and community food security, allowing citizens to grow their own food, share, sell or to donate what they have grown. Urban agriculture gardens are one (complementary mechanisms) that may help increase accessibility for fresh food in local neighbourhoods.

Urban agriculture gardens are also promoted for stronger community cohesion, integration of migrant populations and for providing income and jobs where growers produce for the nearby market. Urban agriculture gardens provide other social benefits, such as the sharing of food production knowledge with the wider community and safer living spaces. Other benefits include mental or physical rehabilitation and therapy, as well as teaching a set of skills for job-related placement. Urban agriculture gardens may also be used for educational and recreational purposes.

One strong tradition in gardening in urban areas is cleaning up abandoned vacant lots and turning them into productive gardens. Alternatively, urban agriculture gardens can be seen as a health or recreational amenity and included in public parks, similar to ball fields or playgrounds. Historically, urban agriculture gardens have also served to provide food during wartime or periods of economic depression. Access to land and security of land tenure remains a major challenge for community gardeners.

This indicator specifically looks at accessibility of different types of city residents to different forms of urban agriculture gardens (municipal land, school gardens, allotment gardens, individual and institutional gardens). These urban agriculture gardens can be located on publicly-owned land or on private/institutional land through an agreement between the municipality and the land owner.

The indicators prioritises assessment of accessibility over mere availability of urban agriculture gardens per X number of residents. After all, there are many situations where gardens exist, but people cannot access them due to cost, mobility or lack of adaptations for people with physical disabilities. Amongst others, the location of an urban agriculture gardens may be a critical factor in determining accessibility: how often a garden is used and who visits it. Exposure to a garden is much more likely for individuals if they are able to walk or drive to the location, as opposed to public transportation. The length of travel time is also a factor. Those who live within a 15-minute or less travel distance are more likely to visit an urban agriculture garden as compared to those with a longer travel time¹. Such statistics should be taken into consideration when choosing a location for these gardens for a target population. Spatially locating the urban agriculture gardens in the city will also allow for relating availability to specific type of target groups (e.g. low-income populations, elderly, migrants). All these aspects need to be considered in data collection and interpretation (limitations of data) to determine barriers to gardening in people who wish to garden.

Urban agriculture gardens, publically or privately owned, are to a large extent impacted and governed by policies at the city level. Urban agriculture gardens may compete with the interests of developers.

¹ Blaine, Thomas W.; Grewal, Parwinder S.; Dawes, Ashley; Snider, Darrin. 2010. "[Profiling Community Gardeners](#)". 48 (6). Archived from [the original](#) on 5 May 2016.

In particular, zoning laws strongly impact the possibility of urban agriculture gardens. Policies can be enacted to protect urban agriculture gardens from future development. For example, New York State reached a settlement in 2002 which protected hundreds of community gardens which had been established by the Parks and Recreation Department GreenThumb Program from future development. In Rosario, Argentina, over 18 hectares of community garden parks are zoned by the Municipality and support (inputs, training, technical assistance, market outlets) is provided by the city's Urban Agriculture Programme to community growers.

Information on policies for allocation of gardens/plots and on costs (user fees) will provide further insight on the level of access for specific residents.

Glossary/concepts/definitions used

Urban agriculture gardens are defined as any gardens/areas of agricultural land within the municipal boundaries (Note that different cities may use different concepts and definitions for urban, sub-urban and peri-urban agriculture that may or may not fall within this concept). There are different types of urban agriculture gardens. Common types include:

- **Community gardens**, involving "any piece of land gardened by a group of people, utilising either individual or shared plots on private or public land". They are publicly functioning in terms of ownership, access, and management, as well as typically owned in trust by local governments or not for profit associations. Community gardens vary widely throughout the world. In North America, community gardens range from familiar "[victory garden](#)", areas where people grow small plots of vegetables, to large "greening" projects to preserve natural areas, to tiny street beautification planters on urban street corners (depending on local context cities may denominate these as nature gardens, pollination gardens, rain gardens).
- In the UK and the rest of Europe, community gardens or closely related "[allotment gardens](#)" which can have dozens of plots, each measuring hundreds of square meters and rented by the same family for generations. In the developing world, commonly held land for small gardens is a familiar part of the landscape, even in urban areas, where they may also function as [market gardens](#).
- **Micro-gardens** allow for use of small and built-up spaces (rooftops, backyards, patios, vacant patches of land along roadsides or waterfronts) to grow leafy vegetables, tubers and herbs and small animals².

Preparations

Staff/ organisations responsible for data collection and analysis should agree on type of data and level of analysis required or desired: will collection and analysis be limited to collecting data on the number of urban agriculture gardens for example, or will further data collection and analysis also be done on spatial location, support policies and garden functioning/performance? Once objectives are agreed upon, the methodological guidelines should be shared with the team responsible, and methodology, operational plan/time schedule/commitments, and reporting agreed upon. Spatial localisation of the gardens requires city maps and GIS; analysis of the functioning of the gardens will require development of survey guidelines.

Sampling

Data can be collected for the entire city or for specific low-income areas if reaching these target groups is a specific policy priority.

² The City of Antananarivo (Madagascar) urban agriculture programme aims at tackling food insecurity through the creation of micro gardens in low income neighbourhoods. So far, the programme has spread to 24 districts and reached 15,000 beneficiaries. See for a short video: https://www.youtube.com/watch?time_continue=142&v=tRnAcaNEAaw

Data collection and data disaggregation

Data on the total number (and type) of urban agriculture gardens are probably available with different municipal programs and departments (urban agriculture program, parks and gardens, cadastre and land use).

Spatial localisation of the gardens will require GIS mapping. Guidelines on such GIS mapping can be found in the Methodological Guidelines for Indicator 27 *Surface area of (potential) agricultural spaces within the municipal boundary*. Gardens can be localised in different areas of the city and/or in relation to residence locations of grower households.

Further analysis could involve assessment of number and type of (supportive) policies, user fees and garden use/functioning. Policy analysis would entail analysis of land use and zoning policies, urban agriculture and garden, or social support policies and programmes (financial support, input supply, training, technical assistance). Such policy analysis could be done in conjunction with data collection and analysis on Indicator 26 *Presence of supportive municipal policies that allow/promote agriculture production and processing within the municipal area*.

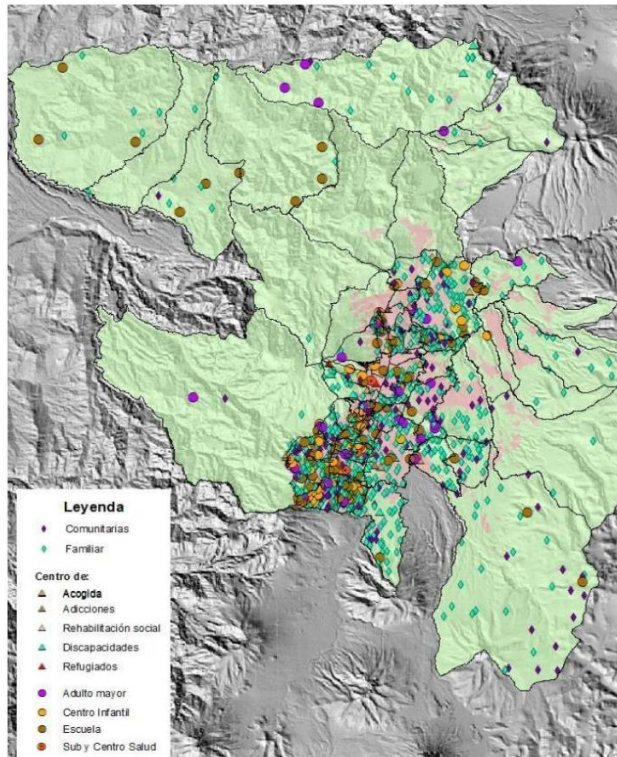
Data on the functioning of the gardens, land use/lease arrangements and user fees, number and type of growers involved, products grown and destination and social, economic and environmental impacts, etc. can be collected through garden surveys. A recently released [report on urban agriculture indicators](#) for Toronto may provide a source of inspiration. The listed indicators form the basis for how urban agriculture activity can be measured and tracked in a Toronto specific context. The indicators outline ways to measure the social, economic, health, and environmental benefits of growing food in the city.

Data analysis/calculation of the indicator

Dividing the total number of municipal support urban agriculture gardens by the total number of city residents will provide the metric for this indicator.

Spatial localisation of urban agriculture gardens on a GIS map will allow for further determining both availability and accessibility of specific resident groups to the urban agriculture gardens. Where access by citizens to urban agriculture gardens is low, a map can be drawn on priority neighbourhoods for future establishment of new gardens. This can be cross-checked with the vacant and available agricultural and open area in the city (see respective indicator 27 *Surface area of (potential) agricultural spaces within the municipal boundary*).

The city of Quito localises the urban agriculture gardens supported by the Municipality on a map. Coverage in rural areas in the Metropolitan Districts is sought to be expanded.



Location of urban agriculture gardens supported by the Quito AGRUPAR programme (2017)

The city of New York identified priority neighbourhoods to make affordable, nutritious food more accessible to all New Yorkers. The map below reports on the (lack of) presence of grocery stores. Similar maps can be drawn for the presence of urban agriculture gardens.



Map of priority neighbourhoods, New York City, Food Metrics Report 2017.



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Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 26: Presence of municipal policies and regulations that allow and promote agriculture production and processing in the municipal area

MUFPP framework of actions' category: Food production

The indicator assesses the presence of supportive municipal policies and regulation that allow and promote urban and peri-urban agriculture production and processing. It will help define gaps or areas for improvement by revising/formulating new policies and regulations.

Overview table

| MUFFP Work stream | Food production |
|---|---|
| MUFFP action | <p>Promote and strengthen urban and peri-urban food production and processing based on sustainable approaches and integrate urban and peri-urban agriculture into city resilience plans.</p> <p>Protect and enable secure access and tenure to land for sustainable food production in urban and peri-urban areas, including land for community gardeners and smallholder producers, for example through land banks or community land trusts; provide access to municipal land for local agricultural production and promote integration with land use and city development plans and programmes.</p> |
| What the indicator measures | <p>The indicator assesses the presence of supportive municipal policies and regulation that allow and promote urban and peri-urban agriculture production and processing. It will help define gaps or areas for improvement by revising/formulating new policies and regulations.</p> <p>Note that the mere presence of policies in itself will not enhance urban and peri-urban agriculture production and processing if such policies are not implemented or enforced.</p> |
| Which variables need to be measured / what data are needed | <p>Information to be collected on:</p> <ul style="list-style-type: none"> -Number and type of policies and regulations, -Level of implementation and enforcement, and -Information and communication. |

| | |
|--|--|
| Unit of measurement (i.e. Percentages, averages, number, etc.) | Metrics include: -Number (and types) of policies and regulations -Number (and types) of information and communication mechanisms and target groups |
| Unit(s) of Analysis | -Urban and peri-urban agriculture production units/enterprises -Urban and peri-urban agriculture processing units/enterprises |
| Possible sources of information of such data | -Self-assessment among representatives participating in the coordination body. Possibly validated by assessment of external actors. -Policy review and analysis (relevant government departments including agriculture, land use and planning, legal office, food safety, health, economic development. Previous research). |
| Possible methods/tools for data-collection | -Group discussion for self-assessment, most likely the cheapest approach -External evaluation -Ad hoc surveys to capture opinions of stakeholders and target groups -Key informants interviews |
| Expertise required | Policy formulation |
| Resources required/ estimated costs | |
| Specific observations | Any self-assessment is by nature not objective. This self-assessment first and for all seeks to enable a joint learning process of stakeholders involved and enable the revision and improvement of the municipal policies. Furthermore, collecting and analysis of information done collectively contributes to a capacity <u>development process</u> . |
| Examples of application | London (UK) incorporated urban agriculture in the London Development Plan which commits the city to support urban agriculture especially in locations near food-insecure and vulnerable urban communities, and obliges local authorities to include space for urban agriculture in local spatial planning (London Assembly 2010). Dar es Salaam (Tanzania) accepted urban agriculture (crop and livestock) as a major urban land use and included urban agriculture in land use zoning and the Strategic Urban Development Plan. Baltimore (USA) adapted its zoning regulations and included commercial urban agriculture as a conditional permanent land use category (urban agriculture defined as the cultivation, processing and marketing of food within the city: horticulture, animal husbandry, aquaculture, agro-forestry, vineyards and wineries). Minneapolis (USA) supports affordable land ownership and/or affordable long-term leases for small enterprise urban agriculture on various types of land and rooftops (Minneapolis-DHFS 2009). It also established a food business development centre that provides start-up funds, such as low-interest matching loans, and access to technical assistance tailored to starting entrepreneurs and cooperative food initiatives ¹ . |

Rationale/evidence

The UN Habitat New Urban Agenda (October 2016) emphasises the need for cities to ‘strengthen food system planning’ and recognises that dependence on distant sources of food and other resources can create sustainability challenges and vulnerabilities to supply disruptions. The agenda includes a commitment to: ‘Support urban agriculture and farming, in order to build a more localised food system...’.

In the same line, the City of Milan under its Food Policy Priority n°1: Guaranteeing healthy food for everybody, Guideline 1.3 states that: “The Municipality shall actively work to promote and facilitate various forms of urban agriculture and horticulture, as well as the establishment and consolidation of

¹ Baker L. and H. de Zeeuw, 2015. Urban food policies and programmes. In: Drechsel and De Zeeuw (ed). Cities and agriculture-Developing resilient urban food systems, 2015. Earthscan-Routledge London and New York.
<http://www.ruaf.org/urban-food-policies-and-programmes-overview>.

networks and activities for creating social inclusion and providing food to the vulnerable population". Under Priority n°2: Promote the sustainability of the food system, Guideline 2.1 it states that: "The Municipality shall facilitate access to land through its institutional instruments, the co-promotion of specific services (e.g. mortgage credit, local land trusts, public lands, etc.) and the spread of multi-functional agriculture that contribute to the objectives set out here".²

Commercial urban and peri-urban agriculture production and the development of various types of commercial to social urban and peri-urban agriculture enterprises offer (new) opportunities for job and revenue creation for different actors in the food chain. Innovations are found in the development of new catering concepts (e.g. a restaurant or food shop using produce from the region), new product concepts (e.g. local product varieties or recipes) and new production-marketing concepts (e.g. restaurants growing part of their own food and urban farms selling produce on-farm).

Public policy can encourage such entrepreneurs through financial and public policy support. City governments can use a variety of policy and support instruments that focus on enabling affordable access to land, infrastructure, training and technical assistance, incubation funding and network creation to establish appropriate linkages with relevant public, private and civic societal actors. Communication and education, direct implementation or support to urban and peri-urban agriculture projects (production and/or processing) and provision of business support services (including granting access to land, markets, infrastructure and resources, but also encompassing training and advice) are complementary strategies delivered by many of these governments. These include legal and regulatory instruments, such as setting of procurement standards and targets (as done in Rome, Malmo and Ecuador), 'green' building regulations, zoning and agricultural land protection (as done in Toronto, Rosario and Belo Horizonte). Cities can enable access to or temporary use of public or private land and actively protect agricultural and open land for food production through land use zoning. Food growing areas, such as rooftop growing, community gardens, allotment gardens, can be made mandatory in new or renovated housing settlements and building projects. They also include financial instruments (like public or public-private investment funds, taxes and subsidies). The Toronto Enterprise Fund for example is a unique funding partnership between a not-for-profit network of community organisations and three levels of government. It supports and finances 'social enterprises'. Brasilia FD (Brazil) operated the PROVE programme that assisted urban producer groups to establish value adding enterprises by providing organisational and legal support, land, infrastructure, technical and business development advice and marketing support (e.g. establishing brands, farmers markets). Public investment in food transport and storage, marketing, waste management and provision may further stimulate urban food system enterprises development³.

As for any policy and regulation, level of implementation and enforcement will determine actual effectiveness. Information and communication on the policies and regulations are also key in this regard.

² Milan 2015-2020 food policy guidelines

<http://mediagallery.comune.milano.it/cdm/objects/changeme:71638/datastreams/dataStream3943587268670669/content?1482924699146>

³ See footnote 1. See also: RUAF Foundation, 2015. SMEs and sustainable urban food provisioning. RUAF Foundation and SUPURBFOOD. <http://www.ruaf.org/publications/smes-and-sustainable-urban-food-provisioning> and Dubbeling M., J. Carey and K. Hochberg, 2016. The role of private sector in city region food systems. RUAF Foundation, F&BKN and IWMI/ WLE.

<http://www.ruaf.org/sites/default/files/Private%20sector%20engagement%20in%20city%20region%20food%20systems%20Analysis%20report-final%282%29.pdf>

Glossary/concepts/definitions used

A **policy** can be described as a course of action adopted by government (business or organisation) to induce certain changes in the decisions and behaviour of actors in that society in order to achieve certain goals⁴.

A policy is also defined as the sum total of government, economic or business actions, from signal of intent to final outcomes (Adapted from Understanding Public Policy. Theories and Issues, Paul Cairney)

A policy is a set of ideas or plans that is used as a basis for making decisions, especially in politics, economics, or business (Collins Dictionary).

A **regulation** is a law, rule, or other order prescribed by authority, especially to regulate conduct.

Municipal policy instruments. Cities have different policy instruments available including legal/regulatory, economic/financial, communicative/educative and urban design instruments.

- **Legal or regulatory instruments:** The logic underlying legal instruments is that actors (such as citizens or industries) can be forced to adopt a certain desired behaviour through legal norms and regulations (like norms, laws, bye-laws, ordinances, etc.) and that it is possible to control whether these actors adhere to the given rules and norms. Actors who do not adhere to the rules will be sanctioned. An alternative legal instrument to issuing general bye-laws, norms and regulations, is the contract or covenant. The government and certain actors sign an agreement in which the social actors (e.g. urban farmers' organisations) agree to adhere voluntarily to certain norms and regulations, often in exchange for certain support by local government or other organisation (e.g. access to municipal land, obtaining a license for processing, technical support, etc.).
- **Economic/financial instruments:** The logic behind the application of economic instruments is the assumption that social actors will adopt a certain desired behaviour if this gives them some economic gains (or losses if they continue with the undesired behaviour). Local governments for example may grant tax incentives or subsidies if actors adopt the desired behaviour or levy special taxes for undesired behaviour (similar to the levy on cigarettes or alcohol). Such economic instruments also need a legal basis (see above), but the essential element here is not the law itself but the economic incentive or loss that orients (or is supposed to orient) a certain behaviour.
- **Communicative/educative instruments:** The assumption behind the use of communicative/educative types of instruments is that people will adopt a certain desired behaviour if they are well informed about the positive effects of the desired behaviour as well as the negative effects of the undesired behaviour. Accordingly, information, education and persuasion tools (media programmes, extension visits, training courses, leaflets, websites, etc.) will be applied to make people understand the importance of the desired change and to assist them in the change process. Related to urban agriculture, a municipality may provide technical training to urban producers and processing enterprises. Communicative/educative instruments are often used complementary to the other policy instruments mentioned, since the lack of an adequate communication and education strategy may strongly reduce the effectiveness of the other policy instruments used.

⁴ See footnote 1.

- **Urban design instruments:** The logic behind urban design instruments is that actors will adopt a certain desired behaviour if their physical environment has been designed in such a way that they are more or less automatically prompted to act a certain way: for example if public dustbins are widely available, generally people will throw less waste on the street. Examples related to urban agriculture are zoning (setting aside and protecting certain areas of the city for agriculture), combining or separating certain land uses depending on the degree of conflict/synergy, inclusion of space for home or community gardening in social housing projects, etc. Several cities have included land designated for urban agriculture in their urban land use plan, housing or in slum upgrading projects.

Urban and peri-urban agriculture enterprises engaged in production or processing include organisations that have a core strategy and mission to engage in economic, entrepreneurial activities through the production of goods, provision of services and/or marketing in the food system. It excludes non-governmental organisations, governments and civil society organisations.

Preparations

The following preparations refer to a self-assessment exercise:

1. In case a interdepartmental coordinating body exists: inclusion of an agenda item on monitoring food governance indicators on the agenda of one of the meetings of the interdepartmental/sectoral coordination body. During this meeting all governance related indicators (1-6) can be jointly discussed by all members of the coordinating body. The monitoring guidelines can be shared with all involved prior to the meeting.
2. In case such body does not exist: the indicator can be reported on by the contact person in the city for urban food policies and the Milan Pact. This person may decide to discuss the indicator and scoring sheet with other stakeholders involved in the formulation and implementation of urban food strategies/policies/projects and action plans. The exercise may contribute to a (future) reflection and planning process on the importance, role and set up of such a coordinating body.
3. The internal self-assessment can be validated with selected external stakeholders, especially where mechanisms of information sharing are concerned.

In case other evaluations methods are selected (external evaluation, key informant interviews) respective preparations should be taken.

Sampling

In case of a self-assessment exercise and if an interdepartmental coordinating or multistakeholder food body exist: Preferably all representatives in the coordinating body should participate in the monitoring exercise. They should collectively fill in the scoring sheet provided below.

In case such body does not exist: representatives from all relevant government departments, e.g. agriculture, land use and planning, legal office, food safety, health, economic development should be involved.

In addition, a randomly sampled number of external stakeholders (NGOs and academic organisations working in urban and peri-urban agriculture and enterprise development) and target groups (producers and processors) could be engaged in a participatory analysis of existing policy instruments, gaps and opportunities/needs for improvement.

Data collection and data disaggregation

During a monitoring/review meeting the following scoring sheet can be discussed and filled. Individual members may first want to make their own assessment before discussing this in a larger group. Alternatively, a facilitator could guide group discussion from the start and facilitate the assessment in an interactive and participatory way. Specific observations made during the meeting (for example on levels of consensus or differences in opinions and scores) can be added in the final column and used for future reference or further discussions. Also recommendations for improvement can be added here.

Scoring sheet

| Characteristics | Self-assessment and scoring | | | Total score | Disaggregation of information | Specific observations/recommendations |
|--|-----------------------------|---------------------|--------------|-------------|---|---------------------------------------|
| Presence of municipal policies and regulations that allow and promote urban and peri-urban agriculture production and processing | Yes =1 point | No=0 points | | | -Number and type of policies and regulations -Add the policy documents and summarise their content -Distinguish for different types of polices | |
| | | | | | | |
| Level of implementation: is the municipal policy/implementation actually implemented or enforced? | Yes, completely = 2 points | Partially = 1 point | No= 0 points | | -Discuss for each of the policies or regulations. -Indicate reasons for partial or non-implementation -Indicate what stakeholders are (or should in future be) engaged in <u>implementation</u> | |
| | | | | | | |
| Information and communication: Information and communication on the (various) policies and regulations is widely shared within the city government and potential beneficiaries | Yes, completely = 2 points | Partially = 1 point | No= 0 points | | Number and type of information and communication mechanisms and target groups | |
| | | | | | | |

Note: It may be relevant to further critically assess the one or more municipal policies themselves in order to highlight areas of improvements of the actual policy. The analysis table provided in the guidelines for Indicator 3 *Presence of an urban food policy, strategy or action plan* may be used as a framework to do so.

Data analysis/calculation of the indicator

Based on the scoring and further (disaggregated) information provided, participants in the monitoring/review meeting may identify gaps or areas for strengthening or improvement:

- How can the existing policies be better implemented, funded and communicated?
- What changes in the existing policies are proposed? Or what steps can be taken to elaborate a new policy?
- What is the likelihood of success of the proposed changes?
- What process should be followed to implement these changes? Steps to be taken? Stakeholders to be involved? Critical time-lines? Resources required?
- Which lobbying strategies should be put in place, by whom and when??

The self-assessment exercise can be repeated once a year to monitor uptake of agreed improvements/changes.

References and links to reports/tools

Godoy Garraza, G. y M. Manzoni, 2012. Agricultura familiar y acceso a la tierra urbana y periurbana : marco normativo y estrategias jurídicas. 1a ed. - Jujuy : Ediciones INTA, 2Argentina. Report accessible in Spanish from: <https://inta.gob.ar/documentos/agricultura-familiar-y-acceso-a-la-tierra-y-urbana-y-periurbana>



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Milan Urban Food Policy Pact Monitoring Framework

March 2021 version

Indicator 27: Surface area of (potential) agricultural spaces within the municipal boundary

MUFPP framework of actions' category: Food production

The indicator monitors the surface area of land within the municipal boundary used for agriculture, zoned/destined for agriculture (although possibly not used at this moment) as well as open vacant and built up spaces that could potentially be used for agriculture.

Overview table

| MUFPP Work stream | Food production |
|--|--|
| MUFPP action | <p>Apply an ecosystem approach to guide holistic and integrated land use planning and management in collaboration with both urban and rural authorities and other natural resource managers by combining landscape features, for example with risk-minimizing strategies to enhance opportunities for agroecological production, conservation of biodiversity and farmland, climate change adaptation, tourism, leisure and other ecosystem services.</p> <p>Protect and enable secure access and tenure to land for sustainable food production in urban and peri-urban areas, including land for community gardeners and smallholder producers, for example through land banks or community land trusts; provide access to municipal land for local agricultural production and promote integration with land use and city development plans and programmes.</p> |
| What the indicator measures | The indicator monitors the surface area of land within the municipal boundaries used for agriculture, zoned/destined for agriculture (although possibly not used at this moment) as well as open vacant and built up spaces that could potentially be used for agriculture. It seeks to spatially locate these areas and use these data for future land use planning, preservation and protecting of agricultural lands from (unplanned) urban growth, while securing user rights for farmers and maintaining important services such as local production, urban water quality and supply, and flood retention (or other reduced climate risks). |
| Which variables need to be measured / what data are needed | Data on: -Surface areas -Spatial location -Land ownership, accessibility, use, suitability and feasibility. |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Surface area in m ² |
| Unit(s) of Analysis (i.e. people under 5 years old, ect.) | <ol style="list-style-type: none"> Land used for agriculture, Land is zoned/destined for agricultural use, although the land may actually not currently be used |

| | |
|---|--|
| | 3. Potential agriculture growing spaces |
| Possible sources of information of such data | -The city department/programme for (urban) agriculture, land use planning, cadastre, parks and gardens department. -Cadastral maps, satellite and aerial images. |
| Possible methods/tools for data-collection | GIS mapping and field observations |
| Expertise required | Analysis of satellite and aerial images, GIS, agronomy |
| Resources required/ estimated costs | |
| Specific observations | |
| Examples of application | A 2015 study from the University of Wisconsin in Madison used a combination of ArcGIS mapping and field visits to generate a community garden site suitability index that sorted and inventoried undeveloped land potentially available for community gardens ¹ . |

Rationale/evidence

Rapid urbanisation, building up remaining agricultural and open spaces within the city and extending into peri-urban and rural areas, is challenging traditional approaches to food and nutrition security, as well as traditional thinking on how cities are fed. Urban expansion goes hand in hand with an increase in the demand for natural resources (land, water), which provide vital food and ecosystem services to cities, as well as with increased challenges in terms of economic efficiency, land use and land rights. Large scale conversions of agricultural land to non-agricultural uses have caused, and may also cause in the future, problems in cities and rural areas with regards to drainage systems and flood retention, disruption of the drinking water supply, temperature increases, environmental pollution, and increased vulnerability to disruptions in safe and nutritious food availability and supply, especially in areas affected by climate change.

Cities are beginning to realise the importance of preserving and protecting vacant and agricultural areas, and are starting to influence planning policy to protect or enable the use of these areas for localised food production), but also to preserve and protect agricultural areas with views to climate change adaptation (mitigation increasing urban temperatures, enhancing storm water infiltration) and other social and environmental benefits. In many cases, this is coupled with efforts both to enhance the access of (vulnerable) urban consumers to sufficient, healthy, and safe food as well as to improve the livelihoods of urban, peri-urban and rural small-scale and family farmers².

Calculation of available agricultural surface area within the municipal boundaries requires agricultural land use mapping (through GIS and field observations). Such land use mapping can be undertaken in order to:

1. Identify the locations and surface areas where various types of agricultural activities are undertaken in the municipal area (e.g. **land used for urban and peri-urban agriculture**),
2. Identify the locations and surface areas where **land is zoned/destined for agricultural use**, although the land may actually not currently be used
3. Identify locations and surface area of **potential agriculture growing spaces** in the municipal area (including vacant open spaces, rooftops, parks, road sides) and classification of their accessibility,

¹ Eanes, Francis and Ventura, Stephen J. (2015) "Inventorying Land Availability and Suitability for Community Gardens in Madison, Wisconsin," Cities and the Environment (CATE): Vol. 8: Iss. 2, Article 2.
<http://digitalcommons.lmu.edu/cgi/viewcontent.cgi?article=1166&context=cate>

² Dubbeling M., C. Bucutariu, G. Santini, C. Vogt and K. Eisenbeiß, 2016. City region food systems and food waste management- Linking urban and rural areas for sustainable and resilient development. GIZ, RUAF Foundation and UN FAO. Bonn and Eschborn. <http://www.ruaf.org/publications/city-region-food-systems-and-food-waste-management-2016>

suitability, current use and feasibility for agriculture according to a number of criteria. This will enable to increase the access of the city residents to available and suitable spaces for food production, processing and marketing.

Note that land used or zoned for agriculture or land that can potentially be used for agriculture can be land that is publically owned, or owned by private land owners/institutions. Different land use arrangements may also have been put in place (ownership, lease arrangements). Cities can decide to focus on specific ownership types or other land use categories depending on data availability and political priorities.

Surface areas may be deducted from desk analysis of land registers, maps and images. However, information on location and characteristics of these areas will be needed for further land use planning.

Preferably, information should also be collected and “mapped” on other socio-economic and environmental variables so that different data sets can be studied in relation to each other, for example: poverty/malnutrition rates in specific neighbourhoods, sources of contamination (main roads, industry), areas where wastewater or solid waste is recycled or marketing takes place (to locate agricultural production close to these areas for example), etc.

Ideally, agricultural land use mapping would not only be undertaken by the city but also by communities in their own areas. This would help them look at their surroundings with new eyes and see new possibilities. It may yield information that can be useful to them in their communities. And it will mean that the community context is either already known or easier to find out. Data collected by communities could be aggregated by the city for the entire municipality.

Glossary/concepts/definitions used

Land **zoning** involves the regulation of the use and development of specific areas of land. It concerns the process of dividing land in a municipality into physical districts, or zones, according to the present and potential use of the properties in each zone, and then allows or prohibits certain types of land uses within certain zones (e.g. residential, industrial, agricultural). The type of zone determines whether planning permission for a given development is granted. Zoning may specify a variety of conditional uses of land. It may also indicate the size and dimensions of land area as well as the form and scale of its land use. These guidelines are set in order to guide urban growth and development. Thus, zoning is a technique of land use and urban planning. Legally, a zoning plan is usually enacted as a by-law with the respective procedures.

Zoning can have a variety of impacts on the urban food system. For example, some zoning codes might prohibit commercial agriculture in residential zones, making it impossible to have community gardens or urban farms that seek to sell (part of) their produce in those areas. Zoning rules might also have an impact on the food system by not listing certain activities, such as food sales, as a legal commercial activity in certain zones, which would make selling food, such as at a farm stand, illegal. Zoning rules might also say what kinds of structures are allowed, which could exclude the construction of greenhouses. In addition, zoning might set limits on which animals, such as chickens or bees, can be kept in specific areas³.

Vacant spaces: Open non-built up areas that could potentially be used for agriculture including for example open green spaces like urban parks, roadsides, flood zones, areas below electricity lines and

³ Although comprehensive plans and zoning are the most common forms of land use regulation, cities can use other legal mechanisms that can be used to protect land for food production either within or surrounding the municipality. In addition to planning and zoning, agricultural land may be protected through land trusts and conservation easements. See for some USA examples: https://www.chlpi.org/wp-content/uploads/2013/12/good-food-good-laws_toolkit-10.23.2017.pdf

peri-urban greenbelts.

Built-up spaces: The 'Built-up area' of a city is defined as the contiguous area occupied by buildings and other impervious surfaces. It includes areas already built upon (buildings, hardened surfaces) that could be used for agriculture production using specific production technologies, such as rooftop gardening; use of planting boxes, etc.

Land **accessibility** refers to the agricultural land use possibilities or limitations related to physical and legal/planning access to a specific area of land (ownership, tenure and user rights, land prices, planned land use).

Agricultural land use **suitability** helps to understand if a given area of land allows for agricultural production based on its agronomic characteristics and limitations.

Agricultural land **feasibility** (or **adequacy**) relates to issues like protection from theft, relative location in relation to households, to markets or input supply.

Preparations

A meeting should be organised with all staff that will be involved in this activity in order:

- To familiarise them with land use mapping and these methodological guidelines (why, what, when, how)
- To agree on the objectives of the monitoring exercise and the type of data and information to be collected
- To define the methodology to be applied for data collection and analysis
- To agree on work planning: who will do what, when and how; required and available means,
- How to coordinate these activities.

Counting with the following basic information will help further data collection and analysis:

- City history development, changes and trends in land use (loss of agricultural land and ecologically valuable land as a result of urban expansion in the past 5-10 years; rate of city expansion and direction of urban growth, new urban projects and plans)
- Municipal boundaries, general urban and zoning plan, land use categories and maps, normative and legal framework regarding land tenure and use, soil regulations in different areas (see also Indicator 26. *Presence of municipal policies and regulations that allow and promote urban and peri-urban agriculture production and processing*).
- Location of different neighbourhoods, green, residential and industrial areas, main infrastructure and water sources
- Location of agricultural and vacant land areas that can potentially be used for agriculture.

This information and data is generally available from statistical, cartographic and cadastral data sources available in different municipal departments (Cadastre, Urban Planning, Public Services and Works, Parks and Green Areas, etc.).

Finally, if beyond mere surface areas, spatial, location, land accessibility, suitability, use and feasibility will be assessed, agreement should be reached on concepts used to ensure homogenous analysis by different members of the monitoring team.

Sampling

Data can be collected for the entire city (municipal boundaries) or for specific low-income areas if reaching these target groups is a specific policy priority.

Data collection and data disaggregation

Surface areas of agricultural land used, zoned or potentially available could be calculated from desk research only (analysis of land use registers, maps and zoning plans; analysis of satellite/aerial images). Spatial localisation of agricultural land will however require further GIS mapping.

1. Analysis of land registers, maps and images

Where information on surface areas of agricultural land is not available in land registers (cadastre for example), up-to-date maps, satellite images and aerial photos (available from Google Earth) can be used for data collection and spatial localisation. Take the most up-to-date available set of aerial photographs or satellite images on a scale of 1:2.500- 1:12.500 (if available) to allow for a clear and high resolutions of the images. The team may decide to only identify surface areas larger than 1000 m² because of logistical and technical reasons (difficulty in studying very small areas; smaller areas change use more frequently).

The team should agree on the different land categories to be surveyed:

- (1) Land already used for different types of agriculture (crop production, tree production, livestock, aquaculture),
- (2) Land zoned/destined for agriculture: this includes areas that are destined, but not actually used for agriculture
- (3) Open or vacant land areas that can potentially be used for agriculture
- (3) Built-up areas such as rooftops, park areas, road, railway and water borders where agriculture can be integrated into (multifunctional) land use.

Digitising information collected in GIS maps will allow for further data analysis and future actualisation of information.

2. Field observations

Once the different land categories and areas are mapped, selected areas can be visited for ground verification through field observations as well as to allow for further data collection on land accessibility, suitability, use and feasibility.

Areas can be selected on the basis of the following criteria:

- Large(r) surface areas
- Their representation for the major types of land areas (land already used for agriculture, zoned, open and vacant areas and built-up that that can potentially be used for agriculture)
- Areas that have the best chance to be maintained as agricultural areas in future (refer to zoning, land use and city development plans)
- Vulnerable (farming) households form a major category of households in the area.

Field observations can include collection of further information to validate the cartographic information and describe land use characteristics (surface area, slope). Location and land use of the areas can be verified by visual observations and measurements. GPS (Geographic Positioning System) techniques can be used to check measurements. Using maps in a scale 1:2000, will facilitate community involvement in spatial identification of areas and validation of information concerning ownership of the site, security of tenure, access to water, past and current land use, safety etc (see further below).

Further analysis could involve assessment of **land accessibility**. Questions that can be asked here include:

- Who owns the land?
- What is its current status (freehold, leasehold, etc.)?

- What are the norms and standards for this area of land (public domain, reserved for development, etc.)?
- Are there any project or planning regulations for the future such as a new road, a garbage dump or the extension of a development?
- What are the physical constraints to accessing this area of land such as topographical constraints (slopes) or hazard prone areas such as risk of flooding?

Land **suitability** can be assessed by answering the following questions:

- What are the land qualities for agriculture? For what kind of agriculture?
- Is it suitable for cultivation? For what kind of products?
- Is water available? In terms of quality and quantity.
- What is the level of contamination of the soil and water sources?

Agronomic field observations (quality and texture of the soil, current vegetative growth, availability of organic matter etcetera) may yield further information.

Current and past uses of the land addresses the social dimension of the mapping and are important to consider even if the land is currently not used for agriculture, or only partially cultivated. Questions that can be asked include:

- What is it being used for?
- What was it being used for before?
- How many people/farmers/families are cultivating today? Who are they? Where do they live?
- What are the farming practices?

Land **feasibility** requires assessment beyond accessibility and suitability. One can look more particularly at the following:

- Is this land safe (from thefts and possible crimes), and is there anything to be done to increase the safety?
- Is the area well-located close to where (potential) growers and farmers live? Are there good transportation systems?
- Are inputs supply and market locations favouring supply and market efficiency?

Data analysis/calculation of the indicator

1. GIS mapping

Spatial localisation of current, zoned and potential agriculture areas can be done using Geographic Information System-GIS (GIS MapInfo or ARCVIEW info Software (or other locally available) packages. Information can be interpreted by local specialised government departments or institute. This will also allow for further determining both availability and accessibility of specific resident groups to these areas (see also Indicator 25 *Number of residents in the city with access to an urban agriculture garden*).

The GIS maps will constitute a tool for urban planners and technical staff to facilitate strategic planning of (agricultural) land areas.

Most larger cities already possess GIS systems or cartographic databases on municipal land use. However, in many cases agricultural land use is not officially considered in land use categories defined by the planning departments and cadastre. In that case, new “thematic maps” (the maps or layers that constitute the basic architecture of the GIS) have to be included to incorporate information on actual and prospective agricultural land use, location, soil classification according to their agronomic characteristics etcetera.

2. Elaboration of prospective land use maps with the community and public actors.

Use of currently vacant open and built-up spaces for future (either temporal or permanent) agricultural use can be analysed and plans made on for example:

- The development of agro-silvo-pastoral practices on areas with limited agronomic capacities,
- The cultivation of ornamental plants in health-risk prone areas,
- The cultivation of specific plants that conserve the soils and combat erosion in coastal areas or on river sides,
- The use of flowers or shadow plants to generate aesthetic environments and attract bird and insect life,
- The production of food plants (vegetables, fruits, etc.) in park and communal areas close to urbanisations.

Information collected may be organised in a format similar to the one below:

| Area of land | | Characteristics | Accessibility | | | Suitability and feasibility | | | Prospective land use |
|-------------------|--|---|---------------|------------------|------------------|-----------------------------|-----------------------|-------------------|----------------------|
| | | | Owner ship | Tenure situation | Planned land use | Quality of the soil | Availability of water | Relative location | |
| 1.Area 1 Location | | Surface area Slope Current land use | | | | | | | |
| 2.Area 2 Location | | | | | | | | | |
| 3.Area 3 Location | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

3. Action planning

Action planning by organisation of separate or mixed focus group meetings with urban farmers and different local government departments (planning, cadastre, parks and green areas, agriculture, housing) will allow to further identify problems and solutions related to for example insecure land tenure and preservation of agricultural land areas, such as policy measures needed to improve security of user rights, inclusion of agricultural areas in municipal land use and zoning plans, etc.

4. Reporting

The results of agricultural land use mapping can be reported by using:

- (GIS) maps that show trends in city development and growth (and loss of agricultural land)
- (GIS) Land use maps that show the location and characteristics of land used and zoned for different agricultural activities as well as the various types of vacant land areas.
- Opportunities & proposals for the agricultural use of vacant and built-up land areas (prospective land use maps),
- Policy measures needed (bye-laws, ordinances, economic and fiscal incentives) to improve secure access and tenure to agricultural or vacant land,
- Possibilities and proposals for integration of agriculture land use in land use, city development and zoning plans.



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Milan Urban Food Policy Pact Monitoring Framework

March 2021 version

Indicator 28: Proportion of total agricultural population –within the municipal boundaries- with ownership or secure rights over agricultural land for food production, by gender

MUFPP framework of actions' category: Food production

The indicator monitors ownership and rights over agricultural land. By specifically promoting data disaggregation by gender, this indicator is particularly useful in terms of framing gender differences in land ownership and control.

Overview table

| MUFPP Work stream | Food production |
|---|--|
| MUFPP action | <p>Apply an ecosystem approach to guide holistic and integrated land use planning and management in collaboration with both urban and rural authorities and other natural resource managers by combining landscape features, for example with risk-minimizing strategies to enhance opportunities for agroecological production, conservation of biodiversity and farmland, climate change adaptation, tourism, leisure and other ecosystem services.</p> <p>Protect and enable secure access and tenure to land for sustainable food production in urban and peri-urban areas, including land for community gardeners and smallholder producers, for example through land banks or community land trusts; provide access to municipal land for local agricultural production and promote integration with land use and city development plans and programmes.</p> |
| What the indicator measures | The indicator monitors ownership and rights over agricultural land. By specifically promoting data disaggregation by sex, this indicator is particularly useful in terms of framing gender differences in land ownership and control. |
| Which variables need to be measured / what data are needed | <ul style="list-style-type: none"> • Total agricultural population within the municipal boundaries • Number of households or people with land ownership and secure rights over agricultural land for food production • Number of women with ownership or rights over agricultural land |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | <ul style="list-style-type: none"> • Percentage of people with ownership/secure land rights as per the total agricultural population • Percentage of women with ownerships/secure rights as part the total of people with ownerships and secure land rights |
| Unit(s) of Analysis (i.e people under 5 years old, ect.) | Data disaggregation by sex: share of men/women among owners or rights-bearers of agricultural land, by type of tenure |

| | |
|---|---|
| Possible sources of information of such data | -Administrative records (cadastre or land registry) -Household and agricultural surveys |
| Possible methods/tools for data-collection | Analysis of administrative records and existing surveys; implementation of new surveys |
| Expertise required | Survey design, implementation and analysis |
| Resources required/estimated costs | |
| Specific observations | |
| Examples of application | This indicator already exists. Until now, the indicator has been collected mainly through livelihood and national household income and expenditure surveys (like FAO and World Bank LSMS-ISA ¹ surveys). The indicator is available for specific countries, but has not been applied yet at city-level. It is also worth mentioning that the importance of a sex-disaggregated indicator on land is acknowledged in the Minimum Set of Gender Indicators approved by UN Statistical Commission, where a place-holder indicator 'proportion of the (adult) population who own land, by sex' figures as one of the 52 indicators. Furthermore, the EDGE (Evidence and Data for Gender Equality) initiative is conducting methodological work on standards for the collection of reliable sex disaggregated data on land ownership. |

Rationale/evidence

The overarching goals of improving the governance of tenure of land and natural resources is achieving food security, shared prosperity and sustainable development, based on the recognition of the centrality of land to food production and the requirement of promoting secure tenure rights and equitable access to land and natural resources for people, communities and others. There is an inextricable link between land access, tenure security on one hand, and equity, income/food security on the other. Many of the poorest and food insecure groups are those with the most insecure land tenure rights, including female headed households, orphans, migrant farm workers, peri-urban slum dwellers, and the internally displaced persons. Secure tenure rights to land and natural resources are a key for poor populations to access the very basic resources that would allow them to develop and sustain their livelihoods². This holds true for both rural as well as urban and peri-urban producers.

In many urban, peri-urban and rural areas of cities, agricultural activities -including animal husbandry, horticulture, aquaculture, fruit production- are practiced in various locations, around the house (backyard, rooftop gardening), in open areas in the city and on peri-urban farms. Food production may take place on private land (owned, leased), on public land (parks, conservation areas, along roads, streams and railways, leased), or semi-public land (schoolyards, grounds of schools and hospitals). Incentives for producers to invest are often compromised by the lack of security concerning land tenure and the fear of eviction. Why erect terraces, improve and fertilise the soil, or build irrigation systems if there are no guarantees that benefits will be reaped from those investments? Studies have shown that the lack of such arrangements is the main obstacle to the development of sustainable food production in urban and peri-urban areas, including land for community gardeners and smallholder producers, with negative effects on women in particular. Land tenure does not mean automatic land ownership. Integration of urban and peri-urban agriculture into city development and land use plans, taxation rules and legal frameworks are therefore necessary to provide security and incentives for producers.

¹ Living Standards Measurement Study-Integrated Surveys on Agriculture. <http://surveys.worldbank.org/lsms/integrated-surveys-agriculture-isa>

² <https://unstats.un.org/sdgs/files/metadata-compilation/Metadata-Goal-1.pdf>

Achieving tenure security at scale, and sustaining this, may require adjustments of policy and legal framework and implementation practice for land administration and land information systems. Cities have explored a variety of arrangements for granting permanent or temporary land access and tenure. Identifying land for food production (see also Indicator 27 *Surface area of potential agricultural spaces in the municipal area*) is often only the first step. If urban growers cannot buy land outright, it is important that they can create an arrangement in order to stay on the land long enough to invest in its productivity. Strategies that can be used include:

- (1) **Support land lease and purchase programs.** Once land has been identified, municipalities can establish programmes to lease city-owned plots to urban and peri-urban growers at a low or reasonable cost. Many cities run garden lease programmes where individuals, families associations and community organisations can lease a plot for a nominal fee or are granted temporary user rights, often based on specific land use agreements. Leases often run for renewable periods of 1-5 years, but do not automatically guarantee security of tenure. New York City's GreenThumb programme, housed within the Department of Parks and Recreation ("DPR"), is the largest community gardening program in the USA, with over 500 city-owned gardens in its network. DPR guarantees the renewal of licenses for gardens on its land; however, gardens are still at risk as the city may revoke a license with 45 days' notice. If the city does revoke a license, it is required to make efforts to relocate the garden. It must provide the licensee with a list of all available city-owned vacant land within one-half mile of the existing garden. The licensee may select any lot from that list as a relocation site.
- (2) **Establish a community land trusts focused on urban farming.** Community land trusts (CLTs) can be used to promote urban agriculture. A CLT is a non-profit corporation committed to ensuring that land is used in the best interests of a community, while using charitable donations to cover its costs. A trust acquires land and maintains ownership of it permanently, which can be helpful in alleviating land tenure issues. The CLT can then lease (or sublease) its property to urban farmers. In Providence, USA, the Southside Community Land Trust has operated for over 30 years, focusing on urban farming. The Trust takes an active role in farming its properties, recruiting community members to farm over a dozen gardens. Among other programmes, the Trust trains beginning farmers in business development and farming practices, and participating farmers become eligible to lease land owned by the Trust³.
- (3) **Establish a land bank** for urban and peri-urban food production. Based on land use mapping, Rosario (Argentina) created a Municipal Agricultural Land Bank (a cadastral-based land registry) and brings those in need of agricultural land in contact with the owners of vacant land. The city also leases vacant land from private landowners to sub-lease it to community groups interested in using the land productively. A third effective instrument used in Rosario is the increase of municipal taxes on idle urban land and reduction of taxes for landowners who make idle land available for farming (temporary or permanent)⁴. Baltimore (USA) also maintains a land bank of available vacant city-owned land and provides such land to commercial small-scale urban farmers in five-year leases (BCPC 2013)⁵.

³ Good laws, good food: Putting local food policy to work for our communities, 2017. Harvard Food Law and Policy Clinic and John Hopkins Centre for a Liveable Future, USA. https://www.chlpi.org/wp-content/uploads/2013/12/good-food-good-laws_toolkit-10.23.2017.pdf

⁴ Baker L. and H. de Zeeuw, 2015. Urban food policies and programmes. In: Drechsel and De Zeeuw (ed). Cities and agriculture-Developing resilient urban food systems, 2015. Earthscan-Routledge London and New York. <http://www.ruaf.org/urban-food-policies-and-programmes-overview>. Viljoen, A., Schlesinger, J., Bohn, K. and A. Drescher, 2015. Agriculture in urban design and spatial planning. In: Drechsel and De Zeeuw (ed). Cities and agriculture-Developing resilient urban food systems, 2015. Earthscan-Routledge London and New York. <http://www.ruaf.org/urban-food-policies-and-programmes-overview>.

⁵ Baker L. and H. de Zeeuw, 2015. Urban food policies and programmes. In: Drechsel and De Zeeuw (ed). Cities and agriculture-Developing resilient urban food systems, 2015. Earthscan-Routledge London and New York. <http://www.ruaf.org/urban-food-policies-and-programmes-overview>.

The indicator “Proportion of total agricultural population with ownership or secure rights over agricultural land for food production, by sex”, is related to the Sustainable Development Goal 1, target 1.4: *“By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.”* It is also related to Goal 5 (Achieve gender equality and empower all women and girls) and Goal 11 (Make cities and human settlements inclusive, safe, resilient and sustainable).

By specifically promoting data disaggregation by sex, it gives a clearer picture of gender and social inequalities in land ownership/control, than for instance looking at the incidence of female ownership/control over land in the entire population of a country or city. An increase in the percentage of women owning/controlling land indicates that, within the population of interest (i.e. the landowners/rights bearers), progress is made towards achieving equal rights over land among men and women.

Glossary/concepts/definitions used

The term **‘agricultural land’** is used to indicate land used for farming, livestock and forestry activities for food production within the municipal area.

The term **‘agricultural population’** is intended in a broad sense – i.e. all including people for whom farming is their principle source of livelihood, or those who practice food production as a complementary livelihood strategy. They can have ownership and rights over land or not.

People use a wide range of strategies to gain **access to land**. These include:

- Purchase
- Adverse possession or prescription (the acquisition of rights through possession for a prescribed period of time). In some countries, this may be the only method for small farmers to gain formal access to vacant or abandoned land and to bring it into productive use.
- Leasing, or gaining access to land by paying rent to the owner
- Sharecropping, or gaining access to land in return for paying the owner a percentage of the production
- Inheritance, or gaining access to land as an heir
- Squatting illegally on land.

Access to land may be granted to individuals or to organised communities and associations of producers.

A **landowner** is the legal owner of the land. Broadly speaking, legal ownership or legal owner-like possession describes land rights that provide statutory security of tenure. This may be done through a formal land title system, but may also include certain forms of customary land tenure arrangements where land rights are registered or certified in some way. The following types of tenure arrangements may be included under this heading:

- Ownership is certified through a title, which gives the individual the right to determine the nature and extent of the use of the land.
- Land is held under conditions that enable it to be operated as if legally owned. E.g., the land is operated under hereditary tenure, perpetual lease, or long-term lease, with nominal or no rent.
- The land is held under a tribal, communal, or traditional form of tenure, which is legally recognised by the state. Such arrangements usually involve land being held on a tribal, village, kindred or clan basis, with land ownership being communal in character but with certain individual rights being held by virtue of membership in the social unit. Such arrangements can

be formalised through the establishment of legal procedures to identify the community's land and to manage the land rights of community members.

Definitions of ownership may vary across countries and surveys. For instance, documented ownership means that ownership is verified through title or deed, while reported ownership relies on individuals' own judgment. Reported ownership may be more appropriate in countries where a formal registration system is not in place. Additionally, and particularly where private ownership of land is not applicable, it is more appropriate to investigate rights over land using proxies able to capture individuals' capability to control and take decisions over the land. This may include settings where customary rights prevail as opposed to individual ownership. Proxies of such "bundle of rights" may include the right to sell, to bequeath or the right to decide how to use the land. Since the definition of ownership and land rights has to take into account what is more relevant in the country, the indicator will need to be complemented with metadata that specify what definition(s) of ownership or rights over land is/are employed.

Land tenure: The arrangements or rights under which people, communities and others gain access to land, fisheries and forests is defined and regulated by societies through systems of tenure. Land tenure refers to laws, policies, customs and institutions that define and govern people's rights to use, control and transfer land⁶. These tenure systems determine who can use which resources, for how long, and under what conditions. The systems may be based on written policies and laws, as well as on unwritten customs and practices. Tenure systems increasingly face stress as the world's growing population requires food security, and as environmental degradation and climate change reduce the availability of land, fisheries and forests. Inadequate and insecure tenure rights increase vulnerability, hunger and poverty, and can lead to conflict and environmental degradation when competing users fight for control of these resources.

The FAO World Census of Agriculture encourages to use four country-specific types of tenure whilst ensuring the possibility to classify ex-post under the following broad categories:

- 1) Legal ownership or legal owner-like possession;
- 2) Non-legal ownership or non-legal owner-like possession;
- 3) Rented land from someone else;
- 4) Various other types of land tenure.

Security of tenure is the certainty that a person's rights to land will be recognised by others and protected in cases of specific challenges. All forms of tenure should provide all persons with a degree of tenure security, with states protecting legitimate tenure rights, and ensuring that people are not arbitrarily evicted and that their legitimate tenure rights are not otherwise extinguished or infringed. People with insecure tenure face the risk that their rights to land will be threatened by competing claims, or even lost as a result of eviction.

Secure tenure rights are use or ownership rights to land that are legally recognised, even if no formal document is issued, customary rights being the most prominent example and it does not require ownership (i.e. long term leases or short term ones that are routinely renewed as well as group rights qualify). Security implies that an individual cannot be deprived of his or her land rights involuntarily. This normally requires that duration, subject, and object of rights are clearly defined. For the latter, physical markers, a map or sketch (not necessarily a high precision survey) that shows the parcel's position relative to others is normally needed.

⁶ <http://www.fao.org/economic/ess/ess-wca/wca-guidelines/en/>; and UN-FAO and Committee on World Food Security, 2012. Voluntary guidelines on the responsible governance of tenure of land, fisheries and forests in the context of national food security. <http://www.fao.org/docrep/016/i2801e/i2801e.pdf>

Security of tenure can however not always be measured directly and, to a large extent, it is what people perceive it to be. The attributes of security of tenure may change from context to context. For example, a person may have a right to use a parcel of land for a 6 month growing season, and if that person is safe from eviction during the season, the tenure is secure. By extension, tenure security can relate to the length of tenure, in the context of the time needed to recover the cost of investment. Thus the person with use rights for 6 months will not plant trees, or invest in irrigation works or take measures to prevent soil erosion as the time is too short for that person to benefit from the investment. The tenure is insecure for long-term investments even if it is secure for short-term ones.

The importance of long-term security has led some to argue that full security can arise only when there is full private ownership (e.g., freehold) as, under such tenure, the time for which the rights can be held is not limited to a fixed period. It is argued that only an owner enjoys secure rights, and holders of lesser rights, such as tenants, have insecure tenure because they are dependent on the will of the owner. It is then implied that security of tenure comes only with holding transfer rights such as the rights to sell and mortgage. Equating security with transfer rights to sell and mortgage is true for some parts of the world but it is not true in many others. People in parts of the world where there are strong community-based tenure regimes may enjoy tenure security without wishing to sell their land, or without having the right to do so, or having strictly limited rights to transfer (e.g. transfers may be limited to heirs through inheritance, or sales may be restricted to members of the community).

The sources of security may also vary from context to context:

- An important source is the community and its specific groups such as local farmers' organisations and water users' associations. When neighbours recognise and enforce a person's rights, that person's security increases. In many customary tenure arrangements, people gain property rights through membership of social communities. Maintaining property rights validates membership in the group just as much as membership facilitates the acquisition and safeguarding of property rights.
- Governments represent another source of security as they may provide political recognition of some rights.
- Another source may be the administrative state and the formal legal system. The state may provide security in general by affirming the rights that people hold as well as through specific measures such as providing protection against trespass. Security is often seen to come from protections provided through land registration and cadastral systems.

The total security enjoyed by a person is the cumulative security provided by all sources. In many cases, increasing security from one or more sources will result in an increase in total security. In many development projects, providing or improving legal security is considered the most important way of increasing security of tenure. Examples of land tenure reforms include the upgrading of informal rights to legally enforceable rights; the upgrading of state-issued permits to leases that provide greater protection to the land users; the introduction of provisions for communities to become the legal owners of their traditional land holdings instead of the rights being vested in the State; and better definition of property rights through improvements to formal land administration systems. Rights may also be reduced or eliminated if the state starts to enforce existing rules that prevent access to resources. For example, more rigid enforcement of state policy on forest conservation may result in villagers being evicted from land which they have been using for agricultural and grazing purposes.

Tenure insecurity may be caused by social changes. HIV/AIDS, for example, is impacting the security of women in parts of Africa. Widows may lose access to land in a legal sense if they are unable to inherit rights from their husbands, and in a practical sense if they are forced off the farms by male relatives⁷.

⁷ <http://www.fao.org/docrep/005/y4307e/y4307e05.htm>

Preparations

Concepts and definitions of ownership and rights over land should be established locally. Adequacy of concepts and language to specific population groups should be ensured. Security of tenure should also be defined locally. Shorter term (1-2 years) versus longer-term leases could be distinguished. Generally for longer-term land and productivity investments (soil improvements, irrigation, tree-growing) minimum lease arrangements of 3 or more years are recommended.

Sampling

If data are not available from the municipal cadastre or land register, data can be collected by household surveys. Household surveys are usually done on a sample basis and should –where possible– be statistically representative. Statistical representative sampling may be very hard, given the extreme weakness of local scale statistics, particularly at the sub-urban scale and so drawing a robust sample frame is extremely difficult. Household surveys can be area-based (not pre-identifying agricultural population) or population-based (implemented among a sample of pre-identified agricultural population).

If the research aims to provide an overview of the entire city, a variety of neighbourhoods and areas (urban, peri-urban and rural) will have to be included. Once geographical areas are selected, household number estimates can be deducted from the latest aerial photos, followed by an interval sample (e.g. surveying every 5th or 10th household based on this). Household representativity can be ensured by using a sample frame of 10% of the total number of households.

Acknowledging the relevance of land rights for specific population groups, like migrants or indigenous, cities can also work towards: i) including specific population groups in the survey sample frames; ii) collecting information on ethnicity and background and using it as disaggregation variable for this indicator. Oversampling might be required to guarantee representativeness of such population groups.

Data collection and data disaggregation

Data disaggregation will be done by 1. Gender and 2. Type of tenure.

1. Gender

The indicator is divided in two parts: (a) it measures the incidence of people with ownership or secure rights over agricultural land among the total agricultural population; while (b) it focusses on the gender parity measuring the extent to which women are disadvantaged in ownership or rights over agricultural land. Part (a) and part (b) cannot be seen as two different indicators, they rather provide complementary information. Plus, they can be computed using (almost) the same data. Where gender disaggregated data is available, land may be held either individually or jointly and in cases of joint ownership, a simple arithmetic average over male and female users will be used.

2. Land tenure

In order to disaggregate data by type of tenure, the data collection methodology should always include a question on land tenure. Note again that there are different formal and informal tenure systems around the world and the distinction between legal and non-legal tenure is often blurred. When available, the indicator shall also be disaggregated by documented tenure rights.

The indicator can further be disaggregated spatially (e.g. by area), and depending on other available survey information by age, socio-economic profiles, poverty status, or wealth/income category providing insight into the social equity dimensions including the incidence of land problems and distribution of benefits amongst different social groups and changes in this over time.

With regards to data collection, both existing administrative data (e.g. the municipal cadastre or land registration) and survey data (household and agricultural surveys) will be the main data sources for this indicator. Data can be collected periodically (about every 2-4 years) which is a reasonable frequency to capture significant changes in land ownership.

1. Administrative records

Administrative records are a low-cost way of accessing data. Production of land records and maps is a core function of public registries and reporting on the number of registered parcels or the number and area of parcels mapped is not difficult in principle and, where household surveys are available, can be cross-checked against survey information. Administrative records can be used to provide information on number of households/individuals with formally documented rights. Land registry records provide data on the number of individually registered parcels. This information is in most cases linked to information on land ownership (type of ownership) and information on (the number of) individuals owning the land and is in some cases also disaggregated by gender or type of land use (residential, agric., industry/business). In the case of registered group rights, identifying the number of owners should equally be possible.

2. Surveys

Representative multi-topic household surveys will provide (gender disaggregated) information, separately for residential and non-residential land, on (i) the share of individuals with (specific forms of) secure tenure rights; and (ii) the share of individuals who perceive their rights to be secure.

Data can be extracted from existing World Bank, UN FAO and UN Habitat surveys that provide data on the extent to which plots in the main city or the entire country are registered (see World Bank's 'Doing Business; survey Registering Property Indicator). This is currently being followed up to obtain data on the number of parcels and total area mapped. The World Bank and UN-Habitat also have access to an extensive archive of more than 2,000 nationally representative household surveys (some, such as Urban Inequities Survey, MICS and DHS publicly available), mostly for developing countries at multiple points in time. A review of these indicates that existing surveys in many countries provide information on land access and on agricultural land ownership. Although data are mainly collected at national level, cross-checking with urban/rural and city-level data maintained by UN Habitat is being done⁸. Additional data sets may have been developed by civil society, academia or private sector.

In case new, locally appropriate, surveys have to be developed these should include questions on:

- Socio-economic household data
- Livelihood and income sources
- Land data
- Land ownership
- Forms of tenure
- Security of tenure
- Perceptions of tenure security (Households understanding on whether the documentation that they hold is legally recognised or perceived to be secure).

⁸ UN Habitat has been monitoring security of tenure at urban level for more than 20 years in a sample of 1000 cities worldwide, (as part of Habitat Agenda, Urban Indicators Program (1996-2002) and MDGs/SDGS Slum indicator component 2002-2016). This exercise has been undertaken for data from over 124 countries from the developing regions. The results of this analysis are available in the Urban Indicators database maintained by UN-Habitat. These data were derived from census and survey data that were conducted in the last 10 years. Additional data came from specially designed survey tools (Urban inequities survey) that were implemented in selected countries. UN-Habitat is currently updating this data with other spatial measures, and perceived land rights estimations.

Data analysis/calculation of the indicator

The indicator consists of an outcome indicator, disaggregated by sex and type of tenure as much as possible, namely the share of the total agricultural population who have secure tenure rights to land, by sex. The indicator can be calculated as follows:

Part (a)

$$\left(\frac{\text{People with ownership or secure rights over agricultural land}}{\text{Total agricultural population}} \right) \cdot 100$$

Part (b)

$$\left(\frac{\text{Women with ownership or rights over agricultural land}}{\text{Total owners or rights bearers over agricultural land}} \right) \cdot 100$$

In case the indicator can be disaggregated by type of tenure, the following analysis can be made, namely the share of the agricultural population who have (i) secure tenure rights to land (SecRight); (ii) legal documents to their land (LegDoc); and (iii) perceive their tenure to be secure (PercSec). In cases where information is reported separately for residential and agricultural land (or for different types of agricultural land held by an individual), the index will be aggregated over all parcels with equal weight given to each land use class and parcels weighted by their area share⁹.

Regular reporting on this indicator will inform city governments and non-state actors to what extent municipal (or other subnational) legal and institutional frameworks recognise and support different land tenure categories, and implementation capacity to protect such rights in practice, as well as progress made (allowing assessment of specific outcomes and practical priorities for further improvements), in order to identify the scope for additional action required, and provide for equity between men and women in rights to hold, inherit and bequeath land. It hopefully also leads to greater readiness to engage with multiple stakeholders in data analysis and in achieving better understanding of the strengths and weaknesses of existing land governance policies and practices.

⁹ See footnote 1.



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Indicator 29: Proportion of agricultural land in the municipal area under sustainable agriculture

MUFFP framework of actions' category: Food production

The indicator measures the total agricultural area in the municipality (also referred to as urban and peri-urban agriculture) under sustainable agriculture as per the total area of agricultural land in the municipal area.

Overview table

| MUFFP Work stream | Food production |
|--|--|
| MUFFP action | <p>Apply an ecosystem approach to guide holistic and integrated land use planning and management in collaboration with both urban and rural authorities and other natural resource managers by combining landscape features, for example with risk-minimizing strategies to enhance opportunities for agroecological production, conservation of biodiversity and farmland, climate change adaptation, tourism, leisure and other ecosystem services.</p> <p>Protect and enable secure access and tenure to land for sustainable food production in urban and peri-urban areas, including land for community gardeners and smallholder producers, for example through land banks or community land trusts; provide access to municipal land for local agricultural production and promote integration with land use and city development plans and programmes.</p> |
| What the indicator measures | <p>The indicators measures the total agricultural area in the municipality (also referred to as urban and peri-urban agriculture) under sustainable agriculture as per the total area of agricultural land in the municipal area</p> <p>Note: Depending on specific city interests and political priorities, a city may be interested in specifically monitoring the proportion of agricultural land being farmed as agro-ecological or organic agriculture (or conservation agriculture, climate smart agriculture, nature-based farming, multifunctional farming or any other locally relevant denomination of "sustainable agriculture").</p> |
| Which variables need to be measured / what data are needed | <p>Total surface area of agricultural land within the municipal area/boundaries</p> <p>Total surface area of agricultural land under sustainable agriculture</p> <p>If data are available: Geo-spatialisation and location of agriculture areas/areas under sustainable agriculture</p> |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | <p>Total surface area</p> <p>Percentage</p> |

| | |
|---|---|
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Agricultural area under sustainable production If data are available/desired: Categorisation of land by land ownership/land use types or production systems |
| Possible sources of information of such data | -Agricultural land (management) records held by the municipal or national department for agriculture or cadastre. -Agricultural or farm surveys or household surveys with an agricultural components -Land use and GIS maps |
| Possible methods/tools for data-collection | Analysis of existing records or surveys or new survey design and implementation |
| Expertise required | Agronomy GIS |
| Resources required/ estimated costs | |
| Specific observations | |
| Examples of application | |

Rationale/evidence

This indicator is related to SDG Goal 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture), Target 2.4: 'By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality'¹.

Many cities promote ecological gardening methods and allow only environmentally friendly methods to control bugs, plant diseases and weed infestation in the city's urban agriculture and community gardens. For example, the urban agriculture programme in Havana (Cuba) prohibits the use of agrochemicals in the city and supports the establishment of decentralised low-cost facilities for compost production and the production and supply of bio-fertilisers and bio-pesticides (packaged in small quantities) to urban farmers through a network of 52 agricultural stores that also provide technical services, advice and training to the city's farmers. The Havana urban agriculture programme has calculated that producing 1 million tonnes of vegetables applying agro-ecological production methods saves over US\$41 million in the costs of fertilization and pest control as compared to conventional agriculture². In Quito (Ecuador) and Rosario (Argentina), production practices stimulated by the municipality are also based on agroecology principles which lead to greater autonomy by reducing dependence on energy, knowledge, inputs and intermediaries³.

Since 2000, Mexico City's government has increased its support to agriculture in the Federal District, with the main objective of protecting the ecosystem services that suburban and peri-urban areas provide to the city, and to a lesser extent, to ensure a local food supply. The Federal Environmental Law promotes organic farming systems and prohibits the use of agrochemicals and synthetic fertilisers in a demarcated conservation zone. Training, technology development, agro-processing and marketing

¹ The related indicator is: 2.4.1 Proportion of agricultural area under productive and sustainable agriculture.

² FAO, 2014. Growing greener cities in Latin America and the Caribbean. An FAO report on urban and peri-urban agriculture in the region. <http://www.fao.org/3/a-i3696e.pdf>. For some African case studies see: <http://www.fao.org/docrep/016/i3002e/i3002e.pdf>

³ See case studies on Quito and Rosario in: Dubbeling M., C. Bucatariu, G. Santini, C. Vogt and K. Eisenbeiß (2016). City Region Food Systems and Food Waste Management Linking Urban and Rural Areas for Sustainable and Resilient Development. Deutsche Gesellschaft für Internationale Zusammenarbeit / GIZ, RUAF Foundation, Food and Agriculture Organization of the United Nations / FAO. Available from <http://www.ruaf.org/publications/city-region-food-systems-and-food-waste-management-2016> and <http://www.fao.org/3/a-i6233e.pdf>. See also footnote 2.

support are provided to the producers. Another programme, for the promotion of traditional food culture, provides subsidies to farmers who preserve local maize varieties under traditional production systems with low environmental impact. Meanwhile, the city's Secretariat for the Environment has instituted Mexico's first system of organic certification of produce, known as the Green Seal, and has set standards for organic agriculture in the conservation zone.⁴

Other cities provide incentives for agricultural practices that maintain water quality, enhance biodiversity, protect fish and wildlife habitat and historic resources, maintain flood conveyance and storage, reduce greenhouse gas emissions, and prevent erosion of valuable agricultural soils while maintaining the functions needed for agricultural production.

Glossary/concepts/definitions used

Agricultural land in the municipal area is understood as land used for various types of agricultural activities within the municipal boundaries. This land may be city owned land, private, or institutionally owned.

There has been considerable discussion over the past thirty years on how to define “**sustainable agriculture**.” It is well established that sustainability needs to be considered in terms of its social, environmental and economic dimensions. This indicator tries to principally capture the environmental dimension of sustainability. It looks at agricultural production and management practices that:

1. Minimise the risk for environmental contamination by promoting agro-ecological, organic or conservation agriculture
2. Protect and improve the natural resource base (soil, water) in order to ensure sufficient productivity for the foreseeable future
3. Conserve and enhance biodiversity and wildlife habitat
4. Maintain other ecosystem services and/or enhance climate adaptation (climate smart agriculture).
5. Reduce or remove Green House Gas emissions.

Note: Depending on specific city interests and political priorities, a city may be interested in specifically monitoring the proportion of agricultural land being farmed as agro-ecological or organic agriculture (or conservation agriculture, climate smart agriculture, nature-based farming, multifunctional farming or any other locally relevant denomination of “sustainable agriculture”).

Organic agriculture can be defined as: an integrated farming system that strives for sustainability, the enhancement of soil fertility and biological diversity whilst, with rare exceptions, prohibiting synthetic pesticides, antibiotics, synthetic fertilizers, genetically modified organisms, and growth hormones. Organic farming relies on fertilisers of organic origin such as compost manure, green manure, and bonemeal, and places emphasis on techniques such as crop rotation and companion planting. Biological pest control, mixed cropping and the fostering of insect predators are encouraged. In general, organic standards are designed to allow the use of naturally occurring substances while prohibiting or strictly limiting synthetic substances. Organic agricultural methods are internationally regulated and legally enforced by many nations, based in large part on the standards set by the International Federation of Organic Agriculture Movements (IFOAM), an international umbrella organisation for organic farming organisations established in 1972.

Agroecology provides a broad approach to sustainable urban food policies, going beyond organic farming towards a perspective of food justice and ecosystem services provided by food systems.

⁴ Baker L. and H. de Zeeuw, 2015. Urban food policies and programmes. In: Drechsel and De Zeeuw (ed). Cities and agriculture-Developing resilient urban food systems, 2015. Earthscan-Routledge London and New York.
<http://www.ruaf.org/urban-food-policies-and-programmes-overview>.

Sustainable production practices are promoted and embedded in broader programmes of food sovereignty and justice, and equitable access to resources and benefits⁵.

Conservation agriculture (CA) is defined by FAO as a form of agriculture that aims to achieve sustainable and profitable agriculture and subsequently aims at improved livelihoods of farmers through the application of the three CA principles: minimal soil disturbance, permanent soil cover and crop rotations⁶.

Climate-smart agriculture (CSA) is defined by FAO as an approach that helps to guide actions needed to transform and reorient agricultural systems to effectively support development and ensure food security in a changing climate. CSA aims to tackle three main objectives: sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing and/or removing greenhouse gas emissions, where possible⁷.

Ecosystem services are the benefits people obtain from ecosystems. These include provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services, such as nutrient cycling, that maintain the conditions for life on Earth⁸.

Biodiversity is the variability among living organisms. It includes diversity within and among species and diversity within and among ecosystems. Biodiversity is the source of many ecosystem goods, such as food and genetic resources, and changes in biodiversity can influence the supply of ecosystem services.

Preparations

By defining sustainability across its environmental (and if desired also across other social and economic) dimensions, cities can select those dimensions for monitoring that best capture the priorities most relevant to them.

If data are not available from existing records or surveys, new farm/agricultural surveys will need to be designed in order to cover the selected dimensions of sustainability.

Sampling

If agricultural land records provide the required information, no sampling is required. If information has to be collected through agricultural, farm or household surveys, the following sampling method can be applied:

Agricultural and farm surveys: A list of different farm and agricultural production systems should be drawn up. These can include:

- Urban agriculture and community gardens supported by government and no-government organisations
- Urban and peri-urban commercial farms (depending on the local context these farms could be categorised as horticulture, other crop, livestock and mixed farms amongst others).

A sample of 10% of each of these farm and production systems is recommended.

⁵ See for a discussion on urban agro-ecology, practice and policy examples: [Urban Agriculture Magazine no 33](#) - Urban Agroecology, 2017. RUAF Foundation and the Centre for Agroecology Water and Resilience (CAWR).

⁶ <http://www.fao.org/ag/ca/>

⁷ <http://www.fao.org/climate-smart-agriculture/en/>

⁸ <https://www.millenniumassessment.org/documents/document.300.aspx.pdf>

Household surveys: Household representativity can be ensured by using a sample frame of 10% of the total number of households in the municipal area.

Data collection and data disaggregation

The total agricultural area within the municipal area can be computed from agricultural and land records and registers or from Indicator 27: *Surface area of (potential) agricultural spaces in the municipal area*.

Data on sustainable production, if not available in these records or earlier surveys, should be obtained from farm/agricultural surveys or household surveys with an agricultural component. Survey data can be validated by additional field observations and verifications.

Depending on specific local interests, data can be disaggregated for surface areas that involve one or more of the following –or other to be defined- management practices:

1. Minimise the risk for environmental contamination by promoting agro-ecological, organic or conservation agriculture
2. Protect and improve the natural resource base (soil, water) in order to ensure sufficient productivity for the foreseeable future
3. Conserve and enhance biodiversity and wildlife habitat
4. Maintain other ecosystem services and/or enhance climate adaptation (climate smart agriculture).
5. Reduce or remove Green House Gas emissions.

If farm or household surveys are used, depending on the survey information, data can also be disaggregated for size and type of agricultural system/enterprises; gender and age of the farm/garden manager and public versus private farming areas.

Data analysis/calculation of the indicator

The indicator is computed by the following formula:

$$\text{Proportion of agricultural land in the municipal area under sustainable agriculture} \\ = \text{Area under sustainable agriculture} / \text{Total agricultural area}$$

Changes would be measured against a baseline, which would show trends over time.



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Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 30: Number of urban and peri-urban food producers that benefited from technical training and assistance in the past 12 months

MUFPP framework of actions' category: Food production

The indicator monitors the number of food producers (horticultural growers, smallholders and farmers) in and close to the city that have received technical training and assistance over a given time period (e.g. last twelve months).

Overview table

| MUFPP Work stream | Food production |
|--|---|
| MUFPP action | Help provide services to food producers in and around cities , including technical training and financial assistance (credit, technology, food safety, market access, etc.) to build a multigenerational and economically viable food system with inputs such as compost from food waste, grey water from post-consumer use, and energy from waste etc. while ensuring that these do not compete with human consumption. |
| What the indicator measures | The indicator monitors the number of food producers (horticultural growers, smallholders and farmers) in and close to the city that have received technical training and assistance over a given time period (e.g. last twelve months). |
| Which variables need to be measured / what data are needed | -Total annual number of urban and peri-urban food producers (horticultural growers, smallholders and farmers) -Total number of food producers that benefited from technical training and assistance -Type of beneficiaries -Type of training and technical assistance provided If desired: -Type of training providers (e.g. municipality? NGOs, universities, etc.) |
| Unit of measurement (i.e. Percentages, averages, number, etc.) | Number of food producers (horticultural growers, smallholders and farmers) |

| | |
|---|---|
| Unit(s) of Analysis <i>(i.e people under 5 years old, etc.)</i> | Data disaggregation by type of food producers (share of men/ women; youth/adults; other socio-economic categories; type of food produced; location; scale of production) and by type of technical assistance and/or service provider |
| Possible sources of information of such data | -Records from national government, local government, non-governmental organisations, private sector training and technical assistance programmes |
| Possible methods/tools for data-collection | Analysis of records of technical training and assistance programmes Food producers survey |
| Expertise required | Survey design and implementation |
| Resources required/ estimated costs | |
| Specific observations | Important to decide clearly on who the food producers are – the suggestion is to focus on those who derive some sort of economic livelihood from working on the land and producing food. There will be others who are involved with urban food growing or farming but it may be for more social or leisure reasons, not for economic reasons. |
| Examples of application | Several cities monitor the number of beneficiaries of technical training and assistance programmes for food producers. This monitoring is however mainly limited to their own municipal programmes and services. Additional effort is needed to collect data from other levels of government and organisations. |

Rationale/evidence

Urban and peri-urban food production can, in all its diversity, serve as a future innovator of resource-efficient production, which will be instrumental for all agriculture systems and indispensable to increasingly, resource-challenged (i.e., land, water, energy) cities throughout the world. The diversity of urban and peri-urban agriculture models provide opportunities for both capital- and labour-intensive production systems.

Urban and peri-urban food producers however require technical skills to set up and manage productive, sustainable and resource efficient production systems. While urban and peri-urban agriculture today ranges from the small garden plots to medium-sized community farms to even larger scale commercial operations, technological, financial and social innovations are increasingly redefining urban and peri-urban food production to meet competition for resources, address constraints related to scarce and high priced land and more efficient water and energy usage, to safeguard environmental and human health, or to meet changing consumer demand. The lack of such skills continues to be one of the key barriers keeping producers, and in particular women, youth and small-scale producers, from innovating and improving their production systems.

A vibrant, sustainable food production system needs workforce development to ensure that there are properly trained and educated male and female, youth and adult, small, medium and large-scale producers whose skills are regularly updated. Stronger partnerships with non-governmental organizations and private sector firms are crucial for developing the requisite skills.

Glossary/concepts/definitions used

Urban and peri-urban primary food production (urban agriculture)

For this indicator, primary urban food production can also be called urban agriculture. This can be defined shortly as the growing of plants and the raising of animals within and around cities. The most striking feature of urban agriculture, which distinguishes it from rural agriculture, is that it is integrated into the urban economic and ecological system: urban agriculture is embedded in -and interacting with- the urban ecosystem. The RUAF Foundation provides useful definitions of types of actors, locations and products that typify urban agriculture.¹

Urban food producers - horticultural growers, smallholders and farmers

Urban and peri-urban food producers are people who produce food from urban or peri-urban land for economic purposes. In many countries this group have the lowest incomes of all urban dwellers. Some cultivate/manage very small areas of land; they may only grow vegetables or they may have enough land to keep small numbers of livestock. Some cities have larger farms within or around the edges of city boundaries. For this indicator, the particular group of urban food producers are those who derive some kind of livelihood from trade/sales of their food products.

Technical assistance is non-financial assistance taking the form of sharing information and expertise, instruction, skills training, transmission of working knowledge, and consulting services. The aim of technical assistance is to maximise the quality of food production systems and impact by supporting administration, management, development, capacity building, etc. Ideally, the technical assistance focuses on particular needs and priorities identified by the beneficiaries. Technical assistance to urban and peri-urban food producers can take the form of instruction and training in areas like:

- Agro-ecological or organic production methods
- New production technologies (hydroponics, vertical farming, greenhouse production)
- New production systems and crops/products (sprouts, spirulina)

¹ What is urban and peri urban agriculture? RUAF Foundation <http://www.ruaf.org/urban-agriculture-what-and-why>

- Waste recycling
- Crop rotation and associations
- Soil and water management
- Weeds, pest and disease management
- Food safety and environmental management
- Climate smart agriculture/conservation agriculture
- Business planning and management
- Processing
- Marketing
- Etc.

Youth (aged 15-24 years) and **adults** (aged 25 years and above).

Small, medium and large-scale producers: use local categories.

Preparations

The team responsible for monitoring this indicator should agree on:

1. Type of data disaggregation and categories that will be used (see further below)
2. Data collection method
3. If surveys are to be used, information should be collected first on the total number of food producers (for sampling purposes) and a survey instrument has to be designed. Training of survey enumerators may be needed.

Sampling

If data are not available from programmatic records (national government, local government, non-governmental organisations, private sector training and technical assistance programmes), surveys among food producers can monitor the type and frequency of technical training and assistance received in the past 12 months. Additional survey questions can provide information on the service providers, costs of training and assistance, use and application of past training and assistance or still unmet needs and demands.

If a specific policy priority, surveys could be implemented among specific target groups (e.g. youth, women, small-scale producers etc.) or in specific areas of the city.

In general, a 10% sample (10% of all food producers) will provide reliable data.

Data collection and data disaggregation

Data disaggregation can be done by 1/ type of beneficiary and 2/ type of technical training and assistance.

1. Type of beneficiary

Indicate the different number and types of beneficiaries that received technical training and assistance:

- Youth vs. adults
- Men vs. women
- Small scale, vs. medium-scale or large scale farmers
- Any other category (e.g. horticulture vs. livestock farmers; community gardeners vs. commercial producers etc.).

2. Type of technical training and assistance

Both the type of service as well as its content can be recorded:

- Type: Information sharing; practical instruction, skills training, consulting services
- Content: what was the technical training or assistance about?
- If desired: Type of service provider

Data can be collected from:

1. Analysis of records

Look at records from national government, local government, non-governmental organisations, private sector training and technical assistance programmes on number and type of beneficiaries, type and content of training/assistance and if available amount and source of funding for the technical training and assistance programmes.

2. Food producer surveys

If no records are available, a survey among a sample of urban and peri-urban food producers would yield the needed information. This survey could integrate questions that would also provide data for other indicators, like land ownership and tenure regimes (see indicator 28 *Proportion of total agricultural population with ownership or secure rights over agricultural land for food production, by sex*), area under sustainable agriculture (Indicator 29 *Proportion of agricultural land in the municipal area under sustainable agriculture*))

Data analysis/calculation of the indicator

The indicator is computed by calculating the total number of urban and peri-urban food producers that received some form of technical training and assistance in the past 12 months. As different service providers (e.g. local government, a NGO) may have provided training/assistance to the same beneficiaries, adding up numbers from different institutional records may lead to double-counting. Where possible, this should be corrected.



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Milan Urban Food Policy Pact Monitoring Framework

March 2021 version

Indicator 31: Number of municipal food processing and distribution infrastructures available to food producers in the municipal area

MUFPF framework of actions' category: Food production

The indicator monitors the number (and type of) municipal infrastructure for storage, processing and distribution of food located in the municipal area, including storage buildings, processing plants, transport facilities and (wholesale and consumer) markets.

Overview table

| MUFPF Work stream | Food production |
|--|--|
| MUFPF action | <ul style="list-style-type: none"> - Seek coherence between the city and nearby rural food production, processing and distribution, focussing on smallholder producers and family farmers, paying particular attention to empowering women and youth. - Support short food chains, producer organizations, producer-to-consumer networks and platforms, and other market systems that integrate the social and economic infrastructure of urban food system that links urban and rural areas. This could include civil society-led social and solidarity economy initiatives and alternative market systems. |
| What the indicator measures | <p>The indicator monitors the number (and type of) municipal infrastructure for storage, processing and distribution of food located in the municipal area, including storage buildings, processing plants, transport facilities and (wholesale and consumer) markets.</p> <p><i>Note: The indicators focusses in first instance on municipal infrastructure as this information may be more readily available. It is acknowledged that other private or civil society funded/managed infrastructures may also be available for municipal food producers. If information is available, these other local infrastructures could also be considered.</i></p> |
| Which variables need to be measured / what data are needed | <p>Data are needed on:</p> <ul style="list-style-type: none"> - Availability of local food processing and distribution infrastructure - If of interest: data on types of infrastructure, location and other characteristics, and data on users of these services |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Number of infrastructures |
| Unit(s) of Analysis | Data can be disaggregated for different types of infrastructure, for locations and other characteristics (equipment, volumes, price of services), and the type of |

| | |
|---|---|
| <i>(i.e people under 5 years old, etc.)</i> | food producers/actors that are making use of these (share of men/ women; youth/adults; other socio-economic categories) |
| Possible sources of information of such data | -Economic/market government department -Food business registers -Agriculture department/programmes -Earlier research |
| Possible methods/tools for data-collection | If data are not available from government and other organisation records, information may be collected through food producer surveys (how and where do food producers process and distribute their products). |
| Expertise required | If surveys are used: survey design and implementation |
| Resources required/ estimated costs | |
| Specific observations | Food infrastructure may be provided by both public and private actors, information on the latter may be more difficult to collect |
| Examples of application | |

Rationale/evidence

A recent (2016) study on the 'Role of private sector in city region food systems'¹ highlights that one of the critical factors in enabling a food business to supply markets in the city area is its surrounding hinterland, thus its ability to process and distribute, whether by its own means or through other local businesses. Food processing and distribution infrastructure can either individually or collectively be owned or offered by other private sector or the government.

Ability to access processing infrastructure: For farmers and growers wanting to sell their products in city markets, from farm gate sales to supplying hospitals for example, access to processing facilities is key. For eggs, vegetables and fruit, those processing facilities can be relatively basic (depending on the market) and farmers and growers may require a facility for grading, packing and possibly washing. Dairy and meat products require more costly and complex processing facilities. Farmers either set up their own processing units on farm or are reliant on a (usually small to medium size) processor that provides services for direct selling farmers as well as usually serving other bigger customers. Setting up on-farm processing facilities has many advantages (ability to sell directly, control over quality, etc.) and many challenges. Challenges include the requirement for capital investment which is difficult if the farm is leased and not owned or if grant support is not available. Other challenges can include skills shortage, insufficient cold room space and meeting the food safety standards.

Efficient use of capital inputs (sharing infrastructure) will make the system more competitive. A case study on Rotterdam, The Netherlands, describes how a recent trend is emerging where processing facilities are downscales and decentralised again. Examples include micro-breweries, mobile fruit juice pressing facilities, mobile slaughterhouses and even micro dairy processing facilities that use up-to-date technology for monitoring and quality control. Thus it becomes easier for farmers to add value to their products by including processing and distribution, potentially even marketing and sales at farm level, or work cooperatively with other farmers (e.g. dairy farmers of Midden Delfland). The latter jointly bought pasteurisation equipment and started to bottle and brand their own milk and market it directly to consumers in the Rotterdam area.

Access to distribution infrastructure: Urban and peri-urban food producers selling to city markets generally either rely on their own distribution or on wholesalers who operate in the city. Cities like

¹ Dubbeling M., J. Carey and K. Hochberg, 2016. The role of private sector in city region food systems. RUAF Foundation, the Food Business Knowledge Platform and IWMI/CGAIR WLE programme. <http://www.ruaf.org/projects/role-private-sector-city-region-food-systems>

Medellin, Colombia, and several others, support development of food storage and distribution infrastructures (such as ‘food hubs’). Product aggregation from different producers that leads to a diversified ‘basket’, and synergies between different short food chain supply channels and outlets have proven to be a success factor in a number of cases.

Apart from the availability (e.g. number) of local food processing and distribution infrastructure, the extent to which producers have access to suitable processing and distribution facilities (i.e. in terms of distance, volumes, quality, equipment, skills, and specialisations) is key. As is the degree of vulnerability of such infrastructure to increasing temperatures, flooding and other (climate related) risks².

This indicator is closely related to Indicator 32 (*Proportion of local/regional food producers that sell their products to public markets in the city*) and data for both indicators can be collected by using market or field survey instruments.

Glossary/concepts/definitions used

Food processing and distribution infrastructure: infrastructure for storage, processing and distribution of food, including storage buildings, processing plants, transport facilities and (whole sale and consumer) markets.

Food hubs, as defined by the USDA are “centrally located facilities with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally/regionally produced food products.” A defining characteristic of food hubs is source identification, food safety and marketing benefit that allows consumers to trace the origin of products they buy. One of the primary goals of food hubs is to give small and medium-sized farmers access to larger or additional markets. Food hubs also fill gaps in food systems infrastructure, such as transportation, product storage, and product processing. A food hub may be set up as a non-profit organisation, a for-profit business, or a cooperative.

Municipal food processing and distribution infrastructure: infrastructure run entirely by the municipality or run through subsidiary companies (municipal-owned companies). Note: The indicators focusses in first instance on municipal infrastructure as this information may be more readily available. It is acknowledged that other private or civil society funded/managed infrastructures may also be available for municipal food producers. If information is available, these other local infrastructures could also be considered.

Preparations

The team responsible for monitoring this indicator should agree on:

1. Type of data disaggregation and categories that will be used (see further below)
2. Data collection method (analysis of records or food producer survey)
3. If surveys are to be used, survey questions and instrument have to be designed. Training of survey enumerators may be needed.

Sampling

In case data are collected by means of a food producer survey, a 10% sample (10% of all food producers) is minimally needed.

² http://icic.org/wp-content/uploads/2017/01/Rockefeller_ResilientFoodSystems_FINAL_post.pdf?x96880

Depending on policy or monitoring priorities, surveys could be implemented among specific groups of producers (e.g. youth, women, small-scale producers etc.) or in specific areas of the city.

Data collection and data disaggregation

Data disaggregation can be done by 1/ Type of food infrastructure; 2/ Characteristics like location, volumes, equipment, costs of services; and 3/ Number and type of food producers accessing/using the infrastructure (e.g. youth vs. adult producers, men vs. women, small scale, vs. medium-scale or large scale producers, any other category (e.g. horticulture vs. livestock farmers; community gardeners with license to sell vs. commercial producers etc.)).

Data can be collected from existing records and registers (economic or market department, food business registers, agricultural programmes) or through food producer surveys (how and where they process, store and distribute their products). This survey could integrate questions that would also provide data for other indicators, like land ownership and tenure regimes (see indicator 28 *Proportion of total agricultural population with ownership or secure rights over agricultural land for food production, by sex*), area under sustainable agriculture (Indicator 29 *Proportion of agricultural land in the municipal area under sustainable agriculture*), the number of producers that benefitted from technical training and assistance (Indicator 30 *Number of food producers that benefited from technical training and assistance in the past 12 months*), or proportion of local/regional food producers that sell their products to public markets in the city (Indicator 32).

Data analysis/calculation of the indicator

The indicator is computed by calculating the total number of local food processing and distribution infrastructure available to urban and peri-urban food producers.

Depending on the type of survey used, further analysis of information on for example location, access of producers to such infrastructure, infrastructure needs and requirements, vulnerability to climate change, etc. can be done.



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Milan Urban Food Policy Pact Monitoring Framework

March 2021 version

Indicator 32: Proportion of local/regional food producers that sell their products to public markets in the city

MUFPP framework of actions' category: Food production

The indicator monitors the share of local/regional food producers that sell (part of) their products to one or more public market outlets in the city.

Overview table

| MUFPP Work stream | Food production |
|--|--|
| MUFPP action | <ul style="list-style-type: none"> - Seek coherence between the city and nearby rural food production, processing and distribution, focussing on smallholder producers and family farmers, paying particular attention to empowering women and youth. - Support short food chains, producer organizations, producer-to-consumer networks and platforms, and other market systems that integrate the social and economic infrastructure of urban food system that links urban and rural areas. This could include civil society-led social and solidarity economy initiatives and alternative market systems. |
| What the indicator measures | <p>The indicator monitors the share of local/regional food producers that sell (part of) their products to one or more public market outlets in the city.</p> <p><i>Note 1: The focus is first on public markets for ease of data collection. If information is available, other –private- market outlets could be included in the indicator.</i></p> <p><i>Note 2: If data are available, an additional and complementary indicator could measure the “Percentage of local/regional food that is sold to public markets in the city”. It is expected however that data needed for this indicator are not readily available</i></p> |
| Which variables need to be measured / what data are needed | <ul style="list-style-type: none"> - Total number of local/regional food producers - Total number of food producers that sell their products in public markets in the city. If desired: type of food producers; type and location of market outlets |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | Proportion/percentage of local/regional food producers selling their produce in public markets in the city |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Data can be disaggregated by type of food producers (share of men/ women; youth/adults; other socio-economic categories) and by market outlet (municipal markets, supermarkets, groceries, institutional procurement, consumer boxes) |

| | |
|---|---|
| Possible sources of information of such data | -Economic/market government department -Agriculture department/programmes -Different market stores/locations -Earlier research |
| Possible methods/tools for data-collection | -Market survey -Food producers survey |
| Expertise required | Survey design and implementation |
| Resources required/estimated costs | |
| Specific observations | It is acknowledged that data from private sector markets are very hard to get and that data on product location (local products vs non-local products) may not be readily available. It is also noted that in cities in the Global South, informal markets (street food, home restaurants) count for an important part of sales of locally produced food. Data collection from the informal sector may be too difficult/time consuming or unreliable. Rather more anecdotal evidence/case studies may be used or findings from earlier research. |
| Examples of application | The Consuming Urban Poverty project implemented market surveys, including product sourcing, in Kitwe (Zambia), Kisumu (Kenya) and Epworth (Zimbabwe). See: https://consumingurbanpoverty.wordpress.com/ |

Rationale/evidence

Short food supply chains are promoted to harnesses more integrated urban-rural relations, strengthen social relations between consumer and producers, and promote the inclusiveness of smallholder farmers and vulnerable groups across the supply chain.

The government of Belo Horizonte Metropolitan Region has recognised that small family farms in the urban, peri-urban and rural areas of the metropolitan region are an important component of a healthy, sustainable urban food system, and hence an important contributor to the welfare of urban residents on the long term. Throughout the years, the local government has shown how it can support the interests of the urban population, while at the same time enhancing the livelihoods of food producers and the sustainability of agricultural production. Strategies used include:

1. Provision of a direct market outlet for food producers (“Straight from the Farm programme” and the “Country Store Programme”; conventional and organic markets)
2. Through institutional food purchase/direct procurement of supply from urban, peri-urban and rural producers¹.

The Municipality of Milan also approaches the building of a local food system from both the point of view of the consumer (Food Policy, Priority n° 1: Guaranteeing healthy food for everybody; Guideline n°1.2: The Municipality shall ensure that in each district of the city affordable, healthy and sustainable food is available within short distances that can be covered by people with restricted mobility) as well as the producer (Priority n°2: Promote the sustainability of the food system; Guideline n°2.3: The Municipality shall support social, technological and organisational innovation in processing,

¹ Marielle Dubbeling, Stephania Aleixo de Paula e Silva, Marcelo Lana Franco and Adilana de Oliveira Rocha Alcântara (2016). Rural Food Supply for Vulnerable Urban Groups In: Dubbeling M., C. Bucatariu, G. Santini, C. Vogt and K. Eisenbeiß (2016). City Region Food Systems and Food Waste Management Linking Urban and Rural Areas for Sustainable and Resilient Development. Deutsche Gesellschaft für Internationale Zusammenarbeit / GIZ, RUAF Foundation, Food and Agriculture Organization of the United Nations / FAO. Available from <http://www.ruaf.org/publications/city-region-food-systems-and-food-waste-management-2016> and <http://www.fao.org/3/a-i6233e.pdf>.

distribution, logistics and trading activities to facilitate the transition to a sustainable food system). In Milan, there are currently 10 farmers markets on public areas. The municipality is working on a municipal regulation, which will firmly acknowledge the presence of short-chain markets in the city and the areas where they are held (personal communication City of Milan).

Glossary/concepts/definitions used

Local/regional food producers: Local/regional producers are those producers growing/cultivating/producing in a given city region. Building from a tradition of regional economic geography studies, we know that city regions provide a critical lens through which to understand sub-national dynamics and link economic activity to space. While a city region approach may not address all cases—for example, specific contexts such as small island states where, in some cases, there are no defined city territories but rather urban area territories, the city region has also been used to understand more about resource flows to minimise environmental impacts by, for example, understanding and closing waste through more efficient resource use.² A city region is defined here as: “as larger urban centre or conglomeration of smaller urban centres and the surrounding and interspersed peri-urban and rural hinterland”. Although contexts differ across cities and regions, such urban-rural partnerships and inter-municipal cooperation always extend beyond traditional administrative boundaries.³

A first key activity here will be to conduct a participatory mapping exercise with a wide range of stakeholders to define the nature and boundaries of the local city region and to define “local/regional producers”. A city region can be defined using various criteria: main sources of food and food flows, natural boundaries, administrative and jurisdictional boundaries.

Short food supply chains (SFSCs) are characterised by shorter links between producers and consumers so that food relations are re-socialised and re-spatialised. SFSCs emerged and are defined in opposition to the conventional, industrial (long chain) food system as to include food values, food quality and preferences for example, local and/or organic food, often referring to provenance, the distance food travels and/or knowledge about the food and its region. The consideration is that producer-consumer relations are 'shortened' and redefined by communicating about the origin and quality attributes of food so that products reach the consumer with such information. In SFSCs, “the foods involved are identified by, and traceable to a farmer.”⁴

FAO considers that Short Food Supply Chains (SFSCs) have potential to improve farm incomes, promote sustainable farming systems and contribute to local economic development. There are many different forms of SFSC, but they share a common characteristic of reduced numbers of intermediaries between the farmer or food producer, and the consumer. Whilst the number of SFSCs has proliferated, their collective impact is limited by a number of barriers to scaling up.⁵

The focus in this indicator is on the origin of production (local/regional producers) and the location of sale (public markets in the city). The focus is first on public markets for ease of data collection. If information is available also other –private– market outlets could be included in the indicator. Examples of different **market outlets in the city** include publicly supported street, farmer or other food markets, institutional outlets (procurement), conventional markets such as supermarkets or grocery

² Blay Palmer A., G. Santini, M. Dubbeling, H. Renting, M. Taguchi and T. Giordano, 2017. Validating the City-Region Food System Approach: Enacting inclusive, transformational city-region food systems . Submitted for publication.

³ <http://www.fao.org/in-action/food-for-cities-programme/toolkit/introduction/en/>;
<http://www.ruaf.org/projects/developing-tools-mapping-and-assessing-sustainable-city-region-food-systems-cityfoodtools>

⁴ See footnote 2

⁵ <http://www.fao.org/family-farming/detail/en/c/410251/>. See also: Approximation to short food value chains in developing world: a case from Mexico City <http://www.fao.org/3/a-i6511e.pdf>

stores, or other direct-to-consumers markets such on-farm stores, or food boxes.

Public markets. According to [Wikipedia](#), a market, or marketplace, is a location where people regularly gather for the purchase and sale of provisions, livestock, and other goods. But to be considered a *public* market, the market must:

- Have public goals: how does this place contribute to the community?
- Operate in public spaces- it can be privately owned but customers should not pay to get in
- Serve locally owned and operated businesses. Research from the Ford Foundation shows public markets confer multiple benefits to the communities they serve.⁶

Preparations

The team responsible for monitoring this indicator should agree on:

1. Type of data disaggregation and categories that will be used (see further below)
2. Data collection method (market and/or food producer survey)
3. If surveys are to be used, information should be collected first on the total number of food producers and market outlets (for sampling purposes) and a survey instrument has to be designed. Training of survey enumerators may be needed.

Sampling

In general, a 10% sample (10% of all food producers; 10% of all or specific market outlets) will provide sufficiently reliable data.

Depending on policy or monitoring priorities, surveys could be implemented among specific groups of producers (e.g. youth, women, small-scale producers, etc.), among specific market outlets or in specific areas of the city.

Data collection and data disaggregation

Data disaggregation can be done by 1/ Type of food producer and 2/ Type and location of market outlet.

1. Type of food producers (and their organisations)

Indicate the different types and numbers of food producers:

- Youth vs. adult producers
- Men vs. women producers
- Small scale, vs. medium-scale or large scale producers
- Type of farming systems
- Any other category (e.g. community gardeners with license to sell vs. commercial producers, etc.).

2. Type and location of market outlet

This indicator can be disaggregated for different market types e.g. farmers markets, public markets, public sector food procurement, supermarkets, grocery or specialty stores, wholesale markets, street food vendors, direct to consumer markets (such as box schemes, on-farm sales), private retail and catering, etc. Collecting additional information on the spatial location of different market outlets will provide data for other indicators such as food deserts (Indicator 8 *Number of households living in “food deserts”*).

⁶ <https://www.pps.org/article/4-guidelines-on-taking-public-markets-to-the-next-level>

Note: If data are available, an additional and complementary indicator could measure the “Percentage of local/regional food that is sold to public markets in the city”. To do so data need to be collected on:

- Total volume of local/regional produced food
- Total volume of local/regional food sold in (public) markets.

It is expected however that data needed for this indicator are not readily available.

Data can be collected from:

1. Market surveys

Surveys among specific or all types of market outlets in the city to monitor current sale of locally produced food items and identify obstacles and opportunities for improvement.

2. Food producer surveys

In addition to, or in place of, a market survey, a survey among a sample of urban and peri-urban food producers would yield the needed information. This survey could integrate questions that would also provide data for other indicators, like land ownership and tenure regimes (see indicator 28 *Proportion of total agricultural population with ownership or secure rights over agricultural land for food production, by sex*), area under sustainable agriculture (Indicator 29 *Proportion of agricultural land in the municipal area under sustainable agriculture*) and number of producers that benefitted from technical training and assistance (Indicator 30 *Number of food producers that benefitted from technical training and assistance in the past 12 months*).

Sample questions from surveys developed for other (African research) projects are provided in Annex 1 and 2⁷.

Data analysis/calculation of the indicator

The indicator is computed by dividing the total number of food producers selling their products to markets in the city by the total number of local/regional food producers:

$$\text{Proportion of local/regional food producers that sell their products to public markets in the city} = (\text{Total number of food producers selling their products to markets in the city} / \text{Total number of local/regional food producers}) * 100$$

If data are available, the following alternative indicator can be computed:

$$\text{Volume of local/regional food products sold at markets in the city} / \text{Total volume of food products sold at markets in the city} * 100$$

Depending on the type of survey questions used, further analysis of information on for example consumer interest in local food, availability and prices of local food, incentives and needs for increased local sales can be implemented.

⁷ Adapted from the Consuming Urban Poverty project: <https://consumingurbanpoverty.wordpress.com/>; World Bank urban food business survey

Annex 1: Market Survey

1. Classify different type of market outlets

[Only for wholesale and distribution] If your business assembles and redistribute food items, what type of wholesale and distributor are you?

- ☐ Sale/redistribution to retailers
- ☐ Sale/redistribution to food caterers
- ☐ Sale/redistribution to others (*please specify*)
- ☐ We are also engaged in food retail
- ☐ Other (*specify*)
- ☐ Information does not exist
- ☐ Do not know
- ☐ Choose not to response

[Only for retail] If your business is a shop that sells food to the public, what type of retailer is it? *Only read the question out loud and select the most appropriate answers. Probe the interviewee further if no answers are forthcoming.*

- ☐ Supermarkets
- ☐ Kiosks/house shops
- ☐ Independent specialist stores (e.g. butchers, bakers, fishmongers etc.)
- ☐ Specific ethnic food shops (Polish, Somali, Asian etc.)
- ☐ Other shops (*please specify*)
- ☐ Food markets
- ☐ Processors & manufacturers that combine processing and retail (e.g. local millers)
- ☐ Wholesalers & distributors that are also engaged in retail
- ☐ Restaurants, hotels, cafes, other eating out places
- ☐ Informal street food sellers/ mobile vendors
- ☐ Direct sales from producers (e.g. farmers, urban gardens)
- ☐ Social/solidarity shop
- ☐ Community buying groups or cooperatives
- ☐ Other retail (*specify*).....
- ☐ Information does not exist
- ☐ Do not know
- ☐ Choose not to response

[Only for catering, meals preparation] If your business provides prepared food or meals, what sort of caterer is it? *Only read the question out loud and select the most appropriate answers. Probe the interviewee further if no answers are forthcoming.*

- ☐ Hotel, restaurant, café
- ☐ Catering company supplying other businesses
- ☐ School meal preparation
- ☐ Hospital meal preparation
- ☐ Private company meal preparation
- ☐ Own business preparing meals for sale
- ☐ Fast food outlet
- ☐ Kiosk serving food
- ☐ Permanent street food seller
- ☐ Mobile street food seller/hawker
- ☐ Other informal pre-prepared food sellers (e.g. office to office lunch sellers)
- ☐ Homeless or malnutrition or children feeding centres
- ☐ Other (*specify*).....

- ☐ Information does not exist
- ☐ Do not know/No response

2. Location

Note: Please use a map to which the respondents can relate

Where, in relation to the city boundaries, is your business located?

- ☐ Inner city area
- ☐ Outskirts of city but within municipal boundary
- ☐ Outside the city municipal boundary
- ☐ Another part of the city (*specify*).....

In which type of neighbourhood of the city is your business or your main business operation located? *Cross-check answer given with own observation by interviewer*

- ☐ Designated industrial area (in the city)
- ☐ Designated retail shopping mall (in the city)
- ☐ City provided retail space (e.g. market) in industrial areas
- ☐ Non official retail space (e.g. market areas) in residential areas
- ☐ Non official retail space (e.g. market areas) in industrial areas
- ☐ Mobile, move around locations
- ☐ Have more than one main site (*tick any other options as relevant*)
- ☐ In residential area, home-based
- ☐ Other (*specify*).....
- ☐ Information does not exist
- ☐ Do not know
- ☐ Choose not to response

3. Sale of local food (e.g. food produced by urban, peri-urban and rural producers in the municipal area)

Do you market or label your products as "local"?

- ☐ Yes
- ☐ No
- ☐ Do not know
- ☐ Choose not to response

Where does your business buy 'local' products?

- ☐ Do not buy local products
- ☐ Directly from local farmers
- ☐ From wholesalers
- ☐ From other retail outlets
- ☐ Other (*specify*)
- ☐ Do not know
- ☐ Choose not to response

From how many local farmers or growers do you buy produce directly?

- ☐ Less than 5
- ☐ 5-10
- ☐ 10-25
- ☐ 25-50
- ☐ 50-100
- ☐ Over 100
- ☐ Do not know
- ☐ Choose not to response

Which types of local products do you buy and sell? *Circle or add specific product details as appropriate*

- ☐ Fruits
- ☐ Vegetables – roots, tubers (potato, sweet potato, cassava)
- ☐ Other vegetables
- ☐ Meat
- ☐ Bread, cereals & grains (e.g. rice, millet, maize etc.)
- ☐ Eggs
- ☐ Fish & shellfish (fresh or dried)
- ☐ Dairy products (dried milk, liquid milk, cheese, yoghurt, curds, etc.)
- ☐ Pulses, seeds & nuts (or foods made with these ingredients)
- ☐ Sugars & sweeteners (e.g. honey, syrups)
- ☐ Fats & oils
- ☐ Processed items (e.g. noodles, biscuits, cakes, snacks/fritters)
- ☐ Mushrooms
- ☐ Other (*specify*).....
- ☐ Do not know
- ☐ Choose not to response

How easy is it for your business to get local products?

- ☐ Always easy
- ☐ Sometimes easy sometimes difficult
- ☐ Always difficult
- ☐ Impossible
- ☐ Do not know
- ☐ Choose not to response

Do you stock any products that have a specific 'local food' label?

- ☐ Yes
- ☐ No
- ☐ Do not know
- ☐ Choose not to response

If yes, specify what types of products

How important is it to your business to inform your customers of where the food they buy comes from?

- ☐ Very important
- ☐ Quite important
- ☐ Not important
- ☐ Has not occurred to us to do that
- ☐ Do not know
- ☐ Choose not to response

Is there a drive or a directive from the national or regional government to support more local supply chains/ promote domestic production/restrict imports?

- ☐ Yes, promote domestic production
- ☐ Yes, restrict imports
- ☐ Yes, support local supply chains
- ☐ No
- ☐ Do not know
- ☐ Choose not to response

If yes, what kinds of incentives are provided for businesses to work more with local products & supply chains?

- ☐ Financial incentives (*please specify*).....
- ☐ Technical support
- ☐ Marketing support & promotion
- ☐ Knowledge and information provision
- ☐ Other (*specify*)
- ☐ Don't know of any such incentives
- ☐ Choose not to response

4. Total value of local produce

If your customers specifically request local products, which types of products do they request most? *Only read the question out loud and select the most appropriate answers. Probe the interviewee further if no answers are forthcoming.*

- ☐ Fruits (*specify which types*)
- ☐ Vegetables (*specify which types*)
- ☐ Meat (*specify which types*)
- ☐ Bread, cereals & grains (*specify which types*)
- ☐ Eggs
- ☐ Fish & shellfish (*specify which types*)
- ☐ Dairy products (*specify which types*)
- ☐ Pulses, seeds & nuts (*specify which types*)
- ☐ Sugars & sweeteners (*specify which types*)
- ☐ Fats & oils (*specify which types*)
- ☐ Mushrooms
- ☐ Other (*specify*)
- ☐ Do not know
- ☐ Choose not to response

Are local products cheaper or more expensive than non-local products?

- ☐ Yes local products are cheaper
- ☐ No, both are the same
- ☐ No local products are more expensive
- ☐ Other (*specify*)
- ☐ Do not know
- ☐ Choose not to response

Of your total food sales per year, what proportion is from local products?

- ☐ 0-25%
- ☐ 25-50%
- ☐ 50-75%
- ☐ 75-100%
- ☐ Do not know
- ☐ Choose not to response

Would it be possible for your business to substitute more local products for imported products?

- ☐ Yes
- ☐ No
- ☐ Do not know
- ☐ Choose not to response

What prevents your business from selling/using more local products? *Only read the question out loud and select the most appropriate answers. Probe the interviewee further if no answers are forthcoming.*

- ☐ Cannot afford local products, prices too high

- ☐ No knowledge of what local products are available
- ☐ Range of types of local products too limited
- ☐ Volume of available local products too low
- ☐ No logistical means of getting local products
- ☐ No or low customer demand
- ☐ Customers prefer “imported products” because of their better quality or taste
- ☐ No funding or possibilities for marketing of local products/local product visibility
- ☐ Other (*specify*)
- ☐ Do not know
- ☐ Choose not to response

What is needed to facilitate/improve local supply food chains? *Only read the question out loud and select the most appropriate answers. Probe the interviewee further if no answers are forthcoming.*

- ☐ New/improved information and knowledge on local products/supply chains
- ☐ Improved coordination/collaboration among producers to pool local supply
- ☐ Improving quality of local production
- ☐ New/improved infrastructure (e.g. roads, centralised food distribution hubs)
- ☐ Training and technical assistance
- ☐ New/improved connections between various actors in the local supply chain
- ☐ Product labelling
- ☐ Policy or financial incentives
- ☐ Other (*specify*)
- ☐ Do not know

Annex 2: Food producer survey⁸

Do you market or label your products as “local”?

- ☐ Yes
- ☐ No
- ☐ Do not know
- ☐ Choose not to response

Which types of products do you sell at different markets in the city? *Circle or add specific product details as appropriate*

- ☐ Fruits
- ☐ Vegetables – roots, tubers (potato, sweet potato, cassava)
- ☐ Other vegetables
- ☐ Meat (please specify)
- ☐ Cereals & grains (e.g. rice, millet, maize etc.)
- ☐ Eggs
- ☐ Fish & shellfish (fresh or dried)
- ☐ Dairy products (dried milk, liquid milk, cheese, yoghurt, curds, etc.)
- ☐ Pulses, seeds & nuts (or foods made with these ingredients)
- ☐ Processed items (e.g. noodles, biscuits, cakes, snacks/fritters)
- ☐ Mushrooms
- ☐ Other (*specify*).....
- ☐ Do not know
- ☐ Choose not to response

Where do you sell your products locally?

⁸ See footnote 2

- ☐ We do not sell our products on any market in the city
- ☐ Household deliveries/drop off to collection points
- ☐ Bulk-buying groups or co-ops
- ☐ On-farm sales
- ☐ Street markets or Farmers markets
- ☐ Whole sale markets
- ☐ Public offices or institutions (hospitals, government offices, schools)
- ☐ Supermarkets
- ☐ Grocery or speciality stores (*specify*).....
- ☐ Private catering (*restaurants, etc., specify*).....
- ☐ Other
- ☐ Do not know
- ☐ Choose not to response

What is needed to support you to sell a larger share of your products on markets in the city *Only read the question out loud and select the most appropriate answers. Probe the interviewee further if no answers are forthcoming.*

- ☐ New/improved information and knowledge (*specify*).....
- ☐ Improved coordination/collaboration among producers to pool local supply
- ☐ Improving quality of local production
- ☐ New/improved infrastructure (e.g. roads, centralised food distribution hubs)
- ☐ Training and technical assistance (*specify*).....
- ☐ New/improved connections between various actors in the local supply chain
- ☐ Product labelling
- ☐ Policy or financial incentives
- ☐ Other (*specify*)
- ☐ Do not know



**Food and Agriculture
Organization of the
United Nations**



Milan Urban Food Policy Pact Monitoring Framework

March 2021 version

Indicator 33: Annual proportion of urban organic waste collected that is re-used in agricultural production taking place within municipal boundaries

MUFPP framework of actions' category: Food production

The indicator measures the percentage of urban organic waste collected and recycled that is re-used in urban and peri-urban agriculture production

Overview table

| MUFPP Work stream | Food production |
|--|---|
| MUFPP action | Improve (waste) water management and reuse in agriculture and food production through policies and programmes using participatory approaches |
| What the indicator measures | The indicator measures the percentage of urban organic waste collected and recycled that is re-used in urban and peri-urban agriculture production |
| Which variables need to be measured / what data are needed | -The total tonnage of urban organic waste collected in the city -The total tonnage of urban organic waste that is recycled -The total tonnage of recycled organic waste that is used in urban and peri-urban agriculture production (e.g. agriculture taking place within municipal boundaries) |
| Unit of measurement (i.e. Percentages, averages, number, etc.) | Tonnage and percentage of organic waste collected and re-used |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | The organic components of municipal solid waste |
| Possible sources of information of such data | Data on formal organic waste collection and management may be available from municipal bodies and/or private contractors. Additional and informal collection data may be available from NGOs and community organisations. Information can be sourced from municipal records, service providers, community profiles and household surveys. UN-Habitat is collecting information on solid waste |

| | |
|---|---|
| | management and discharge in more than 1000 cities that are part of the City Prosperity Initiative ¹ . |
| Possible methods/tools for data-collection | Analysis of records and surveys |
| Expertise required | |
| Resources required/ estimated costs | |
| Specific observations | It is recognised that in many cities, solid waste collection and management data are currently incomplete or not available. Cities have varying policies that define appropriate waste management, with different levels of treatment and data collection. Cities that have more advanced systems should be able to report other aspects of waste management such as recycling that can be disaggregated by different components and uses. |
| Examples of application | New York City (USA) has set a zero-waste target by 2030. In 2016, the NYC Department of Sanitation (DSNY) has collected more than 60,000 tons of organic waste. Most of the organic waste collected in NYC is used to create compost, but as per 2018 part of it will be incinerated for energy production. For those not yet receiving curbside organics pickup, DSNY continues to develop drop-off sites for organic waste. There are now more than 88 drop-off sites in addition to at least 225 community composting sites, which divert an estimated 1,200 tons of organic waste per year. As per 2016, certain New York City businesses were required by law to separate their organic waste for beneficial use (composting, anaerobic digestion or other) ² . |

Rationale/evidence

The indicator “Annual proportion of urban organic waste collected that is re-used in urban and peri-urban agricultural production” relates to Sustainable Development Goal 11 (Make cities and human settlements inclusive, safe, resilient and sustainable), Target 11.6: ‘By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management’³. It also relates to SDG 12 (Ensure sustainable consumption and production patterns), Target 12.5: ‘By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse’.

Regardless of the context, managing solid waste is one of the important challenges of urban areas of all sizes. Cities generate enormous amounts of waste from urban households, industries and markets⁴. Large amounts of this Municipal Solid Waste (MSW) mostly end up in non-engineered landfills or polluting the urban environment, especially in low-income countries where sanitation infrastructure is less developed. A shift from waste(water) disposal to Reduce, Recycle and Reuse practices⁵, is in many cases, a ‘must’ as limited water resources increase competition for drinking and irrigation water, while some other resources like phosphorus are non-renewable and especially poorer countries will be the first to feel increasing fertiliser prices.

¹ <https://unhabitat.org/urban-initiatives/initiatives-programmes/city-prosperity-initiative/>

² <http://www1.nyc.gov/assets/foodpolicy/downloads/pdf/2017-Food-Metrics-Report-Corrected.pdf>

³ The SDG Indicator 11.6.1 used is: Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities

⁴ Pay Drechsel, Bernard Keraita, Olufunke O. Cofie and Josiane Nikiema. Productive and safe use of urban organic wastes and wastewater in urban food production systems in low-income countries. In: De Zeeuw H. and P. Drechsel. Cities and agriculture- Developing Resilient Urban Food Systems, 2015. Earthscan. <http://www.ruaf.org/process-and-tools-multistakeholder-planning-urban-agro-food-systems>

⁵ UNEP, 2011. Towards a green economy: Pathways to sustainable development and poverty eradication. United Nations Environment Programme (UNEP). Available from: www.unep.org/greeneconomy.

In general, the organic fraction is the largest one within domestic waste. Studies indicate that between 28-64% (varying from high to low income countries) of urban solid waste is biodegradable and hence of immediate interest in recycling⁶. Many organic wastes are nutrient-rich and can be productively used in intra- and peri-urban agricultural systems enhancing resource recovery and circular economies as well as the resilience of the urban metabolism.

Benefits of organic waste composting and recycling are to:

- Reduce overall waste volume and transport costs
- Replenish the soil humus layer and enhances soil quality
- Extend existing landfill capacity and landfill lifetime
- Enhance recycling and incineration operations by removing moist organic matter from the waste stream
- Promote environmentally sound practices and reduce the environmental impact of disposal sites, such as the reduction of methane generation at landfills.
- Be flexible for implementation at different levels, from household efforts to large-scale centralised facilities; i.e., can also be started with very little capital and operating costs.
- Address possible health impacts from faecal matter due to the composting (sanitising) process.
- Integrate existing informal sectors involved in the collection, separation and recycling of wastes, and contributes to the 'green economy' of a city.

However, despite these benefits, productive reuse of waste faces a variety of challenges and current MSW management practices show very small proportions of MSW being recycled and/or composted. Challenges range from securing cost recovery for up- and out-scaling successful examples of planned reuse, and the acceptance of safety practices within the informal reuse sector in urban and peri-urban areas. However, the largest concern related to waste reuse are possible sources of contamination (toxic substances like heavy metals, pathogens), especially where waste products are used in food production. Opportunities for addressing the first challenge include more attention to business models which can build on different value propositions beyond normal 'composting', and for the second challenge they include more attention to social marketing options, private-sector engagement and incentive systems for catalysing behaviour change towards the adoption of safety practices.

It should also be noted that productive re-use of organic waste in urban and peri-urban agriculture will only be successful if certain quality and quantity requirements are fulfilled:

Quality: Several cities promote organic waste composting for environmental reasons and may provide compost to farmers for nominal fees. However and in case of commercial composting, urban farmers with a sufficiently high willingness to pay for compost -allowing compost stations to break even- are those producing for the urban market, not subsistence farmers. Also in commercial agriculture production, crops of short rotation like exotic vegetables, need most of all a nitrogen fertiliser, less than an organic soil ameliorant. Where producers have poor tenure security they will also seek a more short-term fertiliser supply than a long-term soil ameliorant (see also Indicator 28 *Proportion of total agricultural population with ownership and secure tenure rights over agricultural land*). There are several technical options to 'boost' the fertiliser value and attractiveness of the MSW compost, including co-composting.

Quantity: Urban waste management is usually only interested in embarking on composting if this can reduce a significant volume of the waste. To start a compost station for saving, for example 3% of its transport volume, is usually not worth the effort. However, most intra- and peri-urban farming systems can hardly absorb any larger amounts of compost. A detailed market assessment by IWMI in Kumasi

⁶ See footnote 4

and Accra, Ghana found that, of the organic waste which is collected and not otherwise used, if composted, less than 1% could be absorbed across all intra- and peri-urban farming systems if the willingness to pay should cover compost operational production costs. It was only in smaller cities with less waste generation, like in Tamale (also Ghana), that up to 5% was possible, and higher percentages can be expected from towns. But also in a city like Accra, the percentage can increase up to 20% if, for example, the non-agricultural demand, like from the housing (ornamental gardens) and forestry/park sector is considered⁷.

Glossary/concepts/definitions used

Urban waste can be solid, partially solid (e.g., manure, sludge) or liquid (grey water), organic or inorganic, recyclable or non-recyclable. Of interest to agriculture as a source of nutrient and organic matter is the **organic waste**: the organic fraction of municipal solid waste and agro-industrial waste, and as a source of water and nutrients also domestic wastewater. Typical types of organic waste commonly used in urban farming are:

- **Solid waste**: Domestic and market wastes, food waste including vegetable and fruit peelings, and charcoal ash. This also includes waste from institutions and commercial centres.
- **Horticultural and agricultural waste**: Common especially in high-income areas: garden refuse, leaf litter, cut grass, tree cuttings, weeds, animal dung, crop residues, waste from public parks, etc.
- **Agro-industrial waste**: Waste generated by abattoirs, breweries, timber mills, poultry farms, food processing and agro-based industries.
- **Sludge and biosolids**: Human faecal matter from septic tanks and treatment plants.

Waste collected refers to waste that is routinely collected from specific addresses or designated collection points. Waste collection is conducted directly by municipal authorities or private contractors licensed/commissioned by municipal authorities with a regular schedule of the day of the week and time of collection. In some cases private waste collection companies have contracts with clients individually and provide collection services.

Organic waste recycling involves the recycling of organic wastes into valuable products such as fertiliser, biofuels and animal feed:

- **Animal Feed** – Some types of non-hazardous organic waste, with appropriate amounts of specific nutrients, can be used by certain types of animal farms or feed producers for livestock.
- **Composting** – This is a broad term used to define many methods of breaking down organic matter to be used as fertiliser. Composting is as a biological process that involves aerobic biological decomposition of organic materials to produce stable humus-like product. **Vermicomposting** refers to the production of compost by earthworms. While any organic waste is biodegradable, certain composting methods prove more efficient for different organic waste types.
- **Anaerobic Digestion** – This process involves using anaerobic microbes (those that exist and grow in environments without oxygen) to transform organic waste into energy. This process may produce biogas and rets-products may be used as bio-fertilisers.

Preparations

Data collection and analysis starts from identification of waste collection and management practices in the city and of possible data sources needed for this indicator (see further data collection).

⁷ See footnote 4

Sampling

Data collection is best done at the level of the city. Where city wide data are not available, data can be collected from specific agricultural or waste projects or specific waste management and recycling business to get a first insight into waste reuse practices and potential.

Data collection and data disaggregation

In order to generate the annual proportion of urban organic waste collected by the city that is re-used in urban and peri-urban agricultural production, there is a need to define the three components that are core to this indicator:

- The total tonnage of urban organic waste collected in the city. Organic waste may already be separately collected at the source where the waste is generated or waste separation may take place at disposal and/or treatment sites.
- The total tonnage of urban organic waste that is recycled. Out of the total tonnage organic waste collected, the proportion of the organic waste that is recycled should be estimated. If data are available, data can be disaggregated for different products: e.g. recycling in form of animal feed, (vermi)compost or incineration for production of biogas and bio-fertiliser.
- The total tonnage of recycled organic waste that is sold or distributed to farmers (e.g. used in urban and peri-urban agriculture).

1. Organic waste collected

The indicator refers to organic waste that is routinely collected directly by municipal authorities or private contractors. If data are available, informal waste collection schemes by waste pickers or community organisations could be included. Waste collected however excludes the proportion of organic waste that was taken and recycled before the waste collection, for example the organic waste composted by individual households, organisations (like schools, industries) and community gardeners. The latter will require other methods of data collection like household, institutional and garden surveys. Impacts of waste collection and composting campaigns targeting households may contribute to reducing amounts of organic waste collected and thus indirectly be monitored by applying this indicator.

2. Organic waste recycled

Secondly the indicator refers to the proportion of the total amount of organic waste collected that is recycled in form of animal feed, humus or compost. Formal recycling is done by municipal services or similar institutions, or by public or private corporations and specialised enterprises. Informal recycling may take place in cities in the Global South in form of landfill scavenging for example.

3. Organic waste re-used in urban and peri-urban agriculture

Finally the indicator tries to single out the proportion of the total amount of organic waste collected, recycled and used in urban and peri-urban agriculture as compared to other uses (by households, industries, in rural agriculture, etc.).

Once data on organic waste recycling are available, cities can use these data for calculating other indicators such as “the reduction of GHG emissions and fossil energy use as a result of (an increase in) the reuse of urban organic wastes as compost in urban and peri-urban agriculture and forestry”.

Data analysis/calculation of the indicator

The indicator can be computed by:

Annual proportion of urban organic waste collected that is re-used in urban and peri-urban agricultural production= $\left[\frac{\text{Total tonnage of organic waste re-used in urban and peri-urban agriculture}}{\text{Total tonnage of organic waste collected}} \right] \times 100$

References and links to reports/tools

Pay Drechsel, Bernard Keraita, Olufunke O. Cofie and Josiane Nikiema. Productive and safe use of urban organic wastes and wastewater in urban food production systems in low-income countries. In: De Zeeuw H. and P. Drechsel. Cities and agriculture- Developing Resilient Urban Food Systems, 2015. Earthscan. <http://www.ruaf.org/process-and-tools-multistakeholder-planning-urban-agro-food-systems>



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Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 34: Existence of policies/programmes that address the reduction of GHG emissions in different parts of the food supply chain

MUFPP framework of actions' category: Food supply and distribution

The indicator assesses the existence of policies/programmes that address the reduction of GHG emissions/ in different parts of the food supply chain (e.g. processing, storage, transport, packaging, retail, cooking, waste disposal etc.)

Overview table

| MUFPP Work stream | Food supply and distribution |
|--|---|
| MUFPP action | Assess the flows of food to and through cities to ensure physical access to fresh, affordable foods in low-income or underserved neighbourhoods while addressing sustainable transportation and logistics planning to reduce carbon emissions with alternative fuels or means of transport. |
| What the indicator measures | The indicator assesses the existence of policies/programmes that address the reduction of GHG emissions/ in different parts of the food supply chain (e.g. processing, storage, transport, packaging, retail, cooking, waste disposal etc.) |
| Which variables need to be measured / what data are needed | Policy initiatives, research initiatives, practical initiatives (e.g. technical innovation; public engagement & behaviour change) |
| Unit of measurement (i.e. Percentages, averages, number, etc.) | This is an assessment of action that is being taken by the municipality and its partners to address reduction in GHG emissions. These could be actual GHG emission calculations or practical initiatives or clear policy guidelines and GHG reduction targets, etc. |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Metrics could include: <ul style="list-style-type: none"> - Number (and types) of policies and regulations - Number of city partnerships formed to specifically address GHG emissions - Number and type of information and communication mechanisms and target groups - Number of research studies - Number of GHG emissions calculations relating to the food system (for example, impact of the last mile supplying system, total or specific food transport GHG emissions, organic waste related GHG emissions). |

| | |
|---|---|
| | - Number of practical initiatives to support a low-carbon food system |
| Possible sources of information of such data | -Climate change or sustainability/resilience, or environmental departments; -Policy and planning department; -Universities and colleges; -Food governance structures; -Local food & climate change networks; -Environmental NGO's and campaigners; -Businesses |
| Possible methods/tools for data-collection | Policy documents, reports, research proposals, climate change campaigns, interviews with key stakeholders |
| Expertise required | Research, interviewing, data analysis |
| Resources required/ estimated costs | |
| Specific observations | Some cities may have been able to quantify, monitor and reduce food system related GHG emissions in certain areas of the food system. For most however, measurement and monitoring of GHG emissions in any single food business, let alone food sector, or indeed whole city food system, is difficult to do. As yet there is no one agreed way to do this. Most cities would need to hire specialist consultants at high cost. However, cities need to act and therefore need to understand how best to act, so any work that supports this intention is very important. The responsibility for making change happen has to be shared across many different actors. There may be overlaps with this and other indicators, so this one should focus on any important data gaps. |
| Examples of application | [FAO to add here a link to the experience you had in AGS/ESN looking for feasible ways to determine the impact of the last mile supplying system on GHG emissions] |

Rationale/evidence

The overall purpose of this area of work is to increase understanding of how to achieve targeted improvements in the food chain. Reducing fossil fuel-based energy consumption is essential to meet global commitments to reduce greenhouse gas emissions, a man-made contributor to climate change. Sustainable Development Goal (SDG) 12 is 'to ensure sustainable production and consumption patterns'¹.

One regional analysis for Europe finds that food accounts for 31% of the EU-25's total GHG impacts, with a further 9% arising from the hotel and restaurants sector (European Commission, 2006)².

The Paris Agreement in December 2015 is the first truly global effort to reduce emissions. To date, 160 UNFCCC parties have made voluntary pledges to reduce emissions up to 2030, including China, the US and the European Union (on behalf of the EU nations)³.

The impacts of climate change will present challenges to achieve many of the Sustainable Development Goals (SDGs). For example, climate change undermines progress made towards zero hunger and climate variability raises the risk of disruptions to food supply and distribution. "To achieve SDG2 and effectively respond to climate change, we require a transformation of our agriculture sectors and food

¹ Sustainable Development Goals and indicators <https://unstats.un.org/sdgs/tierIII-indicators/>

² What are the best opportunities for reducing GHG emissions in the food system (including in the food chain)? Tara Garnett, 2010, Food Climate Research Network https://www.fcrn.org.uk/sites/default/files/Food_Policy.pdf

³ United Nations Climate Change: Paris Agreement 2015 http://unfccc.int/paris_agreement/items/9485.php

systems,” (José Graziano da Silva, Director-General of the Food and Agriculture Organization of the United Nations (FAO))⁴.

At a city and city region level there is now much more discussion about how to build a low carbon food economy or food system. However it’s an area of great complexity and there are many unanswered questions that relate specifically to impacts and methodologies for measurements.

Food flow analysis may provide information on where improvements are needed: GHG emissions or food loss and waste volumes generated in different parts of the food chain (e.g. production, processing, storage, transport, packaging, retail, cooking, waste disposal etc.). Food flow analysis can also provide information on the number of jobs generated at different parts of the food chain, opportunities for increased local food business, or on the extent to which local consumption is covered by regional production versus food imports from outside the region⁵.

Local governments, through policy and investment in practical programmes, can support social, technological and organisational innovation in processing, distribution, logistics and trading activities to facilitate the transition to a sustainable and resilient food system. (See Indicator 35: *Presence of a development plan to strengthen resilience and efficiency of local food supply chains logistics*). For example, municipalities can apply closed cycles principles of material and energy to the food system from a circular economy and bio-economy perspective. Many of these food chain improvements are covered under other indicators (e.g. food production, number of food jobs, food markets providing fresh fruits and vegetables, waste recovery).

This indicator should therefore focus on areas not covered by other indicators. Each city should consider this question: *To what extent do other indicators already cover areas related to targeted improvements in the food chain and what is still missing?* The issue of GHG emissions may well be one that is missing, and should be addressed in some way, even if not entirely satisfactory.

Glossary/concepts/definitions used

What can cities do to address the reduction of GHG emissions in different parts of the food supply chain?

The C40 Food Systems Network sets out how through policy and practical initiatives, cities can use their own powers to facilitate transformation in the following ways:

- Food Procurement and Sustainable Diets: Addressing purchases that are controlled by the municipality, for example procurement of food for schools, hospitals and elderly homes.
- Food Production: Promoting and strengthening urban and peri-urban food production to support short food chains, reduce building energy demand (cooling and heating) in the production process and mitigate the urban heat island effect.
- Food Supply and Distribution: Developing sustainable food transportation and logistics by improving alternative fuels or means of transport; enhancing farmer’s markets, informal markets, retail and wholesale markets; and strengthening the food supply chain to withstand disruptive events such as natural disasters.

⁴ Climate Action Priority for Food Security and Zero Hunger; UNFCCC

<https://cop23.unfccc.int/news/climate-action-priority-for-food-security-and-zero-hunger>

⁵ City Region Food System assessment toolkit <http://www.fao.org/in-action/food-for-cities-programme/toolkit/introduction/en/>

- Food Waste: Raising awareness of and promoting the food waste “pyramid” – reducing of food loss and waste, facilitating food recovery for people and animals, and improving collection of waste for biogas or fertilizers.⁶

Evidence of policies/programmes that address the reduction of GHG emissions

There are a number of approaches that could be used as proxy indicators or as evidence that action has been taken:

Public procurement as a vehicle for driving GHG emission reductions; City of Malmo

By 2020, the City of Malmo in Sweden aims to be climate neutral and by 2030 the whole municipality aims to run on 100% renewable energy. Greenhouse gas emissions relating to food shall decrease by 40 % by 2020, compared to the 2002 levels. Malmo’s goal is to serve 100% organic food in all of its public catering services by 2020 as part of the strategy for achieving GHG reduction targets. The city is using an Eat S.M.A.R.T. model to help get the balance between eating healthily and decreasing the impact on the environment⁷.



Understanding city emissions better

The City of Bristol, UK has used national emissions data from which to calculate a more detailed breakdown of percentage contributions to total city CO2 emissions by sector; and also to calculate specific municipality contributions⁸.

Urban food production & circular economy initiatives

There are many well-known examples of urban micro-businesses or community initiatives that are based on circular economy principles and based in or near to urban centres:

- Mushrooms production using recycled coffee grounds as a growing medium
- Vehicles run on recycled vegetable oil from catering establishments
- Reduction of methane from land-fill sites by reducing the amount of wasted edible food through redistribution, or composting of food waste material.

Preparations

The team responsible for monitoring this indicator should agree on:

1. Scope and parameters of the assessment
2. Most useful and feasible metrics (useful to discuss these with the municipality and any key stakeholders, ideally in a roundtable situation)

⁶ C40 The Food Systems Network and EAT <http://www.eatforum.org/programmes/>

⁷ Policy for sustainable development and food; the City of Malmö
http://malmo.se/download/18.d8bc6b31373089f7d9800018573/Foodpolicy_Malmo.pdf

⁸ Our resilient future: a framework for climate and energy security, City of Bristol, 2015
https://bristol.citizenspace.com/city-directors-department/climate-and-energy-framework/supporting_documents/OurResilientFuture_v2.pdf

3. Type of data disaggregation and categories that will be used (linked to above discussions)
4. Data collection method (analysis of records or interviews)
5. If interviews are to be used, questions have to be designed. Training of interviewers may be needed.

Sampling

N/A

Data collection and data disaggregation

This is an assessment of policy and action that is being taken by the municipality and its partners to address reduction in GHG emissions. These could be actual GHG emission calculations or practical initiatives or clear policy guidelines and GHG reduction targets, etc.

An initial roundtable discussion with key stakeholders would help to inform the scope of this assessment and agree possible metrics. The breadth of the assessment is important to agree. What are the policy priorities and where should the focus be? What are the main gaps in related data from other indicators?

Metrics could include, for example:

- Number (and types) of GHG-related policies and regulations
- Number of city partnerships formed to specifically address GHG emissions
- Number and type of GHG or climate change-related information, communication mechanisms and main target groups
- Number of food system GHG research studies
- Number of food system GHG emissions calculations
- Number of practical initiatives to support a low-carbon food system within local neighbourhoods, or start up support for new low carbon food enterprises
- Etc.

Follow up interviews may be needed with leaders of GHG reduction initiatives. It will be important to note level of involvement or support provided by the municipality in each case.

Data analysis/calculation of the indicator

An analysis of exiting policy and action could be presented as a brief report or presentation, ideally with recommendations for addressing gaps in data and new development needs.

If there are useful quantifiable figures for GHG emissions or even GHG reductions for specific sectors within the food system, they should be included and help to inform recommendations.

References and links to reports/tools

Policy

Policy for sustainable development and food; the City of Malmö

http://malmo.se/download/18.d8bc6b31373089f7d9800018573/Foodpolicy_Malmo.pdf

Sustainable food procurement in the city of Malmö

Gunilla Andersson, Environment department City of Malmö, October 2010

http://www.foodlinkscommunity.net/fileadmin/documents_organicresearch/foodlinks/publications/andersson-2012-malmoe.pdf

Tools for GHG calculations

There are many methodologies, most of which have their critics, and none of which is yet seen as the solution.

Life Cycle Assessment (LCA): Life cycle assessment determines the environmental impacts of products, processes or services, through production, usage, and disposal. It is a well-used approach in relation to measuring CO₂ emissions or climate change impacts, mainly by academics. It also tends to be very costly.

‘Methodological guidelines for calculating climate change related indicators of urban/regional food production and consumption: monitoring impacts of urban and peri-urban agriculture (UPA) and forestry on climate change mitigation and adaptation’. (Sukkel and Dubbeling, Nov 2014; RUAF Foundation)

This methodology provides measurement and quantification methods to design different urban/regional food production and consumption scenarios and to assess the hypothesis that increased urban and peri-urban agriculture and resource recycling will reduce the food (transport) related emissions, food kilometres and related energy use.

<http://www.ruaf.org/publications/guideline-3-methodological-guidelines-calculating-climate-change-related-indicators>

See further also: <http://www.ruaf.org/projects/monitoring-impacts-urban-agriculture-climate-change-adaptation-and-mitigation-cities>. This project implemented the following activities:

- **Design of a draft monitoring framework** with clear indicators and simple yet robust tools for the monitoring of the impacts of Urban and Peri-urban Agriculture and Forestry (UPAF) on climate change adaptation; mitigation and developmental benefits.
- **Field testing of the draft monitoring framework** in UPAF projects in 4 cities: Kesbewa (Sri Lanka), Rosario (Argentina), Kathmandu (Nepal) and Bobo Dioulassou (Burkina Faso) (field testing in the latter two cities was funded by the UN-HABITAT -Cities and Climate Change programme).
- In two cities (Kesbewa and Rosario): **the design of alternative scenarios for the development of urban food systems** in that city, and the calculation of expected impacts of each scenario (food-miles, emissions and energy use), as a basis for local decision making and planning.
- Facilitation of the **integration of UPAF as a component of the city and provincial climate change and urban development strategies** and securing adequate follow-up actions amongst others by training local researchers and local government staff on UPAF models, their inclusion in climate change programmes and the monitoring of their impacts.

For a report on Rosario. Calculations of GHG emissions comparing local versus more distant food production and various means of food transport:

<http://www.ruaf.org/sites/default/files/Consumo%20de%20combustible%20y%20emision%20de%20CO2%20comparando%20la%20produccion%20y%20transporte%20de%20vegetales%20hacia%20la%20ciudad%20de%20Rosario%20con%20una%20produccion%20local.pdf>

Food flow analysis approaches

City Region Food System Toolkit: <http://www.fao.org/in-action/food-for-cities-programme/toolkit/introduction/en/>

Last mile logistics

FAO is testing an approach on “the last mile logistics and related GHG emissions, for example using wholesale markets as entry point. Many wholesale markets have good data on products and buyers (and their businesses). In this case, one can calculate the average routes from wholesaler to retailers and their associated GHG.



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Indicator 35: Presence of a development plan to strengthen resilience and efficiency of local food supply chains logistics

MUFPP framework of actions' category: Food supply and distribution

The indicator allows for (self) assessment of the presence, functioning and effectiveness of a development plan to strengthen resilience and efficiency of local food supply chains logistics. It also helps to define areas for improvement.

Overview table

| MUFPP Work stream | Food supply and distribution |
|--|--|
| MUFPP action | Support improved food storage, processing, transport and distribution technologies and infrastructure linking peri-urban and near rural areas to ensure seasonal food consumption and reduce food insecurity as well as food and nutrient loss and waste with an emphasis on diversified small and medium scale food businesses along the value chain that may provide decent and stable employment. |
| What the indicator measures | The indicator allows for (self) assessment of the presence, functioning and effectiveness of a development plan to strengthen resilience and efficiency of local food supply chains logistics. It also helps to define areas for improvement. |
| Which variables need to be measured / what data are needed | Information is collected on Presence (yes/no), as well as a set of metrics and variables indicated below. Details of relevant existing development plans, by type; the list of metrics above; can be conducted as a complementary audit study |
| Unit of measurement (i.e. Percentages, averages, number, etc.) | Metrics proposed include: <ul style="list-style-type: none"> - Number (by type) of relevant developments plans - Number (by type) of different stakeholders involved with i) developing and ii) implementing plans - Number (by type) of food businesses involved - Number of meetings held in relation to developing the plan(s) - Number of i) municipal departments; and ii) municipal staff involved - Amount (and sources) of budget - Number (by type) of initiatives/actions taken by the multi-stakeholder body to implement the plan (including any funding or other support provided by local government) |

| | |
|---|---|
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | See above |
| Possible sources of information of such data | -Municipal funding proposals and reports; -Municipal Agriculture, Food Supply Chain and Markets departments; -Development agencies and support organisations; -NGO's; -Food system labour organisations; -Colleges and universities; -Key stakeholders e.g. leading scientists and researchers; food entrepreneurs and innovators; processing, wholesale and distribution companies; food governance bodies; local food support initiatives |
| Possible methods/tools for data-collection | -Desk top study of existing reports and documents -Interviews with key stakeholders |
| Expertise required | Research, design delivery and analysis of interview data |
| Resources required/estimated costs | |
| Specific observations | There may be one single plan or there may be several plans that have elements of the local food system included. Each city will need to decide whether to focus only on projects and plans supported by the municipality or to look wider. |
| Examples of application | |

Rationale/evidence

Purpose: The overarching purpose of this area of work is to improve and optimise local/regional food processing, storage and distribution capacity. This is important because the city i) provides a potential market place for food producers in and around the city (the scale and distance depending on the specifics of the city region), and ii) benefits from access to local/regional produce for economic, social and environmental sustainability reasons. Optimising local supply also relates to building regional food system resilience. If the local supply chain is unable to optimise its capacity due to insufficient infrastructure that would otherwise enable flows of food into the city, then this is an area that should be addressed.

Resilience and local food systems: Much has been written over the past few decades about the role that local food systems can play in increasing food security and food system resilience: travels less, is fresher, therefore more nutritious; provides local jobs etc. This is often presented as a counter argument for the mainstream 'just in time' distribution system that currently dominates and is actually quite vulnerable to disruptions caused by man-made or natural crises. Recent examples include the impact of Storm Sandy on the city of New York in 2012 where floods prevented food and drink deliveries for several days. Another example is the UK truck driver protests over fuel prices in 2000 when supermarkets shelves were left bare and emergency food rationing was used in some places.

Oliver de Schutter, (UN Special Rapporteur on the right to food, 2008-2014) drew attention to how food prices, increasingly volatile since 2008, have raised serious food availability concerns in developing countries and called for priority investments in agro ecological and poverty-reducing forms of agriculture. Mitigating the exposure of vulnerable populations to food price volatility means avoiding excessive reliance on trade, and ensuring resilient local food production systems. De Schutter also comments:

- "Food democracy must start from the bottom-up, at the level of villages, regions, cities, and municipalities"
- "Food security must be built around securing the ability of smallholder farmers to thrive"
- "Respect for their access to productive resources is key in this regard"

- “By 2050 more than 6 billion people – more than two in three - will live in cities. It is vital that these cities identify logistical challenges and pressure points in their food supply chains, and develop a variety of channels to procure their food, in line with the wishes, needs and ideas of their inhabitants.”
- “Emerging social innovations in all parts of the world show how urban consumers can be reconnected with local food producers, while at the same time reducing rural poverty and food insecurity, such innovations must be supported.”¹

Role of the city: The city, as a crucial market place, therefore needs to provide support for improved food storage, processing, transport and distribution technologies and infrastructure linking peri-urban and near rural areas. The presence of a development plan to strengthen resilience and efficiency of local food supply chains logistics is one way to assess whether or not this support is happening. However, of course it is not just the presence, but also the implementation of such a plan that matters.

Such a plan could be part of a municipal or regional development plan, or it could be more related to innovation and scientific research of city institutions.

For example in Curitiba, Brazil, a development project includes support for distribution of regional production, as well as creating a culture of consumption of these products, including a brand that enables traceability.

The municipality of Milan, Italy, has guidelines to support social, technological and organisational innovation in processing, distribution, logistics and trading activities to facilitate the transition to a sustainable food system. It aims to promote the development of Milanese agri-food scientific research that relates to the urban system and to encourage the development of innovative projects in the agrifood sector.

Glossary/concepts/definitions used

Logistics and supply chain management: An article from Michigan University provides the following useful definitions. The terms logistics and supply chain management are sometimes used interchangeably. What is considered supply chain management in the United States is more commonly known as logistics management in Europe. Purchasing, materials handling, logistics, transportation, inventory control and supply chain management have continued to evolve, causing many of these functional areas to intersect with one another. While these two terms do have some similarities they are, in fact, different concepts with different meanings. Supply chain management is an overarching concept that links together multiple processes to achieve competitive advantage, while logistics refers to the movement, storage and flow of goods, services and information within the overall supply chain. One process cannot exist without the other.

There are some key differences between the two terms:

- Supply chain management is a way to link major business processes within and across companies into a high-performance business model that drives competitive advantage.
- Logistics refers to the movement, storage and flow of goods, services and information inside and outside the organization.
- The main focus of supply chain is competitive advantage, while the main focus of logistics is meeting customer requirements.

¹ Democracy and diversity can mend broken food systems - final diagnosis from UN right to food expert, Olivier De Schutter, 2014

<http://www.srfood.org/en/democracy-and-diversity-can-mend-broken-food-systems-final-diagnosis-from-un-right-to-food-expert>

- Logistics is a term that has been around for a long time, emerging from its military roots, while supply chain management is a relatively new term.
- Logistics is an activity within the supply chain. (Michigan State University) ²

Supply chain efficiency and effectiveness: PLS Logistics Services provides a useful definition. Supply chain efficiency is an organization's core standard of performance. Efficiency measures the ratio of work performed in a process and whether the process is using the best practices and making the most of available resources. Supply chain efficiency doesn't always guarantee effectiveness. A supply chain might efficiently lessen costs, but if the end consumer is unhappy with the product, it's ineffective. An effective supply chain focuses on the outcome and external standards. Well-built supply chains improve margins, support expansion, drive positive consumer experiences, and reduce operating costs. Determining the best way to move a product to its destination takes consideration of optimizing order processing, receiving procedures, outbound schedules, and reverse logistics.³

Local food supply chain logistics: Based on the above definitions, the term 'local food supply chain logistics' is a merger of two functional areas and can be understood to refer to the movement, storage and flow of locally (in or close to the city) or regionally produced goods, services and information to ultimately meet customer requirements. Work in this area might focus on increases in efficiency, effectiveness and economic viability of the actual movement of products from farm to consumer. It might also focus on improving markets or raising consumer awareness. Each city will need to decide on appropriate parameters.

Examples of relevant development plans: These could include all sorts of practical innovations, some with a focus on technical logistical efficiency improvements, others with a focus on innovative business models or infrastructure support that helps to increase access to local produce. For example:

- Farmers markets or street markets
- Local produce festivals and promotions
- Local food sourcing directories and eating out guides
- Food hubs and new physical premises for distribution
- Expansion or improvements to wholesale and retail market locations
- Online platforms that support local food ordering and distribution
- Scientific studies on transport efficiencies, or GHG emission reductions or use of non-fossil fuel powered vehicles
- Improved (small scale) processing and packaging facilities that help increase capacity to deal with more local products
- Circular economy innovation and design for specific locations or businesses or types of products, etc.

Preparations

The team responsible for monitoring this indicator should agree on:

1. Scope, parameters and types of development plans to include (there may be a wide range of initiatives that contribute in different ways to strengthening the resilience and efficiency of local food supply chains logistics; leaders of such projects may not be from local government)

² Is Logistics the same as supply chain management, Eli Broad College of Business, Michigan State University
<https://www.michiganstateuniversityonline.com/resources/supply-chain/is-logistics-the-same-as-supply-chain-management/#.Wm8YyoS5z6w>

³ Supply chain management best practices: Efficiency, Effectiveness; PLS Logistics, 2016
<http://info.plslogistics.com/blog/supply-chain-management-best-practices-efficiency-effectiveness>

2. Type of data disaggregation and categories that will be used (see further below)
3. Data collection method (analysis of reports and documents, interviews with key stakeholders)
4. The key stakeholders to interview – people leading work on relevant development plans
5. If interviews are to be used, questions have to be designed. Training of interviewers may be needed.

Sampling

In the case of an audit, the aim will be to gather as much information as possible and to try and interview all key stakeholders i.e. those that are leading work on relevant development plans.

It could also be helpful to do a sample survey of project partners or beneficiaries of any large-scale support initiative to find out more about the impact of the development plan implementation on the local food chain.

Data collection and data disaggregation

Data to help with this indicator may be most usefully collected in the form of an audit. The audit may be more qualitative than quantitative but the following metrics could be explored, the combination of which would provide a good overview of current support. Inclusion of actions taken to implement plans will further strengthen the value of this particular indicator and sub-sets of data.

Metrics (and data disaggregation) proposed include:

- Number (by type) of relevant developments plans
- Number (by type) of different stakeholders involved with i) developing and ii) implementing plans
- Number (by type) of food businesses involved
- Number of meetings held in relation to developing the plan(s)
- Number of i) municipal departments; and ii) municipal staff involved
- Amount (and sources) of budget
- Number (by type) of initiatives/actions taken by the multi-stakeholder body to implement the plan (including any funding or other support provided by local government)

Data can be collected from existing documents, funding proposals, reports and registers (economic or market department, food business registers, agricultural programmes) followed up by interviews with key stakeholders. The interviews could be shaped to ask the same questions in more depth or breadth, depending on what existing data has already been found.

It could also be helpful to do a sampled survey of beneficiaries of any large-scale support initiative to find out more about the impact on the local food chain. This would depend on priorities and resources. (See sampling notes above).

Data analysis/calculation of the indicator

Once the audit is completed, this could form the basis for an overview document that serves as a baseline audit and can be revised on an annual basis. It may also help to identify gaps in support provision, or to identify the extent to which plans on paper are in reality being implemented.

Depending on the type of survey questions used, further analysis of information can be done, for example about location, access of producers to such infrastructure, infrastructure needs and requirements, vulnerability to climate change etc.

References and links to reports/tools

Local Food and economic development: a guide for Local Governments, March 2014

Mayors innovation project; Centre On Wisconsin Strategy, USA

This paper focuses on the roles cities can take to support economic development through the local food economy.

https://www.mayorsinnovation.org/images/uploads/pdf/Food_and_Economic_Development_Brief_updated.pdf



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Milan Urban Food Policy Pact Monitoring Framework

March 2021 version

Indicator 36: Number of fresh fruit and vegetable outlets per 1000 inhabitants (markets and shops) supported by the municipality.

MUFPP framework of actions' category: Food supply and distribution

The indicator measures the number of food markets or retail outlets providing fresh fruit and vegetables per 1000 inhabitants that are directly supported by the municipality in some way.

Overview table

| MUFPP Work stream | Food supply and distribution |
|--|---|
| MUFPP action | <ul style="list-style-type: none"> - Provide policy and programme support for municipal public food markets including farmers markets, informal markets, retail and wholesale markets, restaurants, and other food distributors, recognizing different approaches by cities working with private and public components of market systems - Improve and expand support for infrastructure related to market systems that link urban buyers to urban, peri-urban and rural sellers while also building social cohesion and trust, supporting cultural exchange and ensuring sustainable livelihood, especially for women and young entrepreneurs. |
| What the indicator measures | Number of food markets or retail outlets providing fresh fruit and vegetables per 1000 inhabitants that are directly supported by the municipality in some way. |
| Which variables need to be measured / what data are needed | Categories of shops by type and scale; categories of markets by type and scale; numbers of shops and markets per neighbourhood that sell fresh fruit and vegetables; total population figures by neighbourhood |
| Unit of measurement | Number |
| Unit(s) of Analysis (i.e people under 5 years old, etc.) | Number of fresh fruits and vegetables outlets per 1000 inhabitants; outlets supported by the municipality |
| Possible sources of information of such data | <ul style="list-style-type: none"> - Public food register or similar list held by food safety inspection team or Environmental Health Department(national or local government); - Economic Development Department; - City Markets Department; - Trader organizations or unions; Business Development partnerships; - Wholesale and retail consortia or representative bodies; - Greengrocer networks; - Local food activists; - Food governance body e.g. Food Policy Council, Public Health Department, - NGO's concerned with food access |

| | |
|---|--|
| Possible methods/tools for data-collection | Review of existing databases and reports; interviews with key stakeholders |
| Expertise required | Research, data analysis, interview design implementation and analysis, statistics |
| Resources required/estimated costs | |
| Specific observations | There are several challenges with this indicator. 1) It may be too much to measure both shops and markets so figures on either would be a good place to start. 2) It may be difficult to separate out which ones the municipality does or does not support. 3) Scale of retail or market outlet will determine overall total numbers of customer to a large extent, so this scale context needs to be reflected in some way. 4) The indicator could be changed to look at floor space per capita (see below), or area of shelves dedicated to volumes of fresh fruit and vegetables (see data section below). 5) The final figures could be worked out simply as totals but without any additional context this would not be very useful. 6) Alternatively, this work could be done as an audit on a neighbourhood basis, initially targeting specific neighbourhoods of concern, and gathering more useful comparative data across all neighbourhoods. As always, contextual notes need to be available alongside any indicator figures. Work on this indicator should be done alongside work on indicator 37 ' <i>Annual municipal investment in food markets or retail outlets</i> '. |
| Examples of application | New York City measures amount of grocery store space per person - specifically calculated as the square footage of supermarket floor space per capita by community district (p20). http://www1.nyc.gov/assets/foodpolicy/downloads/pdf/2016-Food-Metrics-Report.pdf |

Rationale/evidence

The overarching purpose of this area of work is to improve and optimise the functioning and infrastructure of food markets in the city. This indicator relates to the provision of supportive policy and programmes that enable public food markets to successfully operate. The final calculated indicator figure also needs additional contextual information to be meaningful.

Retail & local government: In most cities, food retail is organised and owned by private companies that provide food to residents through a range of different types of retail outlets. In relation to these outlets, the role of local government may be largely restricted to granting planning permission for use or change of premises, enforcing food safety regulations and dealing with business rates and rents.

Fresh food markets & local government: The area where the local government has more scope to influence food supply is with fresh food markets where market traders sell the products: covered or uncovered, traditional city centre or neighbourhood food retail markets, farmers markets, fresh produce markets, specialist product markets, street food markets etc. In this case the local government may grant trader licences, provide planning permissions for markets to take place, manage temporary street closures and provide practical market organising logistics including signage, provision of water and power and cleaning and waste disposal services. Each country will have their own particular arrangements that in turn determine the role of the municipality.

Policy example: The UK All Party Parliamentary Markets Group (APPMG) set out, in their 2007 Markets Policy Framework document, why "successful markets matter in all their forms." For the APPMG, "they contribute to the social, environmental and economic well-being of the nation" by:

- Providing a sense of place
- Being part of the nation's cultural tradition.
- Remaining an important element of the economy, particularly in relation to independent

- retailing, local employment and business start-up opportunities.
- Offering local access to fresh produce and other commodities.
- Reducing environmental impacts e.g. by eliminating excessive packaging/waste.¹

(See references section for more on the benefits of these markets and why local governments should support them.)

Glossary/concepts/definitions used

‘Supported by the municipality’: As outlined above, most municipalities will have some kind of statutory regulatory and financial relationship with retail and market outlets, but this may not be regarded as ‘support’. Support could be understood as a particular intervention to enable, maintain, or increase accessibility and availability of fresh fruit and vegetables in the city. For retail outlets this could be support for community-run shops where premises may be offered at low or no rent; permission to run ‘pop-up’ shops in temporarily empty premises; exemptions or low rates for fruit and vegetable businesses based in low income areas or neighbourhoods classed as ‘food deserts’. In general supermarkets are owned by large companies and don’t need the support of the municipality, but sometimes residents may request supermarkets in areas where the food retail offer is poor. In which case the municipality might do more than usual to enable formal planning permissions or leases, etc. For markets the support provided by the municipality may be more obvious. Some examples can be found above (see Rationale/Evidence). A municipality might change local laws to allow markets to take place, or provide training for all market traders in food safety etc. Criteria for what ‘supported by the municipality’ means will need to be agreed by each city as appropriate.

Retail outlets by type: Each city will have its own particular food retail typology (see also guidance notes for indicator 21 *Number of jobs related to the food sector*). An adapted and locally relevant food retail typology needs to be developed and used to guide data collection and analysis. For example, within food retail a range of types can be distinguished: supermarkets, smaller grocery stores, specialist food retailers (e.g. bakers, butchers, and fish sellers), kiosks, market vendors, etc. The retail outlets that sell fresh fruit and vegetables then need to be identified ideally also by location. It will also be important to note scale of the retail outlet as part of the context, even though the indicator calculation cannot show this.

Community-led retail: In addition to other examples already given, there may also be municipal support in the form of start-up grants for particular types of food retail enterprise like farmers markets or community supported agriculture or urban market gardens or food cooperatives or community shops. These types of retail outlets should be included.

Market outlets by type: As with retail outlets, each city will have its own particular market typology. This needs to be identified and used to guide data collection and analysis. There are some examples of different types of markets above (see Rationale/Evidence). The market outlets that sell fresh fruit and vegetables then need to be identified, ideally also by location and scale.

Preparations

The team responsible for monitoring this indicator should agree on:

1. Criteria for what ‘supported by the municipality’ means (e.g. include supermarkets or not – according to criteria). This may need to be done in consultation with relevant officers in the municipality, or by speaking to retail and market managers.

¹ House of Commons paper: Can the traditional market survive? Communities and Local Government Committee, UK Parliament
<https://publications.parliament.uk/pa/cm200809/cmselect/cmcomloc/308/30806.htm>

2. Which outlets to include (identify which outlets sell fresh fruit and vegetables)
3. Type of data disaggregation and categories that will be used (see further below)
4. How to address the location and scale issues, in relation to calculating a final figure (see further below)
5. How to relate numbers of outlets to 1000 inhabitants – use overall totals for the city or provide more detailed analysis by neighbourhood
6. Data collection method (analysis of records and/or stakeholder interviews)
7. Key stakeholders to interview if there are gaps in the data
8. If interviews are to be used, questions have to be designed. Training of interviewers may be needed.

Sampling

N/A. The purpose of interviews would be to identify data on outlets and to gain more understanding of the nature of municipal support.

Data collection and data disaggregation

Sources of data: See above table for possible sources of data. Most municipalities will have records of food outlets. If none exist or if there are clear gaps in the data, then the best way to do this audit is to begin with the most known and well used types of fruit and vegetable outlets or to focus on one neighbourhood at a time. A simple random street survey/rapid appraisal could be done to find out where people buy their fruit and vegetables in each neighbourhood. While the resulting figures on numbers of outlets may not be accurate, they would provide some indication of provision. A follow up discussion with the municipality would clarify to some extent the nature and levels of its support for those outlets.

Selection of outlets to include in the final calculation

- Identify which types of retail and market outlets sell fresh fruit & vegetables
- Identify which of retail and market outlets to count (this could be all, and then separate out those 'supported by the municipality'; the whole picture will also be very useful information for other indicators).

Categorise by type (and subtype if necessary)

- Supermarkets
- Shops – type of shop (e.g. specialist shops; fruits and vegetable shops, mixed grocery)
- Fresh food markets – type of market (e.g. specialist shops; fruits and vegetable shops, mixed grocery)
- Note specific support provided by municipality

Categorise by scale: Agree criteria for shops (classification may already exist). For markets, one option may be to record the number of fruit & veg traders at each market. This is important contextual information especially if figures are calculated for each neighbourhood. For a final calculation it would be simplest to use total numbers of outlets in relation to the total number of inhabitants. However this figure will not be very useful on its own, as it will not show geographical disparities and the scale of fruit and vegetable provision will not be considered. For example there would be no distinction between a small shop and a large specialist fruit and vegetable market, but they will serve very different numbers of people.

Number of outlets per 1000 inhabitants: If this is done on a neighbourhood basis, the figures will be much more meaningful. This could focus initially on the most vulnerable neighbourhoods and be build up in relation to available resources and policy priorities.

Data analysis/calculation of the indicator

The indicator is computed by calculating the total number of fresh fruit and vegetable outlets that are supported by the municipality, per 1000 inhabitants. However, as noted this number on its own is not very useful. An audit of provision that sets out localised information on a neighbourhood basis would be much more useful.

There are a number of additional contextual figures that could be gathered while doing this work. For example:

- Numbers of specialist i) fresh fruit and vegetable shops; ii) markets per neighbourhood
- Number of fruit and vegetable sellers in each market; & % of traders selling fruit & vegetables in each market
- Type of municipal support already provided or needed in the future
- Neighbourhoods with the highest/lowest per capita provision of fresh fruit and vegetables

Data could be visually presented on maps or tables that distinguish neighbourhood data sets.

Note: Another measure could be to specifically calculate the total retail area of floor space or shelves dedicated to total volumes of fresh fruit and vegetables in each neighbourhood/per capita. The way this is normally calculated takes into account rotation of product. In many Municipal outlets the rotation may be 10-15 Tons per sq. metre, however, in more informal markets it may go up to 60 Tons/sq. metre. Based on a comment by Jorge Fonseca. Please add FAO references/reports.

References and links to reports/tools

The case for supporting markets in urban areas

House of Commons paper: Can the traditional market survive?

Communities and Local Government Committee, UK Parliament

<https://publications.parliament.uk/pa/cm200809/cmselect/cmcomloc/308/30806.htm>

This paper sets out a wide range of benefits that traditional retail markets and farmers markets can bring to local towns and communities and whether they are sufficiently important to warrant greater attention [and therefore support] from local authorities and central government.

Communities and Local Government Committee Select Committee Inquiry into Traditional Retail Markets; National Farmers' Retail and Markets Association (FARMA), UK

<https://publications.parliament.uk/pa/cm200809/cmselect/cmcomloc/memo/tradrema/ucm2702.pdf>

New York City data collection on grocery store space per person

The City of New York measures amount of grocery store space per person - specifically calculated as the square footage of supermarket floor space per capita by community district (p20).

<http://www1.nyc.gov/assets/foodpolicy/downloads/pdf/2016-Food-Metrics-Report.pdf>

Market promotion and international campaign

At an international level, the 'Love Your Local Market' campaign, which began in the UK in 2012 with 400 markets, has developed into an international movement spanning 17 countries, with over 3000 markets participating across the globe in 2017. The global 'Love Your Local Market' (LYLM) campaign is an annual event celebrating wholesale & retail (street or covered) markets. It is held in the month of May, now known as the Month of Markets! LYLM Global is supported & coordinated by the World Union of Wholesale Markets (WUWM) since 2014.

World union of wholesale markets: promoting wholesale and retail markets worldwide
<http://www.wuwm.org/7mr/home/lylm.html>

Food retail assessment and mapping

Who Feeds Bristol: towards a resilient food plan, Carey, 2011 (Section 5, Retail, pp24-26). Data for the mapping in this report was collected by the researcher using databases held by the Environmental Health/Food Safety Inspection team, and turned into maps using GIS technology by the Public Health Department. <http://bristolfoodpolicycouncil.org/who-feeds-bristol/>



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Milan Urban Food Policy Pact Monitoring Framework

March 2021 version

Indicator 37: Annual municipal investment in food markets or retail outlets providing fresh food to city residents, as a proportion of total (investment) budget

MUFPP framework of actions' category: Food supply and distribution

This indicator measures annual municipal investment in food markets or retail outlets providing fresh food to city residents, as a proportion of total investment budget (or whatever budget is most appropriate for the city).

Overview table

| MUFPP Work stream | Food supply and distribution |
|--|--|
| MUFPP action | <p>- Provide policy and programme support for municipal public food markets including farmers markets, informal markets, retail and wholesale markets, restaurants, and other food distributors, recognizing different approaches by cities working with private and public components of market systems</p> <p>- Improve and expand support for infrastructure related to market systems that link urban buyers to urban, peri-urban and rural sellers while also building social cohesion and trust, supporting cultural exchange and ensuring sustainable livelihood, especially for women and young entrepreneurs.</p> |
| What the indicator measures | Annual municipal investment in food markets or retail outlets providing fresh food to city residents, as a proportion of total investment budget (or whatever budget is most appropriate for the city) |
| Which variables need to be measured / what data are needed | Total investment budget (or whatever is most appropriate); total annual investment in food markets or retail outlets that provide fresh food to city residents – by type of market and location; and by type of investment. Total population figures by neighbourhood. |
| Unit of measurement (i.e. Percentages, averages, number, etc.) | Percentage |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Money (financial investment/proportion of total investment budget) |
| Possible sources of information of such data | Municipal budgeting and finance or account department; retail and wholesale market managers/coordinators; city regeneration agencies or departments; neighbourhood investment or regeneration partnerships. |

| | |
|---|---|
| Possible methods/tools for data-collection | Municipal budget reports; interviews with key stakeholders |
| Expertise required | Research, financial understanding, interview skills |
| Resources required/ estimated costs | |
| Specific observations | This indicator should ideally be calculated together with indicator 36 ' <i>Number of fresh fruit and vegetable outlets per 1000 inhabitants</i> - markets and shops - supported by the municipality'. Each city should decide on which comparative budget to use for this indicator and should make it clear in the final figures. It might be helpful, depending on the situation, to consider specific investment in total area of floor space or shelves dedicated for fresh fruit and vegetables. Context information is important, if possible that helps relate proportions of investment to proportions of beneficiaries. |
| Examples of application | |

Rationale/evidence

The overarching purpose of this area of work is to improve and optimise the functioning and infrastructure of food markets in the city. This indicator relates to municipal investment in improvements and expansion of infrastructure related to food market systems, and in particular to investment in food markets or retail outlets providing fresh food to city residents. While a single investment figure is on its own, not very informative, it does at least give a relative idea of the level of investment taking place compared with other areas of investment, or against total local municipal budget spend.

Regular investment: Investment in food supply-related infrastructure is crucial, whether for new developments or maintenance of existing infrastructure. This may be left entirely to the private sector, but the municipality may also invest as partners or may fund other kinds of support. (See notes on examples of municipal support: indicator 36 '*Number of fresh fruit and vegetable outlets per 1000 inhabitants* - markets and shops - supported by the municipality'.) In some cities, investment in the food system may be significant, e.g. for new transportation routes or warehousing or processing units or wholesale/retail markets.

Example of food retail investment from the city of Vaslui, Romania: A new retail market was built from scratch on a former derelict market site, with local budget funds (approx. 3.5 million Euros) in the centre of the city as an energy efficient building. Work started in 2012, finished in September 2014, and the local authority administers the market. It is endowed with high European technical means needed to facilitate the direct sales of local products coming from the small-sized land holdings of Vaslui. The market is divided into 5 well-designed areas: quality control laboratories for food safety and security (which plays an important role in increasing consumer trust), fruits and vegetables, fish products, meat, and dairy products. The market's main target is local produce. Special designated areas and rent conditions are provided in order to encourage local producers to offer best quality products, shorten the food chain, and reduce CO2 emissions.¹

Glossary/concepts/definitions used

Fresh food: In this context, fresh food should be taken to mean any meal ingredients that are not highly processed and from which a household meal can be prepared. It excludes food from take-aways and eating out places. There will be grey areas (e.g. pre-prepared ready meals - so each city will need to

¹ Central market investment, Vaslui, Romania (p 63) http://www.strategicdesignscenarios.net/wp-content/uploads/2013/11/URBACT_Creating-Space-for-Sustainable-Food-Systems-in-Urban-Communities.pdf

decide on appropriate criteria to define fresh food. In its simplest form it could be taken to mean: flours and grains, bread, oils and fats, fruit and vegetables, meat, dairy products, pulses, seeds and nuts, etc.

Community-led retail: In addition to other examples already given, there may also be municipal support in the form of start-up grants for particular types of food retail enterprise like farmers markets or community supported agriculture or urban market gardens or food cooperatives or community shops. These types of retail outlets should be included.

Types of municipal investment

It will be important to understand how the municipality approaches investment in food infrastructure compared to other infrastructure, e.g. housing or roads or leisure facilities.

Often in the development of markets (notably wholesale), the municipality may provide the land or the investment in administration costs (e.g. waste management), the rest coming from national governments.

There may be value in creating categories for different types of food retail investment. E.g. differentiating mainstream wholesale market capital investment from grants for community-led retail.

Preparations

The team responsible for monitoring this indicator should agree on:

1. How this work connects efficiently with work on indicator 36 '*Number of fresh fruit and vegetable outlets per 1000 inhabitants - markets and shops - supported by the municipality*'
2. What overall total investment figure should be used for the final calculation
3. Type of municipal investment in food retail that should be included (it may be important to discuss 2 & 3 at the outset with officers in the municipality)
4. Type of data disaggregation and categories that will be used (see further below)
5. Data collection method

Context: If possible, it will be helpful to have an understanding of how well the city is provided for in terms of food market infrastructure. This could be the number of city residents served by the selected type of key food market infrastructure. For example, only one fruit and vegetable wholesale market that therefore supplies 100% of citizens; or there might be a number of fresh fruit and vegetable retail markets spread evenly around the city, so it would be possible to estimate 10,000's of people served by x area of retail markets etc. The team will need to make a judgement on what is most useful and relevant, how to connect investment to neighbourhood population figures if useful, and how data for this indicator connects with indicator 36.

Sampling

N/A

Data collection and data disaggregation

Data disaggregation can be done i) by type and location of fresh food market or retail outlet; ii) by total annual investment in each outlet and/or by type of outlet, iii) by type of investment. How this is finally presented will have to be agreed, as appropriate for each city.

For example

- \$X in wholesale food markets – capital costs to improved buildings and access routes in city areas x,y,z.
- \$X in 5 out of 10 retail food markets there is investment in improved services – e.g. water provision and waste disposal in city areas x,y,z.
- \$X in 20 new food shops – reduced rates for fruit and vegetable provision in food desert areas x, y, z.

- \$X total in grant funding to 10 community food retail initiatives in city areas x,y,z.
- etc

Data can be collected from existing records and registers (economic or market department, food business registers, agricultural programmes). It may be necessary to interview key stakeholders to cross-check for accuracy and context, and to fill any data gaps.

Data analysis/calculation of the indicator

The indicator is computed by calculating the total amount of annual food outlet investment as a percentage of either i) total annual municipal budget and/or ii) total annual municipal investment budget. Each city will need to decide which comparison is more meaningful and useful. It is quite likely that the final figure will be very small if calculated as a proportion of total annual budget so it may be more useful to present it in relation to a more comparable sub-budget category.

References and links to reports/tools

An EU URBACT programme report on city centre retail investment

Rethinking the city space to better host the new retail proposition

RetailLink programme; URBACT

http://urbact.eu/sites/default/files/media/3_5_rethinking_the_city_space_to_host_new_retail.pdf

EU URBACT programme handbook for cities

Creating space for sustainable food systems in urban communities: practical approaches and examples for cities; URBACT II Thematic Network, Sustainable Food in Urban Communities (2012-2015) http://www.strategicdesignscenarios.net/wp-content/uploads/2013/11/URBACT_Creating-Space-for-Sustainable-Food-Systems-in-Urban-Communities.pdf

Market forces: Creating jobs through public investment in local and regional food systems, Jeffrey K O'Hara, 2011, Union of Concerned Scientists

(Chapter 5 investing in local and regional food systems and creating jobs)

https://www.ucsusa.org/sites/default/files/legacy/assets/documents/food_and_agriculture/market-forces-report.pdf

EU URBACT programme local action plan to develop the Dublin City Retail Food Market

This Local Action Plan identifies the Dublin Wholesale Fruit and Vegetable Market building as an appropriate location for a new City Retail Food Market. It includes research on the need, and proposals for a City Retail Food Market, co-located with the existing Wholesale Fruit and Vegetable Market. The plan further details the operational charter for such a market, and using international and national best practice outlines the mix of providers and other elements needed to deliver a vibrant city asset for use by those who live, work or visit the city.

http://urbact.eu/sites/default/files/dublin_lap_eng_24215.pdf

The role of the private sector in city region food systems, RUAF Foundation, 2017.

<http://www.ruaf.org/publications/role-private-sector-city-region-food-systems-2017>

Case study 16 - Government support for family-owned food processing and marketing enterprises in Brasilia, Brazil <https://cgspace.cgiar.org/rest/bitstreams/89163/retrieve>

Overview of food markets developments around Europe

This publication provides ideas and inspiration for market managers and stakeholders responsible for

city markets on how city markets can become economically successful and drive sustainable urban development.

http://urbact.eu/sites/default/files/urbact_markets_handbook_250315.pdf

Project for Public Spaces (PPS)

PPS is a nonprofit organization dedicated to helping people create and sustain public spaces that build strong communities.

<https://www.pps.org/category/public-markets>



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Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 38: Proportion of food procurement expenditure by public institutions on food from sustainable, ethical sources and shorter (local/regional) supply chains

MUFPP framework of actions' category: Food supply and distribution

The indicator measures the proportion of food procurement expenditure by public institutions on food from sustainable, ethical sources and shorter (local/regional) supply chains [or presence of a set of criteria to drive an increase in the proportion of food procurement expenditure by public institutions on food from sustainable, ethical sources and shorter (local/regional) supply chains]

Overview table

| MUFPP Work stream | Food supply and distribution |
|--|--|
| MUFPP action | Review public procurement and trade policy aimed at facilitating food supply from short chains linking cities to secure a supply of healthy food, while also facilitating job access, fair production conditions and sustainable production for the most vulnerable producers and consumers, thereby using the potential of public procurement to help realize the right to food for all. |
| What the indicator measures | Proportion of food procurement expenditure by public institutions on food from sustainable, ethical sources and shorter (local/regional) supply chains [or presence of a set of criteria to drive an increase in the proportion of food procurement expenditure by public institutions on food from sustainable, ethical sources and shorter (local/regional) supply chains] |
| Which variables need to be measured / what data are needed | Analysis of as many public institution food procurement contracts as possible; analysis to look at contract specifications for 'sustainable', 'ethical', 'short supply chain', 'family farms', 'local', 'regional', 'small-scale', 'agroecological' (or equivalent) products; financial analysis |
| Unit of measurement (i.e. Percentages, averages, number, etc.) | Percentage |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Purchase value of specific categories of foods (as an expression of total contract purchase value) |

| | |
|---|--|
| Possible sources of information of such data | Procurement officers in local government and other public institutions (hospitals, schools, colleges, universities, municipal care homes, prisons) |
| Possible methods/tools for data-collection | Review of contract specifications, interviews with key stakeholders and contract managers or procurement officers |
| Expertise required | Data analysis, finance, research and interview skills |
| Resources required/estimated costs | |
| Specific observations | <p>A significant amount of research will be needed to carry out a comprehensive review of food procurement expenditure by public institutions. It may be pragmatic to begin with just one or two categories, e.g. schools or hospitals. There is no absolute definition of 'sustainable' or 'ethical' foods so each city will need to make use of any existing locally acceptable criteria as a starting point. Where school or hospital food is not provided, the focus should be on whichever public institution food procurement does exist, however large/small. Any overview information on numbers and types of contracts that exist will be very useful contextual information for the future.</p> <p>If this indicator is too ambitious, an alternative could be the presence of a set of criteria to drive an increase in the proportion of food procurement expenditure by public institutions on food from sustainable, ethical sources and shorter (local/regional) supply chains.</p> |
| Examples of application | |

Rationale/evidence

The overall purpose of work in this area is to shape public procurement and trade policies so as to facilitate an increase in local and sustainable food supply and distribution. Under some national or international procurement laws (e.g. in Europe) it is not permitted to specify 'local' in contracts and thus favour local supply over another non-local source purely based on location and distance.

The role of public sector procurement and 'power of purchase'

The total annual expenditure of public sector institutions on food can be very significant, collectively providing the second largest food market nationally (the first being household food purchasing). Academics estimated for example that in 2008 the annual UK public food procurement bill was £160 billion.¹

As procurers of food and managers of food supply contracts for various services, local government can play a critical role in influencing positive changes. If this expenditure can be directed at least in part towards purchase of more locally sourced or ethical or sustainable products, the impact on the local economy or on ethical business may be significant, with further positive knock on effects.

In more detail, a further example from Wales: Annual public sector expenditure on food is around £60 million in 2008. Of that £20 million is spent on fresh food. This food is used to cater for some of the most vulnerable people in the country (children, elderly, hospitalised). With positive policy towards buying from Welsh sources, Welsh origin products accounted for 47.4% of food purchase in 2009.²

Local economic impacts

¹ Planning, Regeneration and the Public Plate; Kevin Morgan, 2008, School of City and Regional Planning, Cardiff University <http://www.rtpi.org.uk/media/9505/Kevin-Morgan-RTPI-Food-Conference.pdf>

² Eco-innovation and the power of purchase; Kevin Morgan, DIME Conference, Cardiff University, 2011 <http://www.dime-eu.org/files/active/0/Kevin-Morgan.pdf>

There are numerous case studies that aim to illustrate the impacts of ‘positive public purchasing powers’. For example a recent study with North Bristol Health Trust UK, that prepares 3000 meals a day on site, found that 24% of NBT’s annual food spending accounts for suppliers who are based in the city region and also source the majority of their raw material from the city region (within 100km). The same study also investigated local sourcing by the contracted school meal provider and found that for fruit and vegetables, the amount of city region sourced produce is up to 40% of the range, up to 30% of the volume and 20% of the value, varying according to seasonality. The knock-on impact on some of the businesses was significant, with one business saying the contract had increased their credibility with other hospitals and with the increased market they had been able to expand operations and retain previously seasonal labour all year round.³

Impacts of sustainable or ethical procurement

As with local economic impacts, if a company selling sustainably produced or ethically sourced products has an opportunity to supply larger volumes to a public institution as part of a supplier contract, the impact on the business will be significant. (The danger comes if the contract is suddenly terminated leaving a business that has invested in expansion without a secure market.)

Glossary/concepts/definitions used

Use of the term ‘local’ : While buying ‘local’ does not necessarily mean buying sustainable, it can offer significant benefits to the local economy (as outlined above) and also save the buyer money, or cost the buyer no more than their original amounts.

Each city has to define what is local to them and there may be numerous interpretations. A certified UK farmers market may for example only allow producers from a 30-50km radius of the town or city. A city like London however will have a much larger local ‘foodshed’ area. Defining what ‘local’ means is contentious and for some nations ‘local’ may as well be the same as ‘national’. The term ‘local’ may be used when in fact the underlying interest is in food ‘with clear provenance’ or ‘fully traceable’. With regard to this indicator, it may be more useful to cite specific distances or define a foodshed area like ‘city region’ or focus instead on ‘fully traceable food with clear provenance’.

Use of the term ‘ethical’: In general, ‘ethical’ means equitable, fair and just, and implies that the workers benefit from fair and just working conditions and wages. For example, The UK-based Fairtrade Foundation makes buying ethical products easier for consumers by providing a system of certification and product labelling. Fairtrade sets social, economic and environmental standards for both companies and the farmers and workers who grow the food. For farmers and workers the standards include protection of workers’ rights and the environment, for companies they include the payment of the Fairtrade Minimum Price and an additional Fairtrade premium amount that is invested in business or community projects of the community’s choice.⁴

Use of the term ‘sustainable’: The terms ethical and sustainable are sometimes used interchangeably. However ‘sustainable’ tends to be used with reference to environmental aspects. Many cities around the world may want to place in a more prominent way their effort to favour small holders/family farming as in the example of Brazil mentioned below, combining health, social, economic, and environmental interests.

³ The role of private sector in the Bristol (UK) city region food system: Bristol’s public procurement sector and city region food supply (Section 4, p26); Carey and Hochberg, 2016, RUAF Foundation http://www.ruaf.org/sites/default/files/The_role_of_private_sector_in_the_Bristol_city_region_food_system-final_1.pdf

⁴ Fairtrade Foundation <https://www.fairtrade.org.uk/What-is-Fairtrade/What-Fairtrade-does>

There is no legal definition, though for certain aspects of sustainable food production, terms like organic or fair-trade are clearly defined. Many organisations use the term and have varying definitions that more or less amount to the same underlying principles. Sustain, a national UK food and farming NGO notes that new evidence is emerging all the time on how best to improve the sustainability of the complex food and farming system, so offers principles that are a work in progress:

Sustainable food is food which is produced, processed, distributed and disposed of in ways that:

- Contribute to thriving local economies and sustainable livelihoods - both in the UK and, in the case of imported products, in producer countries;
- Protect the diversity of both plants and animals and the welfare of farmed and wild species,
- Avoid damaging or wasting natural resources or contributing to climate change;
- Provide social benefits, such as good quality food, safe and healthy products, and educational opportunities.⁵

Other 'sustainable' food labels or certification schemes: Products such as certified organic foods or sustainable caught fish may have their own standards. For example the Marine Stewardship Council (MSC), an international non-profit organization, provides standards and certification indicated by a logo on products to show it is certified to come from well-managed fisheries and not from endangered stocks. MSC provides a 'good fish guide' and also information on which fish and seafood should be avoided.⁶

Short food supply chains (local/regional) or family farms: 'Short' refers to both physical and social distance. There are very few or no intermediaries, allowing for more interaction between producer and final customer. Many such supply chains focus on retail sales e.g. farmers markets, community supported agriculture and do not have the economies of scale to engage with procurement contracts, unless there is clear policy to support it.

In Brazil, the National School Feeding Program requires that at least 30% of fruits and vegetables come from family farming (regional production - short chain) as a way of stimulating and providing social and economic sustainability for family farming initiatives.⁷

There are some businesses like Fresh Range in the UK that have successfully won a school meals supply contract with Bath & North East Somerset Council.⁸ (See reference section for further information.)

Preparations

The team responsible for monitoring this indicator should agree on:

1. Scope and parameters for work on this indicator including where to begin and how much detail to gather – to be discussed with the municipality (see research questions below)
2. Any specific focus, either in line with policy priorities, or for pragmatic reasons (e.g. only focus on school meals, or only focus on elderly care homes) – as above, discuss with the municipality
3. Type of data disaggregation and categories that will be used (see further below)

⁵ Sustain: the alliance for better food and farming, UK

https://www.sustainweb.org/sustainablefood/what_is_sustainable_food/

⁶ Marine Stewardship Council <https://www.msc.org/>

⁷ The Brazilian school feeding programme: an example of an integrated programme in support of food and nutrition security, 2012; Sidaner, Balaban and Burlandy; NS Public Health Nutrition Journal; http://hgsf-global.org/en/bank/downloads/doc_details/294-the-brazilian-school-feeding-programme-an-example-of-an-integrated-programme-in-support-of-food-and

⁸ Bath & North East Somerset Council - School Food Contract Opportunity

<http://www.bathnes.gov.uk/services/schools-colleges-and-learning/school-meals-and-catering/bath-north-east-somerset-council>

4. Data collection method (analysis of records, interviews or procurement survey)
5. If surveys are to be used, survey questions and instrument have to be designed. Training of survey enumerators may be needed.

Sampling

In case data are collected by means of a food procurement survey, the ideal would be to have a 10% sample from each type of public institution food procurer is minimally needed: e.g. 10% hospitals, 10% schools, 10% care homes etc. This will provide an overview from which approximate totals may be calculated.

These should be done as structured interviews in order to ensure respondents are clear about the information requested. Written surveys are less accurate.

Data collection and data disaggregation

Researchers should aim to produce an audit report that collects together as much of the following data as possible so as to provide an overview of what is currently happening. In most cases this information will not exist so this exercise will provide a baseline for future monitoring. The procurement contract specifications are the key documents, but they will very likely need explanations from the contract managers through research interviews.

Identify relevant institutions:

- Number and type of public institutions that procure food (e.g. schools, colleges, hospitals, social services and care homes, prisons, municipal-owned canteens, etc.)

Understand and identify relevant procurement contracts

- Number and type of shared procurement contracts (e.g. one catering company may supply several schools; or one supply contract may provide food for several care home kitchens in different locations)
- Number, type and value of food procurement contracts for each/some of the above (see notes on sampling)

Identify relevant contract specifications

- Number of procurement contracts that include specifications for local or equivalent (or fresh, daily deliveries, seasonal, particular local varieties/breeds – other qualities that would still support local)
- Number of procurement contracts that include specifications for 'sustainably produced or caught'
- Number of procurement contracts that include specifications for 'ethical' or fairly or justly traded (or equivalent)

Identify proportion of total value of each/sampled food contract spent on:

- Local/shorter supply chains or equivalent
- Sustainably produced/caught or equivalent
- Ethically traded or equivalent

Data analysis/calculation of the indicator

If all the background information is available, the indicator is computed by i) calculating the total annual value of all public institution food procurement contracts; ii) calculating the total annual value of purchases of local, ethical and sustainable products; iii) calculating one as a proportion of the other.

Very likely this indicator will not be available in the short-term. In that case, an overall assessment of the extent to which procurement expenditure goes on food from sustainable, ethical sources and shorter (local/regional) supply chains will be good progress. Any overview figures that provide context will be useful in the longer-term. If a complete overview is not possible, then the focus could be on one type of public institution food procurement, or even just on one single institution.

References and links to reports/tools

Short Food Supply Chains as drivers of sustainable development: evidence document; Foodlinks Collaborative EU project, 2013 (www.foodlinkscommunity.net)
<http://orgprints.org/28858/1/evidence-document-sfsc-cop.pdf>

Local Food Plus, Toronto

An award-winning charitable organization that nurtures regional food economies by certifying farmers and processors for local sustainable food production and helping them to connect with buyers of all types and sizes

<http://ckc.torontofoundation.ca/org/local-food-plusland-food-people-foundation>

An example of a set of criteria around which sustainable food procurement policy and practice could be developed

The Yale Sustainable Food Project has created a guide to help provide a framework around which institutions can develop new purchasing practices. The authors ask what makes food “sustainable”. Their answer is that sustainable food is:

- Produced by farmers and ranchers who care for the health of their animals and the land
- Sourced locally and seasonally directly from family farms or farm cooperatives
- Cooked from scratch to minimize processed ingredients
- Good for the environment, the people who grow it, and the people who eat it

Published by the Yale Sustainable Food Project and available on request from

food.purchasing@yale.edu



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Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 39: Presence of food safety legislation and implementation and enforcement procedures

MUFPP framework of actions' category: Food supply and distribution

The indicator allows for (self) assessment of the presence, implementation and enforcement procedures for food safety legislation

Overview table

| MUFPP Work stream | Food supply and distribution |
|--|---|
| MUFPP action | Assess, review and/or strengthen food control systems by implementing local food safety legislation and regulations that (1) ensure that food producers and suppliers throughout the food chain operate responsibly; (2) eliminate barriers to market access for family farmers and smallholder producers; and (3) integrate food safety, health and environmental dimensions. |
| What the indicator measures | The indicator allows for (self) assessment of the presence, implementation and enforcement procedures for food safety legislation |
| Unit of measurement (i.e. Percentages, averages, number, etc.) | This will be a qualitative assessment. There may be some metrics that could be used to give an indication of how food safety is improving (or not). These could include: frequency within which the business comes up for inspection; reduction/increase in number of non-compliance reports; reduction/increase in reported food poisoning incidents; level of public confidence in food safety measures |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | N/A |
| Which variables need to be measured / what data are needed | Information is collected on type of legislation; nature of implementation; consequences of non-compliance |
| Possible sources of information of such data | -Environmental Health Department; -Food Safety inspection team or agency; -Ministry or Department of Agriculture; -National Control Authority; Ministry or Department for Public Health; |

| | |
|---|--|
| | -Audit reports on local government food safety procedures |
| Possible methods/tools for data-collection | Existing documents, audit reports, food safety team records and annual reports, interviews with key experts, Public opinion survey |
| Expertise required | Research, data analysis, interviewing, survey design and analysis |
| Resources required/estimated costs | |
| Specific observations | In some countries this area of work is well developed and in others it is not. If there is very little information available then a proxy indicator could be to test public confidence in food safety using a public survey. This would at least give an indication of perception and confidence. It is an important area for cities to address with national support, so some examples of well-developed systems have been included in these guidelines. Each city will need to decide if there are other possible metrics that could be used in this assessment. |
| Examples of application | The city and county of Swansea, Wales: Audit Report 2014 https://www.food.gov.uk/enforcement/auditandmonitoring/2014/auditreports/swansea/city-and-county-of-swansea |

Rationale/evidence

The overarching purpose of this area of work is to ensure that the food processing, retail and catering sectors comply with sanitation and food safety regulations. This is an area of both national and local government/municipal responsibility in many countries and the area of action is to assess, review and/or strengthen food control systems.

National agencies: The regulations and enforcement procedures with vary from country to country. In the US, Government agencies are responsible for setting food safety standards, conducting inspections, ensuring that standards are met, and maintaining a strong enforcement program to deal with those who do not comply with standards. In the US there are three different Federal Agencies, each with a different role in food safety. In summary, one deals with ensuring the nation's commercial supply of meat, poultry and egg products are safe, and correctly packaged. Another regulates other foods with a focus on protecting consumers against impure unsafe and fraudulently labelled products. A third focuses on foodborne illnesses, outbreaks, prevention and control.¹

European Union: EU Rules regarding Food Hygiene cover all stages of the production, processing, distribution and placing on the market of food intended for human consumption. The European Commission, the European Parliament, the Council of the European Union and the national authorities in each Member State are responsible for decisions on EU food safety legislation. The European Food Safety Authority's role is as risk assessor is to provide independent scientific advice on risks linked to food and feed safety to help EU risk managers make their final decisions. The Directorate-General Sante is the EU Commission department responsible for EU policy of food safety and health, and for monitoring the implementation of related laws.²

Glossary/concepts/definitions used

Food safety legislation: This is most likely established by the national government and overseen by a national agency. In the UK, the national Food Standards Agency (FSA) is directly responsible for The Food Standards Agency is responsible for meat inspection duties in approved meat establishments in England, Scotland and Wales. It is the role of the Agency to help ensure that the meat industry safeguards the health of the public, and the health and welfare of animals at slaughter. Local government audits the local authorities' enforcement services and provides a report that outlines

¹ Selected Federal Agencies with a role in food safety, US

<https://www.foodsafety.gov/about/federal/index.html>

² European Food Safety Authority (EFSA) <https://www.efsa.europa.eu/en/askefsa/EU-food-legislation>

areas where the authority can focus its efforts on improvements (focussing on service organisation, management and internal monitoring arrangements), while also celebrating good practice. These audit reports are publically available on their website.³

Food safety implementation and enforcement procedures – municipal role: In the UK the local authorities (municipalities) have a statutory duty to enforce relevant food law. The Food Law Code of Practice gives statutory guidance to which local authorities must have regard when engaged in the enforcement of food law. The role of the local government (municipality) is to provide local enforcement officers who have wide powers to inspect any stage of the production, manufacturing, distribution and retail chain. Food premises are inspected at a frequency dependent upon risk. Frequency of physical inspections can vary from once every six months to once every two years. Enforcement officers also have the power to take samples of food for testing to ensure compliance with food legislation. Local authorities have a responsibility to investigate any food complaints passed on to them by consumers. Enforcement officers have powers to take action against a food premises which does not comply with food law. This enforcement action can range from issuing warnings and improvement or prohibition notices, to instigating prosecutions. The courts can inflict heavy penalties for non-compliance, including the closure of a business where conditions are particularly bad.

Presence, implementation and enforcement procedures for food safety legislation

- Presence of food safety legislation – most likely set at a national level
- Implementation – most likely implemented at the local government level by specialist food safety or public health inspection teams; may be subject to regular national government agency checks/audits
- Enforcement – ways in which the food safety law enforced.

Preparations

The team responsible for monitoring this indicator should agree on:

1. Clear research questions and type of data that will be used (see further below)
2. Data collection method (analysis of records, interviews, public opinion survey)
3. Key experts to interview to help understand data or fill in gaps, and with whom to discuss possible additional metrics relevant to the city
4. If a public opinion survey is to be used, survey questions and instrument have to be designed. Training of survey enumerators may be needed.

Sampling

The purpose of a public opinion survey would be to assess confidence in food safety measures. In case data are collected by means of a public opinion survey, a randomised sample is the simplest – e.g. a street survey. Depending on policy or monitoring priorities, a more in depth stratified random sample would give a clearer indication of perceptions from different sub populations. This could be done by communities of interest; e.g. in workplaces, in schools, in market places or shopping centres, women, or in specific areas of the city, etc.

Data collection and data disaggregation

Assessment research questions: presence, implementation and enforcement

- Presence – most likely set at a national level; what is the legislation?
- Implementation – most likely implemented at the local government level by specialist food safety or public health teams; who is responsible for doing what, when?

³ UK Food Standards Agency, national food safety standards enforcement and regulation
<https://www.food.gov.uk/enforcement>

- Enforcement – how is the food safety law enforced and what are the consequences for non-compliance?

Measuring effectiveness of food safety implementation and enforcement procedures

National audit: In some countries, there may be national audits carried out on all local authorities/municipalities which could provide a useful baseline or starting point.

Local data: The team responsible for food safety legislation enforcement will hold most of the data needed for this indicator. Interviews with these experts are likely to be needed.

Possible additional metrics: Procedures are not very visible, so there could be a number of additional metrics that help to assess the degree to which implementation and enforcement procedures are happening.

- Most countries will have a national (or at least a local) measure of standard for food safety in food businesses. A measure could be the number of food businesses or establishments achieving different levels of food hygiene rating. For example in the UK, for catering businesses, the Food Hygiene Rating Scheme (FHRS) at 4 or 5 star would be best. 3 star means the establishment has achieved general compliance but can still be below required standard in some elements
- Reduced number of reported food poisoning incidents would be some kind of measure of whether food safety standards are being applied, but is likely to be inaccurate because a lot of incidents don't get reported.
- Every country is different but it may be possible, if the jurisdiction operates a prioritisation system for the highest food safety risk, that frequency of the intervention could be a kind of indicator of compliance, even if there is no published scoring system.

For example, the system in the UK:

Municipal food safety inspectors rate the food premises against 8 criteria which are a mix of hazard and risk. The risk rating is increased as the compliance with the legal requirements falls. These are the three criteria which the business has under its direct control (and are the ones used to calculate the food hygiene rating). The higher the total overall score against the 8 criteria the more frequently the business comes up for inspection. So:

| | | |
|------------|---------|--------------------------------|
| Category A | >91 | inspection interval = 6 months |
| Category B | 72 – 91 | 12 months |
| Category C | 52 – 71 | 18 months |
| Category D | 31 -51 | 24 months |
| Category E | 0 -30 | 36 months |

Public opinion survey: This is another option, of particular value if none of the above information is available. The public could be asked about their confidence in food safety measures. The illustration below is from the UK. (Prepared by the Food Standards Agency for the Department of Food and Rural Affairs). ⁴ The same question, or similar could be asked in a street survey or more a more in-depth survey (see notes on sampling).

⁴ Indicators for a Sustainable Food System: Statistics (DEFRA, UK, 2009)

<http://webarchive.nationalarchives.gov.uk/20130124175737/http://www.defra.gov.uk/statistics/foodfarm/cross-cutting/foodsystemindicators/>

Example of a public survey approach (Food Standards Agency, UK)

Headline indicator

Enabling and encouraging people to eat a healthy, sustainable diet – Consumer confidence in food safety

Rationale:

Consumer confidence is dependent upon the availability of healthy and safe food. Public confidence in food safety can be affected by: animal health incidents; statistics on cases of food related illnesses; research linking types of foods with long term illnesses; perceived hygiene standards in food businesses; and perceived vigilance taken with imported foods. If consumer confidence in food safety and availability collapses, panic buying and other socially disruptive behaviour can occur. This could lead to localised shortages of food.

Desired outcomes:

- Consumers are confident in the safety of food

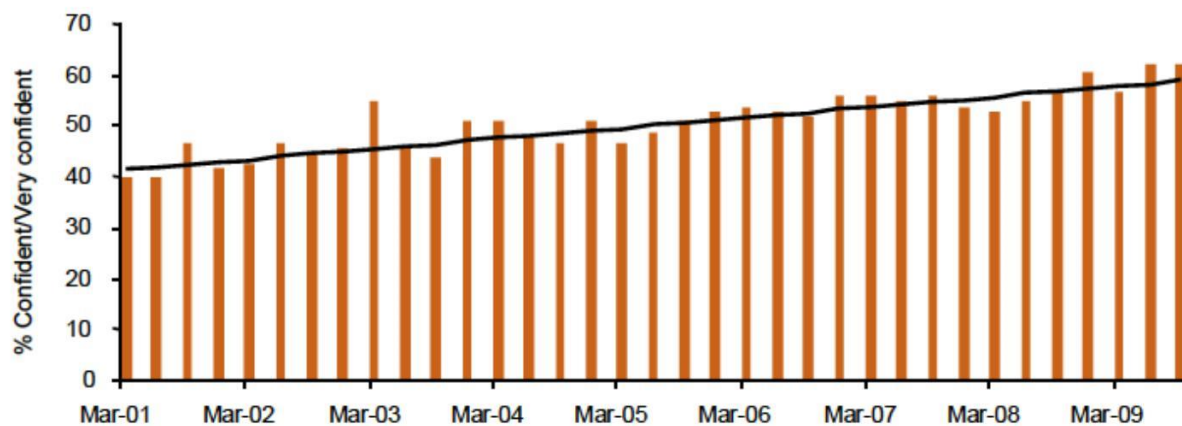
Indicator:

Public confidence in food safety measures

This indicator shows:

- Public confidence in food safety measures. The question asked was: How confident are you about the current measures taken by all organisations involved in protecting your health with regards to food safety? This graph shows those answering confident or very confident as a percentage of all answers.

Public confidence in current food safety measures



Source: FSA

Data analysis/calculation of the indicator

This will be in the form of an assessment report, ideally using national and local data. In some countries, there may be nationally coordinated annual or regular audits carried out on all local authorities/municipalities, which could provide useful baseline data and a starting point from which to draw comparisons and build up the assessment information.

If it has been possible to find relevant metrics (possibly ones used by the food safety inspection team) then they could be usefully included as part of the assessment.

References and links to reports/tools

For a useful source of food safety information, see resources on the UK's Food Standards Agency website <https://www.food.gov.uk/enforcement/approved-establishments-official-controls>

Also the work of the FSA in Europe <https://www.food.gov.uk/about-us/agencyandeurope>



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Milan Urban Food Policy Pact Monitoring Framework

March 2018 version

Indicator 40: Existence of support services for the informal food sector providing business planning, finance and development advice

MUFPP framework of actions' category: Food supply and distribution

This indicator assesses the existence of support services for the informal food sector providing business planning, finance and development advice. (The focus here is primarily in relation to sanitation and food safety regulations as a first priority, but it is important to look at wider support needs and provision – e.g. infrastructure, skills etc.)

Overview table

| MUFPP Work stream | Food supply and distribution |
|--|--|
| MUFPP action | Acknowledge the informal sector's contribution to urban food systems (in terms of food supply, job creation, promotion of local diets and environment management) and provide appropriate support and training in areas such as food safety, sustainable diets, waste prevention and management. |
| What the indicator measures | This indicator assesses the existence of support services for the informal food sector providing business planning, finance and development advice. (The focus here is primarily in relation to sanitation and food safety regulations as a first priority, but it is important to look at wider support needs and provision – e.g. infrastructure, skills, etc.) |
| Which variables need to be measured / what data are needed | Types and numbers of informal food businesses, by category Types and numbers of businesses most in need of support services Types and numbers of support services available to informal food businesses Types of support needs that should be addressed as a priority |
| Unit of measurement (i.e. Percentages, averages, number, etc.) | This is an assessment but there could be useful metrics: - Number and types of informal food sector businesses - Number and type of priority informal food sector support needs - Types of support available and number of organizations providing this support - Number of informal food sector businesses that benefit from support services - Number of informal food sector businesses obtaining certificates or similar (e.g. sanitation and food safety certificates) |

| | |
|---|--|
| | <ul style="list-style-type: none"> - Number of informal food sector businesses becoming registered as formal businesses - Number of informal workers in the food sector who have received support services on business planning, finance, development advice. |
| Unit(s) of Analysis <i>(i.e people under 5 years old, etc.)</i> | Informal food businesses (or business owners) |
| Possible sources of information of such data | <ul style="list-style-type: none"> -Existing reports; any registers of informal food businesses; -NGO's, agencies and municipal departments that work with food businesses; - Street trader organisations or unions; community organisations; police; food safety inspectors |
| Possible methods/tools for data-collection | Mainly interviews with relevant experts and stakeholders |
| Expertise required | Research, interviewing and analysis of data |
| Resources required/ estimated costs | |
| Specific observations | The informal food sector is by nature not easy to support. Many cities will not have any data and may not have any support systems in place. In this case there could still be a useful assessment done to identify to what extent an informal food sector exists, and to find out what kinds of support needs there are. The areas of food hygiene and sanitation are inevitably a priority, given the potential impact on public health. A crucial point to note is that where the informal food sector does exist, the lives of low income families depend on it for their survival so much care is required in provision of support, whatever the specific priorities. |
| Examples of application | |

Rationale/evidence

This indicator assesses the existence of support services for the informal food sector providing business planning, finance and development advice. The focus is primarily in relation to sanitation and food safety regulations as a first priority but it is important to look at wider support needs and provision, for example improved trading spaces or subsidised mobile trading carts or credit provision or business skills. In the first instance a greater understanding about the nature and scale of the informal food sector is needed.

Research into support needs

From 1999-2006 the Natural Resources Institute (NRI) worked with over 22 partners in African and South Asia on four separate street food and informally vended foods (funded by the UK Department for International Development, DFID). This work contributed to an increased understanding of how the informal sector is formed and the types of issues it faces. A feature of the urbanization process has been the development of informal food supply systems. Resource-poor groups have developed livelihood strategies with limited capital assets to meet opportunities in urban areas. This is typified by the increase in ready-to-eat food prepared and sold by street food vendors. However, while street food vending can be an effective way of providing low cost nutrition to urban populations, it can also pose risks to health, in particular for the young, the elderly and those with HIV/AIDS.

A mini-census and a survey of 334 street vendors in Accra, Ghana indicated that the street food sector employs over 60,000 people and has an estimated annual turnover of over US\$100 million with an annual profit of US\$24 million (equal to average daily profit of US\$1 per day). This was comparable to the findings from other studies in cities such as Calcutta; 130,000 street-vendors make an estimated annual profit of nearly US\$100 million. In Accra, most (94%) of the vendors were women, who had

minimal or no education, 75% did not pay taxes and most did not belong to vendors associations.

The research highlighted some key issues

- Street-vended and informally vended food can contribute significantly to the food security of those involved in its production, particularly suppliers of raw produce, food processors and vendors.
- Women are often owners or employees of street food businesses. In certain countries (Benin, Ghana, Lesotho, Togo and Democratic Republic of Congo), they represent 70 to 90% of vendors. In Ghana and most developing countries, most women sell food in the street primarily to improve the food security of their household and also to have some degree of financial independence.
- Despite its growing presence, it is a sector that has rarely been the focus of strategic research initiatives that determine the importance and potential hazards of street-vended food, and what contribution it makes to the livelihoods of the urban and peri-urban poor (both producers and consumers).
- The livelihoods of those in the informal street food sector and the health of consumers could be jeopardized if problems of food safety are not addressed. Loss in public confidence in street foods will not only jeopardize incomes of vendors but also of their employees, and of producers and traders of inputs.¹

Glossary/concepts/definitions used

The informal food sector

The informal sector plays an important role, which is often viewed as controversial. It provides jobs and reduces unemployment and underemployment, but in many cases the jobs are low-paid and the job security is poor. It is important to understand what comprises the informal food sector in terms of context. Unfortunately there is no absolute definition - the simplest is whether the business is registered to pay taxes or not. The informal sector tends to include small manufacturing enterprises and small traders and service providers, legal and illegal activities and a wide array of artisans. The most visible activities relating to the informal food sector are: i) food production (urban and peri-urban); ii) catering and transport; iii) the retail sale of fresh or prepared products (e.g. the stationary or itinerant sale of street food).²

Connections between the informal and formal sectors

It is important to remember however that one sector does not operate independently from others sectors. The food system is a collection of many systems, in which for example the informal and formal sectors are closely related, with mutual trade and exchanges occurring between them. For example, research in South Africa shows that informal traders source their products mainly from formal retailers. Moreover, many large firms engage the informal sector in formal business transactions where deliveries and collections are scheduled in accordance with pre-determined supply schedules. In many countries “farmer’s markets” sellers do not pay taxes, but do comply with certain hygienic measures, so whether or not they are included in the informal sector category is a grey area.

Examples of support services

The NRI research projects mentioned above specifically addressed improvement in food safety. Public

¹ Street foods and informally vended food in Africa, Natural Resources Institute, University of Greenwich <https://www.nri.org/project-websites/food-and-markets/street-foods-and-informally-vended-food-in-africa>

² The informal food sector: Municipal support policies for operators; ‘Food in Cities’ collection no. 4; FAO, 2003 <http://www.fao.org/3/a-y4312e.pdf>

billboards were used to promote food safety to consumers. Teaching aids were produced in partnership with street vendor organisations, for both the street vendors and for the food inspectors. An initial 300 vendors were trained in improved food safety, with an additional 3000 trained by street vendor organisations. Training in financial management was then added, as vendors need to know the cost in improved hygiene and impact on business. A survey of consumers who buy from vendors was carried out and it became clear that consumers were willing to pay more for more hygienic food.³

Preparations

The team responsible for monitoring this indicator should agree on:

1. Scope and parameters of the assessment
2. Main focus and research questions, in discussion with the municipality or relevant support organisations
3. Type of data disaggregation and categories that will be used (see further below)
4. Data collection method (analysis of records, interviews, surveys)
5. If surveys or interviews are to be used, questions and instrument have to be designed. Training of survey enumerators may be needed.

Sampling

In case data are collected by means of an informal food business survey, guidance will be needed from vendors to estimate the numbers. A pragmatic approach may be to survey as many vendors as possible in key locations. The purpose of such a survey would be to find out what support needs they have, what support they receive, (and ideally) under what circumstances new support could be successfully provided. Depending on policy or monitoring priorities, surveys could be implemented among specific groups of vendors (e.g. youth, women, vendors of un-prepared foods, or vendors in specific areas of the city).

Data collection and data disaggregation

The aim is to gather information that together provides an overview assessment. A number of research questions that focus around metrics could be useful.

Understanding the extent and nature of the informal food sector

- Number and types of informal food sector businesses (It will very likely include street food sellers, but there may be other categories – see examples in definition section above)
- Number and type of priority informal food sector support needs
- Number and type of other businesses that supply the informal sector (important to understand their role in relation to support needs of the informal sector)

Understanding the extent and nature of any existing support for the informal food sector

- Types of support available (this may vary considerably, for example from formal training in food hygiene to investment in mobile carts by the local government)
- Number of organisations providing this support

Understanding the take-up of support

- Number of informal food sector businesses that benefit from support services
- Number of informal food sector businesses obtaining certificates or similar (e.g. sanitation and food safety certificates)
- Number of informal food sector businesses becoming registered as formal businesses

³ Street food in Ghana, changing food safety practices, Natural Resources Institute, funded by DFID, 2004
<https://www.nri.org/images/images/project-pages/project2-moreinfo.pdf>

- Number of informal workers in the food sector who have received support services on business planning, finance or development advice.
- Number of formal businesses that are directly connected with the informal sector and need to be included in some way (recipients or providers of support).

Note. As the NRI reports show, it took several years to develop support work with the informal food sector. This exercise can at best provide an overview of the current situation but ideally should help to open up important issues that may not have been either acknowledged or addressed.

Data analysis/calculation of the indicator

The analysis should be presented as a short assessment report, ideally with recommendations for next steps. It could also be presented at a roundtable or workshop and used as an engagement mechanism for further discussion and action.

References and links to reports/tools

Extensive international research on the informal street food and vendors in Africa (Ghana, Zambia, Zimbabwe) and India

Street foods and informally vended food in Africa, Natural Resources Institute, University of Greenwich <https://www.nri.org/project-websites/food-and-markets/street-foods-and-informally-vended-food-in-africa>



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Milan Urban Food Policy Pact Monitoring Framework

March 2021 version

Indicator 41: Total annual volume of food losses & waste

MUFPP framework of actions' category: Food waste

The indicator measures (decrease in) total annual volume of food losses & waste.

Overview table

| MUFPP Work stream | Food waste |
|--|---|
| MUFPP action | <p>Convene food system actors to assess and monitor food loss and waste reduction at all stages of the city region food supply chain, (including production, processing, packaging, safe food preparation, presentation and handling, re-use and recycling) and ensure holistic planning and design, transparency, accountability and policy integration.</p> <p>Raise awareness of food loss and waste through targeted events and campaigns; identify focal points such as educational institutions, community markets, company shops and other solidarity or circular economy initiatives.</p> |
| What the indicator measures | Total annual volume of food losses & waste |
| Which variables need to be measured / what data are needed | <p>-Food waste generated at system stages:</p> <ul style="list-style-type: none"> • Production • Handling and storage • Handling and storage • Distribution and point of purchase • Household/ consumption <p>- Types of food wasted</p> <p>-Edible vs inedible food</p> <p>-Destinations of food waste (landfill, composting, redistribution, etc.)</p> |
| Unit of measurement (i.e. Percentages, averages, number, etc.) | Tonnes or Kilograms of food waste |
| Unit(s) of Analysis (i.e. people under 5 years old, etc.) | Weight of food entering municipal waste stream |
| Possible sources of information of such data | <p>- Municipal waste management department</p> <p>- Private haulage companies</p> |

| | |
|---|--|
| Possible methods/tools for data-collection | Sampling and weighing |
| Expertise required | No specific expertise is required to operate a weighing device and record the results. |
| Resources required/estimated costs | Weighing can be costly if an entity is weighing food loss and waste from more than one location. In addition to the initial purchase or rental of a weighing device, transport of the device and personnel can be cost-prohibitive, particularly in areas with poor vehicular access. The main constraints on weighing, however, are logistics and feasibility rather than cost ¹ . |
| Specific observations | |
| Examples of application | The Natural Resources Defense Council describes the results of a food waste baseline assessment study in three U.S. cities—Denver, Nashville, and New York City—for residential and non-residential sectors, including the industrial, commercial and institutional sectors. The intent of the study was to characterise the amount of food that is wasted in these cities, identify some of the reasons why the food is going to waste, and then use that data to help inform and inspire initiatives to prevent wasting food, to rescue surplus food to benefit people in need, and to recycle food scraps. Outputs from the study not only include the results of the research, but also templates and descriptions of the methodologies in hopes that this study will contribute to a working model for other cities to perform similar assessments ² . |

Rationale/evidence

A significant share of food grown for human consumption is never eaten. It is estimated that one third, by weight, of all food produced in the world was lost or wasted in 2009. This equates to US\$940 billion per year in economic losses and is linked to approximately one quarter of all water used by agriculture³. Food is lost or wasted throughout the supply chain, from production to household consumption. Food waste that rots in landfills emits harmful greenhouse gases. Target 12.3 of the United Nations Sustainable Development Goals calls for the halving of per capita global food waste by 2030.

Cities are key players because they are responsible for solid waste services and have economic, social and sustainability goals that food waste solutions can support. Many cities have analysed the types of materials that end up in the waste stream, few have done comprehensive food waste assessments, especially at the household level. Local governments need further data on the types of food that ends up in the waste stream, what proportion is edible versus inedible and why the food is wasted. This lack of information and the variations in methodologies are barriers to developing strategies to reduce food loss and waste. The World Resources Institute has developed a comprehensive “Food Loss and Waste Accounting and Reporting Standard” to facilitate the quantification of food loss and waste (FLW) and encourage consistency and transparency of the analyses⁴.

Glossary/concepts/definitions used

Food Loss and Waste: All edible and inedible parts that are discarded or wasted.

¹ World Resources Institute (2017). Guidance on FLW Quantification Methods: Supplement to the Food Loss and Waste (FLW) Accounting and Reporting Standard, Version 1.0. Available from http://flwprotocol.org/wp-content/uploads/2017/06/FLW-Protocol_Guidance-on-FLW-Quantification-Methods.pdf.

² Natural Resources Defense Council (2017). Estimating Quantities and Types of Food Waste at the City Level. Available from <https://www.nrdc.org/sites/default/files/food-waste-city-level-report.pdf>.

³ FAO (2011). Global food losses and food waste: Extent, causes and prevention. Rome. <http://www.fao.org/docrep/014/mb060e/mb060e00.pdf>

⁴ World Resources Institute (2017). Food Loss and Waste Accounting and Reporting Standard. Available from https://www.wri.org/sites/default/files/REP_FLW_Standard.pdf.

Food: Any substance that is intended for human consumption. This includes beverages and any substance that has been used in the manufacture, preparation, or treatment of food. “Food” also includes material that has spoiled and is therefore no longer fit for human consumption.

Inedible Parts: Components associated with food that, in a particular food supply chain, are not intended to be consumed by humans. Examples of inedible parts associated with food could include bones, rinds, and pits/stones. “Inedible parts” do not include packaging. What is considered inedible varies among users (e.g., chicken feet are consumed in some food supply chains but not others), changes over time, and is influenced by a range of variables including culture, socio-economic factors, availability, price, technological advances, international trade, and geography.

Destination: Where material removed from the food supply chain is directed, such as landfill, animal feed, composting, etc.

Preparations

A meeting should be organised with all staff who will be involved in this activity to:

- Familiarise them with food loss and waste assessments
- Agree on the objectives and scope of the analysis and data collection requirements
- Define the methodology to be applied for data collection and analysis, and
- How to coordinate the activities.

Sampling:

In many instances it will be impractical to weigh all the Food Loss and Waste (FLW), in which case a sample of FLW should be taken and weighed. Sampling is the process of choosing to measure or approximate, over a given period of time, the amount of FLW from a subset of FLW-producing units within a population, or from a fraction of the physical FLW produced. An entity may undertake both these types of sampling, which involve the following.

Selecting a representative sample impacts the accuracy of the data. It is important that the sample of FLW is as representative as possible of all units and all FLW in the population. There are two main approaches to sampling FLW-producing units, which differ in how well the data produced represents all units. The approaches are “probability” and “non-probability” sampling. In probability sampling, all FLW-producing units in the population stand a known and equal chance of being selected, thus produce a random sample that can statistically represent the characteristics of the whole population being studied. In non-probability sampling, the likelihood of any one FLW-producing unit being selected is often not known (e.g., sometimes because the exact size and nature of the population from which the sample will be drawn are not fully understood). Non-probability samples are less reliable indicators of the characteristics of the whole population. For further guidance, see Appendix A “Approaches to Sampling and Scaling Up Data” in the Loss and Waste Accounting and Reporting Standard (World Resources Institute, 2017).

Data Collection and Analysis

WRI’s Food Loss and Waste Accounting and Reporting Standard⁵ provides detailed steps for data collection methods and data analyses. Please refer to the following resources for further clarification:

- Chapter 8: Collecting, Calculating, and Analysing Data
- Chapter 11: Recording Causes of Food Loss and Waste

⁵ World Resources Institute (2017). Food Loss and Waste Accounting and Reporting Standard.

For a clear language step by step guide to residential household waste assessment, see Chapter 3 of NRDC's Estimating Quantities and Types of Food Waste at the City Level. Chapter 4 provides an overview of industrial, commercial and institutional waste assessments.

References and links to reports/tools

Eurostat (2012). Guidance on municipal waste data collection.

World Resources Institute (2017). Food Loss and Waste Accounting and Reporting Standard. Available from https://www.wri.org/sites/default/files/REP_FLW_Standard.pdf.

World Resources Institute (2017). Guidance on FLW Quantification Methods: Supplement to the Food Loss and Waste (FLW) Accounting and Reporting Standard, Version 1.0. Available from http://flwprotocol.org/wp-content/uploads/2017/06/FLW-Protocol_Guidance-on-FLW-Quantification-Methods.pdf.

WRAP Cymru (2016). National municipal waste compositional analysis in Wales.



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Milan Urban Food Policy Pact Monitoring Framework

March 2021 version

Indicator 42: Annual number of events and campaigns aimed at decreasing food loss and waste

MUFPP framework of actions' category: Food waste

The indicator collects information on the types of activities (events, campaigns, research studies), targeted sectors (households, business, foodservice, manufacturing, production etc.) and -if applicable-the actual impact on food waste reduction.

Overview table

| MUFPP Work stream | Food waste |
|---|--|
| MUFPP action | Convene food system actors to assess and monitor food loss and waste reduction at all stages of the city region food supply chain, (including production, processing, packaging, safe food preparation, presentation and handling, re-use and recycling) and ensure holistic planning and design, transparency, accountability and policy integration. Raise awareness of food loss and waste through targeted events and campaigns; identify focal points such as educational institutions, community markets, company shops and other solidarity or circular economy initiatives. |
| What the indicator measures | Annual number of events and campaigns aimed at decreasing food loss and waste |
| Which variables need to be measured / what data are needed | <ul style="list-style-type: none"> ▪ Types of activities (events, campaigns, research studies) ▪ Targeted sectors (households, business, foodservice, manufacturing, production etc.) ▪ If applicable: the impact on food waste reduction in kg |
| Unit of measurement | Annual number of events and campaigns |
| Unit(s) of Analysis | Data disaggregation by type of activity and target audience |
| Possible sources of information of such data | <ul style="list-style-type: none"> - Civil society annual reports - Annual reports of organizations that implement recovery and redistribution of safe and nutrition food for direct human consumption - Lifelong learning / education institutions - Records from solid waste or environmental departments or external stakeholders supporting events and campaigns |
| Possible methods/tools for data-collection | <ul style="list-style-type: none"> - Analysis of records for the actions taken - Survey among relevant stakeholders |

| | |
|--|--|
| Expertise required | Data analysis, survey design and implementation |
| Resources required/ estimated costs | Desk study resource allocation |
| Specific observations | To the extent possible the actual impacts in terms of food waste or food loss reduction should be highlighted. This will ultimately support assessment of the use and effectiveness, and cost-benefits, of the events and campaigns. |
| Examples of application | Measuring the Impacts of a Campaign to Reduce Food Waste on Campus in Thailand. This study took place in two dining halls at a large university during the fall 2016 semester ¹ . |

Rationale/evidence

A significant share of food produced for human consumption is never eaten. The Food and Agriculture Organization of the United Nations (FAO) estimates that a third, by weight, of all food produced in the world was lost or wasted in 2009. This level of inefficiency has significant economic, social, and environmental impacts. According to FAO estimates (FAO, 2014) the societal costs of a third of the food production getting lost or wasted each year amounts to about USD 2.6 trillion, of which USD 700 billion are societal costs of environmental impacts, USD 1 trillion are costs from economic losses of wasted and lost production, and USD 900 billion are costs due to individual well-being losses. This exacerbates the pressure on the global food system to ensure food security and nutrition for all. The amount of food lost or wasted translates into about a quarter of all water used by agriculture, and it requires cropland equivalent to an area the size of China, while being responsible for an estimated 8% of global greenhouse gas emissions. The wasted and discarded edible parts as well as the inedible parts associated with food (e.g., bones, rinds, pits/stones) take up space in landfills and contribute to increased management costs and greenhouse gas emissions during decomposition.

Many countries, cities, companies, and other entities can improve insight into how much, why, and where food and/or associated inedible parts are removed from the food supply chain. Achieving the Sustainable Development Goals is engaging all actors of the global food system. SDG 12.3 - *By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.*

Improved access to information and data availability in the public domain can:

1. Support strategies and prioritise actions to prevent food loss and waste
2. Identify the most efficient ways to prevent safe and nutritious food to be lost or wasted
3. Identify the context-based alternative – for when the resource becomes waste,

And thus help improve the design and targeting of food loss and waste campaigns and events.

For example, the Ontario Food Collaborative (OFC) in Canada is a cross-municipal collaboration to establish a multi-stakeholder strategy for reducing food waste in the Region, which resulted in the approval of a strategic plan of action in 2016. The Ontario Food Collaborative brings together stakeholders to take a holistic food systems approach in supporting individuals and families to reduce food waste. The OFC actors include Government (all levels), Non-Government Organisations (NGOs), Food Producers (Farmers), Food Processors/Manufacturers, Distributors and Retailers, and Restaurants/Food Services. Studies done by the Value Chain Management Centre, Food Waste in Canada (November 2010) and the 'York Region Integrated Waste Management Master Plan 2013' show that 40% of food produced and sold in Canada is wasted (valued at CAD 31 billion), with 51% of food waste in Canada occurring at home. Data are also available on the main sources of food waste in different parts along the supply chain. Household food waste results in economic losses of about CAD 1,500 per year for each Canadian household (equalling one quarter of the average household food

¹ <http://www.fao.org/save-food/regional/asiapacific/en/>

budget). In York Region, approximately 20% of the food wastage at home could be avoided by improved practices (based on York Region audit data). As part of their Waste Management Master Plan, the York Region has targeted a 15% reduction in avoidable food waste by 2031. The Environmental Services Department has developed a communications strategy and public education campaign to help residents take action to reduce food waste. The campaign was based on market research conducted by York Region amongst leading grocery stores to understand consumers' motivations regarding food purchasing, preparation, and waste; and to gather feedback and opinions on food waste and education².

Glossary/concepts/definitions used

Food Loss and Waste (FLW): All edible and inedible parts that are discarded or wasted.

FAO (2014) defines **food loss** as 'the decrease in quantity or quality of food'. It refers to agricultural, livestock, fisheries or forestry products intended for human consumption that are ultimately not eaten by people or that have incurred a reduction in quality reflected in their nutritional value, economic value or food safety.

An important part of food loss is '**food waste**', which refers to the discarding or alternative (non-food) use of food that was fit for human consumption – by choice or after the food has been left to spoil or expire as a result of negligence (FAO, 2014).

Recovery of safe and nutritious food for human consumption is to receive, with or without payment, food (processed, semi-processed or raw) which would otherwise be discarded or wasted from the agricultural, livestock, forestry and fisheries supply chains of the food system.

Redistribution of safe and nutritious food for human consumption is to store or process and then distribute the received food pursuant to appropriate safety, quality and regulatory frameworks directly or through intermediaries, and with or without payment, to those having access to it for food intake. (FAO, 2015)

Preparations

The team responsible for monitoring this indicator should agree on the type of data disaggregation and categories that will be used and the data collection method.

Sampling

Given that food loss and waste events and campaigns are still a new area, it is unlikely that sampling will be needed.

Data Collection and Analysis

During a monitoring/review meeting the following table can be discussed and filled. Specific observations made during the meeting can be added in the final column. Also recommendations for improvement can be added here.

Scoring sheet

² Gianfelici et al, 2016. York, Canada: The Ontario Food Collaborative-A city region initiative for preventing and reducing food waste. In: Dubbeling M., C. Bucatariu, G. Santini, C. Vogt and K. Eisenbeiß, 2016. *City Region Food Systems and Food Waste Management Linking Urban and Rural Areas for Sustainable and Resilient Development*. Deutsche Gesellschaft für Internationale Zusammenarbeit / GIZ, RUAF Foundation, Food and Agriculture Organization of the United Nations / FAO. Available from <http://www.ruaf.org/publications/city-region-food-systems-and-food-waste-management-2016> and <http://www.fao.org/3/a-i6233e.pdf>.

| Characteristics | Scoring | | | Total score | Disaggregation of information | Observations / Recommendations |
|---|---|---|-------------|-------------|--|--------------------------------|
| Presence of annual events and campaigns aimed at decreasing food loss and waste | Yes= 1 point | No= 0 points | | | Number and type of events and campaigns | |
| | | | | | | |
| Intended Audiences: -Consumer households -Schools/hospitals/public institutions -Private sector in the food chain (producers, processing, retail, catering) -Other private sector (offices) -Other | Yes, consumer households= 1 point | No consumer households= 0 points | | | Number and types of groups targeted for events and campaigns | |
| | Yes, schools/Hospitals/public institutions= 1 point | No schools/hospitals= 0 points | | | | |
| | Yes, private sector food chain= 1 point | Yes, private sector food chain= 1 point | | | | |
| | Yes, other private sector= 1 point | No, other private sector= 0 point | | | | |
| | Other (sub)categories= 1 point | No other (sub)categories= 0 points | | | | |
| Impact in terms of food waste reduction | Yes= 1 point | No= 0 points | | | Data on actual impact in Kg or % food loss and waste reduction | |
| | | | | | | |
| Design of events and campaigns is based on actual information on food loss and waste and stakeholder surveys | Yes, Completely= 2 points | Partial ly, 1 point | No=o points | | -Type of information and data used and how this was used -Type of questionnaires and the no. of replies received from participants (e.g. are participants able to identify the main causes and solutions to food loss and waste? Are they able to willing/able to implement actions to reduce loss and waste? | |
| | | | | | | |
| Total score: | | | | | | |

Note: For the purposes of these guidelines certain qualifiers and scoring points are defined in the scoring sheet above as to determine an overall score or value of the indicator. Nevertheless, for certain cities some of the qualifiers or scoring levels will be more crucial than others to determine the score of the indicator. Cities could, based on the local context and priorities, identify other or additional key qualifiers or scoring levels to define the overall score of the indicator. For example, one city may decide that targeting a specific audience/target group is critical as earlier data have shown that large percentages of food loss and waste are generated at specific stages of the food chain. Addressing

campaigns to such target groups may be reflected in giving these additional scoring points. Cities may also define other specific subcategories of target groups/audiences to be scored separately.

References and links to reports/tools

Dubbeling M., C. Bucatariu, G. Santini, C. Vogt and K. Eisenbeiß (2016). City Region Food Systems and Food Waste Management Linking Urban and Rural Areas for Sustainable and Resilient Development. Deutsche Gesellschaft für Internationale Zusammenarbeit / GIZ, RUAF Foundation, Food and Agriculture Organization of the United Nations / FAO. Available from <http://www.ruaf.org/publications/city-region-food-systems-and-food-waste-management-2016> and <http://www.fao.org/3/a-i6233e.pdf>.

Guidance on FLW Quantification Methods: Supplement to the Food Loss and Waste (FLW) Accounting and Reporting Standard, Version 1.0.
http://flwprotocol.org/wp-content/uploads/2017/06/FLW-Protocol_Guidance-on-FLW-Quantification-Methods.pdf

Hanson, C., Lipinski, B., Robertson, K., Dias, D., Gavilan, I., Gréverath, P. & Timmermans, T. (2016). Food loss and waste accounting and reporting standard. World Resources Institute: Washington DC, USA, 160. Available from https://www.wri.org/sites/default/files/REP_FLW_Standard.pdf



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Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 43: Presence of policies or regulations that address food waste prevention, recovery and redistribution

MUFPP framework of actions' category: Food waste

The indicator measures presence of policies or regulations that address food waste prevention, reduction, recovery and redistribution of safe and nutritious food for direct human consumption, food waste utilisation.

Overview table

| | |
|--|---|
| MUFPP Work stream | Food Waste |
| MUFPP action | Collaborate with the private sector along with research, educational and community-based organisations to develop and review, municipal policies and regulations to prevent waste or safely recover food. |
| What the indicator measures | Presence of policies or regulations that address food waste prevention, reduction, recovery and redistribution of safe and nutritious food for direct human consumption, food waste utilization |
| Which variables need to be measured / what data are needed | <ul style="list-style-type: none"> ▪ Number (and type) of policies and regulations ▪ Level of implementation, enforcement, information and communication tools available ▪ Number and type of target groups ▪ Monitoring, evaluation and update mechanisms ▪ Reporting towards SDG 12.3 mechanisms |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | <ul style="list-style-type: none"> ▪ Number (and types) of policies and regulations ▪ Number (and type) of information and communication mechanisms and target groups ▪ Resources allocated (human, financial) for each measure |
| Unit(s) of Analysis (i.e people under 5 years old, etc.) | <ul style="list-style-type: none"> ▪ Policies/ regulations related to food waste prevention and reduction ▪ Policies/ regulations related to recovery and redistribution of safe and nutritious food for direct human consumption ▪ Policies/ regulations related to context-based food waste utilization |

| | |
|---|---|
| Possible sources of information of such data | -Social protection and welfare local authorities/national reports -Annual reports of organisations that implement recovery and redistribution of safe and nutritious food for direct human consumption -Local solid waste management departments and private haulage companies |
| Possible methods/tools for data-collection | Policy review and analysis |
| Expertise required | Policy analysis |
| Resources required/ estimated costs | |
| Specific observations | |
| Examples of application | Examples of country and city initiatives to address food waste prevention, recovery and distribution can be found here: - https://www.save-food.org/ - Dubbeling M., C. Bucatariu, G. Santini, C. Vogt and K. Eisenbeiß (2016). City Region Food Systems and Food Waste Management Linking Urban and Rural Areas for Sustainable and Resilient Development. Deutsche Gesellschaft für Internationale Zusammenarbeit / GIZ, RUAF Foundation, Food and Agriculture Organization of the United Nations / FAO. Available from http://www.ruaf.org/publications/city-region-food-systems-and-food-waste-management-2016 and http://www.fao.org/3/a-i6233e.pdf . - http://www.milanurbanfoodpolicypact.org/good-practices/ |

Rationale/evidence

A significant share of food grown for human consumption is never eaten. The Food and Agriculture Organization of the United Nations (FAO) estimates that a third, by weight, of all food produced in the world was lost or wasted in 2009. This level of inefficiency has significant economic, social, and environmental impacts. For example, it results in approximately US\$940 billion per year in economic losses, according to FAO estimates. It exacerbates the pressures on the global food system and increases the risk of food insecurity. And the amount of food lost or wasted translates into about a quarter of all water used by agriculture, requires cropland equivalent to an area the size of China, and is responsible for an estimated 8% of global greenhouse gas emissions. In 2014 the Committee on World Food Security (CFS) addressed Food Loss and Waste (FLW) prevention and reduction in order to promote more equitable and sustainable food systems - based on a report by its High Level Panel of Experts (HLPE, 2014). The 2014 CFS's policy roundtable recommended an enabling environment facilitated through the "food use-not-loss-or-waste" hierarchy (i.e. the prevention, recovery and redistribution of safe and nutritious food to people). The edible and wasted/discarded parts and the inedible parts associated with food (e.g., bones, rinds, pits/stones) take up space in landfills, and contribute to greenhouse gas emissions during decomposition.

Many countries, cities, companies, and other entities can improve insight into how much, why, and where food and/or associated inedible parts are removed from the food supply chain. Achieving the Sustainable Development Goals is engaging all actors of the global food system.

SDG 12.3 - By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.

Improved access to information and data availability in the public domain can:

1. Support strategies and prioritize actions to prevent food loss and waste
2. Identify the most efficient ways to prevent safe and nutritious food to be lost or wasted
3. Identify the context-based alternative – for when the resource becomes waste,

And ultimately enhance the design and implementation of food loss and waste prevention, reduction and recycling policies and programmes.

Cities around the world already implement food loss and waste programmes and policies. Riga (Latvia) for example support the programme "From food waste to healthy, off-season food". Getliņi EKO" is an environmentally friendly, high technology ecological waste management company owned by the Municipality of Riga (in its majority) that operates the waste landfill "Getliņi". It is responsible for the collection and ecological management of waste within the Riga waste management area. About 50% of all waste produced in Latvia, or 300'000 tons of waste annually, is transported to "Getliņi". Food waste makes up 41.5% of waste biomass. Food waste is deposited in environmentally safe biodegradable cells. The landfill gas that forms in the cells is channelled to the Getliņi power unit and transformed into energy. A by-product of energy production is heat that is used for greenhouses that are located in the territory of the landfill and operated by "Getliņi EKO". The greenhouses grow tomatoes during the local vegetable off-season and supply Riga municipality's citizens¹.

The city of Bruges (Belgium) has developed through a bottom-up process a set of guidelines to build a sustainable food policy. Curbing food waste in public organisations is one of the actions highlighted by stakeholders. Food waste reduction in hospitals and healthcare centres presents unique challenges. Therefore, the City of Bruges set out on a programme whose objectives are: to measure and analyse current food waste and its economic impact in four health care institutions in Bruges; to support them in reducing food waste by coaching; to develop and disseminate at least three successful methodologies to reduce food waste in health care institutions; and to raise awareness among health care institutions about food waste, its impact and solutions. Health care institutions are trained to conduct a baseline food waste measurement, then during a one-day workshop, personnel of the healthcare institutions together with food waste experts go through a creative process to develop solutions to their challenges. Each institution's team tests the solution they created under the guidance of experts. After a first test, feedback is gathered among patients and colleagues. Subsequently, impacts of solutions put in place are analysed. The best solutions are then scaled up and evaluated.²

Glossary/concepts/definitions used

Food Loss and Waste (FLW): All edible and inedible parts that are discarded or wasted.

FAO (2014) defines **food loss** as 'the decrease in quantity or quality of food'. It refers to agricultural or fisheries products intended for human consumption that are ultimately not eaten by people or that have incurred a reduction in quality reflected in their nutritional value, economic value or food safety.

An important part of food loss is '**food waste**', which refers to the discarding or alternative (non-food) use of food that was fit for human consumption – by choice or after the food has been left to spoil or expire as a result of negligence (FAO, 2014).

Recovery of safe and nutritious food for human consumption is to receive, with or without payment, food (processed, semi-processed or raw) which would otherwise be discarded or wasted from the agricultural, livestock, forestry and fisheries supply chains of the food system.

Redistribution of safe and nutritious food for human consumption is to store or process and then distribute the received food pursuant to appropriate safety, quality and regulatory frameworks directly

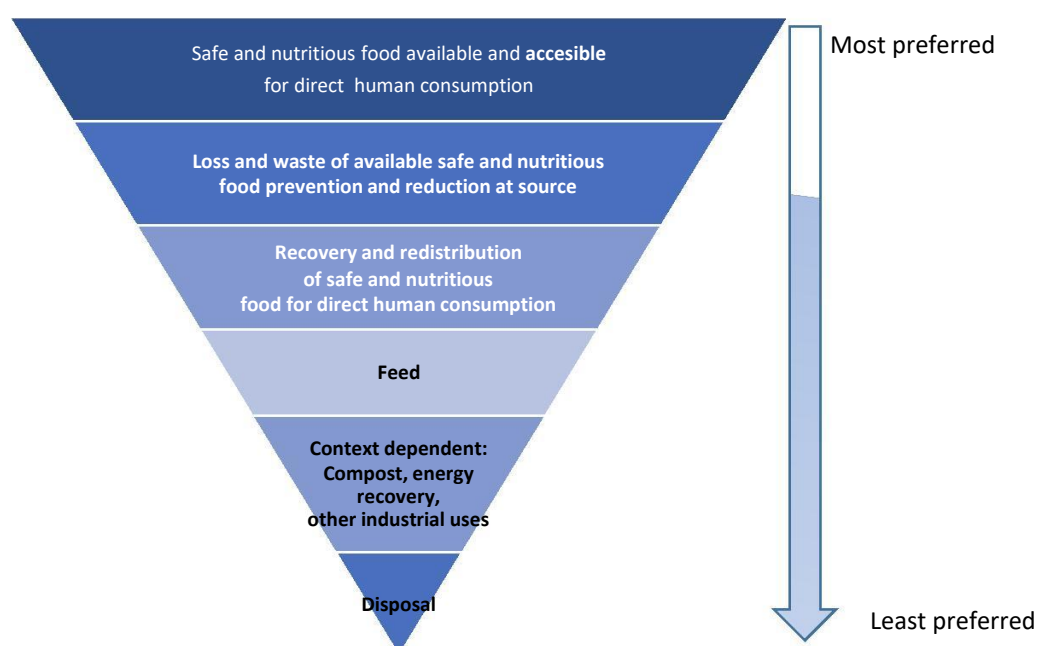
¹ See further: <http://www.milanurbanfoodpolicypact.org/wp-content/uploads/2016/11/MPA-2016-winning-good-practices.pdf> and <http://www.getlini.lv/en/>

² See further: <http://www.milanurbanfoodpolicypact.org/wp-content/uploads/2017/10/MPA-winners-2017.pdf>

or through intermediaries, and with or without payment, to those having access to it for food intake (FAO, 2015).

Policies, regulations, knowledge, norms, standards and data enable coherent, effective and accountable collective action – with governments and/or local authorities that lead – in consultation and implementation - with actors across civil society and the private sector. These can define goals and targets; develop and implement; share information, experiences, and methods in both bottom-up and top-down monitoring and reporting processes.

Figure 1. Food-use-not-loss-or-waste hierarchy



Source: Adapted from CFS 41, 2014 (Bucataru, 2016)

Preparations

The team responsible for monitoring this indicator should agree on the type of data disaggregation and categories that will be used and the data collection method.

Sampling:

Given that food loss and waste policies and regulations are still a new area, it is unlikely that sampling will be needed.

Data Collection and Analysis

During a monitoring/review meeting the following table can be discussed and filled. Specific observations made during the meeting can be added in the final column. Also recommendations for improvement can be added here.

Scoring sheet

| Characteristics | Scoring | | | Total score | Disaggregation of information | Observations/ Recommendations |
|--|---------------------------|--------------|--------------|-------------|---|-------------------------------|
| Presence of policies or regulations that address food waste prevention, recovery and redistribution | Yes= 1 point | No= 0 points | | | Number and type of policies and regulations | |
| | | | | | Distinguish among prevention, recovery and redistribution | |
| | | | | | | |
| Level of implementation: is the municipal policy/implementation actually implemented or enforced? | Yes, completely= 2 points | Yes= 1 point | No= 0 points | | Discuss for each of the policies or regulations. | |
| | | | | | Indicate reasons for partial or non-implementation/enforcement | |
| Information and communication: Are policies and regulations widely shared within city government and to potential beneficiaries | Yes= 1 point | No= 0 points | | | Number and type of information and communication mechanisms and target groups | |
| | | | | | | |
| Resources allocated (human, financial) – are they adequate? | Yes= 1 point | Yes= 1 point | No= 0 points | | Discuss for each of the policies or regulations. | |
| | | | | | | |
| Total score: | | | | | | |

References and links to reports/tools

CFS. 2014. Policy recommendations. Food Losses and Waste in the Context of Sustainable Food Systems. Available from: <http://www.fao.org/3/a-av037e.pdf>

Dubbeling M., C. Bucatariu, G. Santini, C. Vogt and K. Eisenbeiß (2016). City Region Food Systems and Food Waste Management Linking Urban and Rural Areas for Sustainable and Resilient Development. Deutsche Gesellschaft für Internationale Zusammenarbeit / GIZ, RUAF Foundation, Food and Agriculture Organization of the United Nations / FAO. Available from <http://www.ruaf.org/publications/city-region-food-systems-and-food-waste-management-2016> and <http://www.fao.org/3/a-i6233e.pdf>.

Guidance on FLW Quantification Methods: Supplement to the Food Loss and Waste (FLW) Accounting and Reporting Standard, Version 1.0.
http://flwprotocol.org/wp-content/uploads/2017/06/FLW-Protocol_Guidance-on-FLW-Quantification-Methods.pdf

Hanson, C., Lipinski, B., Robertson, K., Dias, D., Gavilan, I., Gréverath, P. & Timmermans, T. (2016). Food loss and waste accounting and reporting standard. World Resources Institute: Washington DC, USA, 160. Available from https://www.wri.org/sites/default/files/REP_FLW_Standard.pdf.

Various resources at: FAO. Global Initiative on Food Loss and Waste Reduction. Available from:
www.fao.org/save-food



Food and Agriculture
Organization of the
United Nations



Milan Urban Food Policy Pact Monitoring Framework

July 2018 version

Indicator 44: Total annual volume of surplus food recovered and redistributed for direct human consumption

MUFPP framework of actions' category: Food waste

The indicator measures the totality of available food recovered and redistributed for direct human consumption along the entire urban food supply chain, occurring from the time at which availability is recorded (in urban and peri-urban areas) until it reaches and is used by the final urban consumer as food.

Overview table

| MUFPP Work stream | Food Waste |
|--|--|
| MUFPP action | Save food by facilitating recovery and redistribution for human consumption of safe and nutritious foods , if applicable, that are at risk of being lost, discarded or wasted from production, manufacturing, retail, catering, wholesale and hospitality. |
| What the indicator measures | The indicator measures the totality of available food recovered and redistributed for direct human consumption along the entire urban food supply chain, occurring from the time at which availability is recorded (in urban and peri-urban areas) until it reaches and is used by the final urban consumer as food. |
| Which variables need to be measured / what data are needed | Safe and nutritious food recovered and redistributed for direct human consumption at various system stages: <ul style="list-style-type: none"> • Production • Handling and storage • Processing and packaging • Catering • Distribution and point of purchase • Household/ consumption If desired: <ul style="list-style-type: none"> - Commodity or types of food recovered/redistributed for human consumption - Kcal or nutrition content of different types of food waste/loss |
| Unit of measurement (i.e. Percentages, averages, number of people, etc.) | -Tonnes or Kilograms of safe and nutritious food recovered and redistributed for direct human intake |

| | |
|---|--|
| Unit(s) of Analysis (i.e people under 5 years old, etc.) | -Weight of safe and nutritious food recovered and redistributed. If calculated on a quantity basis (volume), this can subsequently be transformed to dietary energy supplies (in kcal) per capita allowing consistent aggregation and comparison. -The indicator will be calculated on an annual frequency and can be broken down by commodity. |
| Possible sources of information of such data | -Social and welfare entities -Municipal agriculture -Records held by producers, processors, markets, retailers, caterers, and consumers -Food banks, other social and church organisations engaged in food distribution -Food purchase surveys -Food insecurity surveys |
| Possible methods/tools for data-collection | -Primary data collection: sampling and weighing -Secondary data analysis: previous studies or records |
| Expertise required Resources required/ estimated costs | E.g. Socio-economic/regulatory/human nutrition The costs of measuring recovered and redistributed safe and nutritious food directly and regularly, for example by sampling and weighing, can be prohibitive. Calculation of the indicator should rather rely on data records kept by various actors in the food supply chain (producers; processors, markets) or by organisations involved (agriculture department, food banks, NGOs, other social, community and church organisations recovering and redistributing food). |
| Specific observations | This indicator is closely linked to Indicator 41 “ <i>Total annual volume of food losses & waste</i> ”, which details instruction on weighing and calculations of total food loss and waste before any recovery and redistribution of safe and nutritious food for direct human consumption took place or any food waste context-based utilisation was implemented. |
| Examples of application | |

Rationale/evidence

Achieving the Sustainable Development Goals implies engaging all actors of the global food system. SDG 12.3 calls for “*By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses*”. Food loss and waste prevention, reduction and management are key components of sustainable city region food systems. Globally it has been estimated (FAO, 2011) that 1/3 of all food produced for human consumption is lost or wasted in supply chains at the local, national, regional and global level. Consumer level waste accounts for 22% and distribution waste accounts for 12% of these losses, making such waste of particular relevance to peri-urban and urban areas.

Food loss and waste (FLW) is a symptom of an unsustainable food system that is undermined in its capacity to provide food and nutrition security for all. Food security and nutrition is achieved if adequate food (in terms of safety, quality, quantity and socio-cultural acceptability) is available and accessible for and effectively utilised by all individuals at all times for a healthy and active life. FLW directly impacts the availability and accessibility of safe and nutritious food for human consumption.

Recovery and redistribution of safe and nutritious food for human consumption has been highlighted as an important strategy for the prevention of food waste and for contributing to urban food security. According to a MANA-FAO 2015 study, 21% of the fruits and vegetables produced (1.4 million tonnes) in Colombia are lost every year.¹ The given volumes of food losses could, however, feed 9.5 million people for one year.²

¹ <http://www.fao.org/colombia/fao-en-colombia/colombia-en-una-mirada/en/>

² <http://www.asohofrucol.com.co/archivos/biblioteca/Desperdicio de alimentos en Colombia.pdf>

Current forms of recovery and redistribution of safe and nutritious food involve a variety of stakeholders in a diverse mix of initiatives, such as: gleaning networks, food banks (warehouse, direct service, virtual, mixed form), social supermarkets and community shops, food pantries, soup kitchens and community/charitable programmes, shelters, mixed form of social protection programmes that provides food, directly or indirectly, among other services (<http://www.fao.org/platform-food-loss-waste/food-waste/food-waste-reduction/country-level-guidance/en/>). Examples from actions taken by cities include:

Ile-de-France region (the region around Paris in France) concentrates the country's largest social inequalities and highest food waste rate. The causes of food waste are: (i) products close to or over "best-before date", (ii) size or other quality criteria of the food does not fit with the industries' requirements, or (iii) overestimated orders. In response to these challenges, social supermarkets emerged in France in the 1990s that sell food and consumer products at lower prices than conventional supermarkets and that restrict access to people living below a certain income threshold. The French Social Supermarket Network (ANDES) provides its consumers fresh fruits and vegetables, amongst others through its programme *Potager de Marianne*, which supplies social supermarkets with fresh fruits and vegetables likely to be discarded by local wholesalers, distributors, and food industries.

The Municipality of Medellin (Colombia) also recognises the importance of formulating national public policy guidelines to address prevention and reduction of food loss and food waste. It supports the SACIAR Foundation, the first food bank in Medellin. SACIAR runs: (1) The REAGRO programme, which is focused on the recovery and redistribution of safe and nutritious food for human consumption through food banks and (2) The NUTRIAMOR® programme, which is focused on food waste recovery and value addition for safe and nutritious food resources in the banana export supply chain. Left-over bananas are processed into powder and used as a supplement for young children, pregnant and breastfeeding women, and the elderly, in conditions of nutrition vulnerability³.

Local governments thus need further data on the types of food that end up in the waste stream, what proportion is edible versus inedible and what proportion of food suitable for safe human consumption is actually recovered and redistributed. The World Resources Institute has developed a comprehensive "Food Loss and Waste Accounting and Reporting Standard" to facilitate the quantification of food loss and waste (FLW)⁴. This methodology is further described in the methodological guidelines for Indicator 41 (*Total annual volume of food losses & waste*).

The costs of measuring recovery and redistribution safe and nutritious food directly and regularly, for example by sampling and weighing, are often prohibitive. Calculation of the indicator should rather rely on data records kept by various actors in the food chain (producers; processors, markets) or by organisations involved (agriculture department, waste management, food banks, NGOs, other social, community and church organisations recovering and redistributing the safe and nutritious food).

Glossary/concepts/definitions used

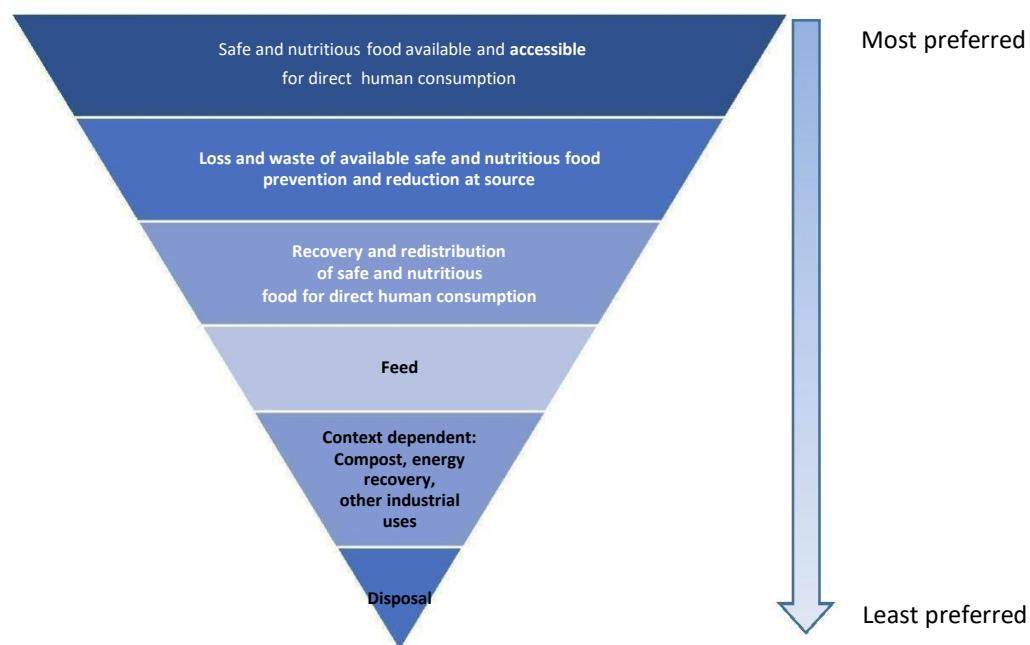
FAO (2014) defines **food loss** as 'the decrease in quantity or quality of food'. It refers to agricultural or fisheries products intended for human consumption that are ultimately not eaten by people or that have incurred a reduction in quality reflected in their nutritional value, economic value or food safety.

³ Dubbeling M., C. Bucutariu, G. Santini, C. Vogt and K. Eisenbeiß, 2016. City region food systems and food waste management- Linking urban and rural areas for sustainable and resilient development. GIZ, RUAF Foundation and UN FAO. Bonn and Eschborn. <https://ruaf.org/document/city-region-food-systems-and-food-waste-management/>

⁴ World Resources Institute (2017). Food Loss and Waste Accounting and Reporting Standard.

An important part of food loss is '**food waste**', which refers to the discarding or alternative (non-food) use of food that was fit for human consumption – by choice or after the food has been left to spoil or expire as a result of negligence (FAO, 2014).

Recovery of safe and nutritious food for human consumption is to receive, with or without payment, food (processed, semi-processed or raw) which would otherwise be discarded or wasted from the agricultural, livestock, forestry and fisheries supply chains of the food system. **Redistribution** of safe and nutritious food for human consumption is to store or process and then distribute the received food pursuant to appropriate safety, quality and regulatory frameworks directly or through intermediaries, and with or without payment, to those having access to it for food intake (FAO, 2015).

Figure 1. Food-use-not-loss-or-waste hierarchy

Source: Adapted from CFS 41, 2014 (Bucatariu, 2016)

Preparations

A meeting should be organised with all staff who will be involved in this activity to:

- Familiarise them with the methodological guidelines
- Agree on the objectives and scope of the analysis and data collection requirements
- Define sources of secondary data
- How to coordinate the activities.

Sampling

For a comprehensive assessment, it is suggested to collect data from:

- Records kept by 100% of all gleaning networks, food banks (warehouse, direct service, virtual, mixed form), social supermarkets and community shops, food pantries, soup kitchens and community/charitable programmes, shelters, mixed form of social protection programmes that provides food, directly or indirectly, among other services, working in the local government area.
- A sample (e.g. 10%) of stakeholders directly engaged in different parts of the food chain (from producers to consumers) to record direct individual/organisational food recovery and redistribution initiatives and volumes.

Note that records may be often routinely collected for reasons other than quantifying FLW (e.g., warehouse record books, social responsibility).

Data Collection and Disaggregation

Secondary data, e.g. records kept by different organisations on food waste recovery and redistribution for human consumption can be collected from:

- Municipal agriculture department;
- Municipal or national social programmes for safe and nutritious food recovery and redistribution for direct human consumption

- Records held by producers, processors, markets, retailers, caterers, and consumers directly engaged in food recovery and redistribution
- Food banks, other non-governmental social, community and church organisations engaged in food recovery and redistribution
- Social protection, food security surveys.

If no records are held by various stakeholders in the food chain, a survey can be implemented (10% sampling) to collect information on food loss and waste volumes, recovery and redistribution (either directly or through other organisations). Such a survey could then also include additional questions on opportunities and obstacles for increased recovery and redistribution of food for human consumption.

Data Analysis

Based on all data records (or surveys), total annual volumes of safe and nutritious food recovered and redistributed for direct human consumption can be calculated.

If data are available on the types of food/commodities, volumes can be transformed into dietary energy (kcal)/nutrient content. On the basis of such data and consumption requirements, the number of people that could be fed, can be calculated.

References and links to reports/tools

Bucataru in FAO. 2016 Knowledge and Information for Sustainable Food Systems. Available from <http://www.fao.org/3/a-i5373e.pdf>.

CFS. 2014. Policy recommendations. Food Losses and Waste in the Context of Sustainable Food Systems. Available from <http://www.fao.org/3/a-av037e.pdf>.

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Various resources at: FAO. Global Initiative on Food Loss and Waste Reduction. Available from www.fao.org/save-food.

World Resources Institute (2017). Food Loss and Waste Accounting and Reporting Standard. Available from <https://www.wri.org/publication/food-loss-and-waste-accounting-and-reporting-standard>. Specifically Chapter 6 (Establishing the scope of a FLW inventory) and Chapter 7 (Deciding how to quantify FLW) are of relevance.

World Resources Institute (2017). Guidance on FLW Quantification Methods: Supplement to the Food Loss and Waste (FLW) Accounting and Reporting Standard, Version 1.0. Available from http://flwprotocol.org/wp-content/uploads/2017/06/FLW-Protocol_Guidance-on-FLW-Quantification-Methods.pdf.