



Food and Agriculture
Organization of the
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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](#)