Global Forum on Food Security and Nutrition

Proceedings

Street food and urban and periurban agriculture and horticulture: perspectives for a strategic coalition towards food security

Collection of contributions received

Discussion No. 110 from 17 November to 12 December 2014

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Introduction to the topic

Dear FSN Forum members,

I am very glad to be the facilitator of this second online discussion1 about street food vending.

My name is Stefano Marras. I am currently a postdoctoral fellow at the Department of Business Administration, Finance, Management and Law, and at the Department of Sociology and Social Research of the University of Milan-Bicocca, Italy.

The aim of this second discussion is to share perspectives on actual and potential links between street food vending and urban and periurban agriculture and horticulture (UPA), analyzing if and in which way such links may represent the basis for possible strategies to enhance food security in urban areas.

This discussion will be an opportunity to expand and strengthen the network of specialists involved in street food trade and governance worldwide.

Introduction

Urban food security depends on food availability, access, and quality over time. With the rapid growth of the urban population and the low nutritional levels of the urban and peri-urban poor, there is tremendous scope for increasing supply of accessible, safe and nutritious food, while ensuring its sustainable production. Academics, FAO, WHO, all recognized street food – i.e. ready-to-eat foods and beverages prepared and/or sold by vendors or hawkers, in the street and similar locations – and urban and peri-urban agriculture and horticulture (UPA) – the growing of plants and the raising of animals within and around cities – as having the potential to help achieve food security in urban areas.

Street foods account for a significant proportion of daily urban food consumption for millions of low- and middle-income consumers in urban areas, representing the least expensive and most accessible means of obtaining a nutritionally balanced meal outside the home (provided that the consumer is informed and able to choose an appropriate combination of foods). In addition, the preparation and sale of street food provides a regular source of income for millions of men and women with limited financial, social, and cultural capital, since the start-up investment and the overheads are relatively low, and cooking requires little or no formal training.

Within this framework, UPA can provide street food vendors fresh, nutritious, less expensive ingredients. Although in most cities in developing countries an important part of urban agricultural production is for self-consumption, the importance of the market-oriented urban agriculture, both in volume and economic value, should not be underestimated. Research has shown that market-oriented, small-scale urban agriculture is often more profitable than small-scale agricultural production in rural areas and generates incomes above formal minimum wage level. A comparative advantage for the urban producers is their close proximity to the urban consumers. Urban vegetable growers spend less on transport, packaging and storage, and can sell directly through street food stands and market stalls. The urban grower can capture as much as 50-75 percent of the

1 A first online discussion on street foods with the title "Street foods: the way forward for better food safety and nutrition" was held on the FSN Forum in 2011.

retail price, depending on the marketing system, whereas the rural farmer may receive more typically 15-40 percent.

Local food production can be an important source of supply of fresh vegetables for street food preparation. Since locally produced food requires less transportation and refrigeration, it can supply nearby markets with fresher and more nutritious products at competitive prices. Food growing in cities, thus, can and does help improve the quality of people's diets by providing a greater choice of fresh fruits and vegetables at better prices, particularly to people in the low-income bracket. More common street foods, in most countries, are based on animal-source ingredients often derived from animals kept in cities, there where the commercial peri-urban production of livestock is an extremely fast-growing sector, representing 34 percent of total meat production and nearly 70 percent of egg production worldwide). Nonetheless, fresh salad preparations have increasingly become an integral component of street food sold in cities like Accra, Ghana, and Santiago, Chile. Some urban and peri-urban farmers are even moving towards intensive production of high value-added produce, rather than basic food stuffs; such activities can become major sources of income for more sophisticated members of the population who have investment capacity.

In Bogota, Colombia we can see another trend in direct marketing, wherein the farmers-producer and retailer sit on the board of the corporation and jointly decide what will be produced when. This trend and others are also supported by new communications systems.

Nonetheless, both, street food vending and urban agriculture are still largely debated and opposed or rather ignored by planners and both street food vendors and UPA farmers often operate without permits. Since it is officially "invisible", the sector receives no public assistance or oversight in many cities. For this reason, UPA carries health and environmental risks – potential use of contaminated land and water smells and noise pollution, and inappropriate use of pesticides and of raw organic manure that can leak into water sources. Food production, processing, and vending in the peri-urban zones, while providing employment, do raise issues related to pollution and food safety.

Authorities in many countries have responded to this problem with weak and erratic implementation of legislation on street food and urban agriculture. As formal and informal standards grow, there is a real risk that the poor will be excluded from markets.

Governments should recognize the role played by UPA and street food in making food available to poor families in urban areas and in generating income; they must face and cope with the prevailing problems and accept urban livelihood grassroots strategies including urban farming and street vending, as well as realize the benefits and opportunities created through productive use of green open spaces in cities, both, in terms of nutrition and environmental development.

FAO supports the transformation of UPA and street vending into a recognized urban land use and economic activity in their own right, integrated into national and local agricultural development strategies, food and nutrition programmes, and urban planning. FAO helps national and regional governments and city administrations optimize their policies and support services for urban and peri-urban agriculture, and improve production, processing and marketing systems. Over time the image of urban and peri-urban agriculture may evolve into that of accepted and needed activities which will supersede the temporary and crisis-oriented image of the past.

Questions

In light of this, I would like to raise the following questions /reflections to be discussed:

1. Are you aware of actual direct links between street food vendors and local urban farmers?
2. Are there examples of concrete measures promoted by local authorities to recognize and increase such kind of link?
3. If so, how have these actions influenced consumers' choices towards street food?
4. Have similar initiatives been prompted directly by street food vendors associations? How?
5. I believe that creating a system of incentives (e.g permits to sell in areas where there are more potential customers, such as near schools, hospitals, transportation hubs; vouchers or some sort of recognition mechanism for good practices) is required for motivating the street vendors to use locally-sourced, fresh produce. Do you think that such incentives could be successful, and why? What other types of incentives might be, and why?
6. What new mechanisms can be put in place to raise peoples' awareness on the consequences of their street eating habits? Do you know any advertising methods which have been proven effective?

I wish a fruitful exchange and I thank you in advance for your inputs as they will contribute to refine any future intervention on the ground.

Many thanks,

Stefano Marras

Contributions received

1. Agape Ishabakaki, University of Dar es Salaam, United Republic of Tanzania

Hi members,

I am a graduate Economist from University of Dar es Salaam interested in Agriculture activities.

This topic has caught my eye because once I practiced Horticulture products especially Chinese and Sp Amaranthus commonly known as "Mchicha" in Tanzania.

I carried out a research in Bukoba town. It was very inspiring due the output that came out.

It took me a few days to prepare the products.

For sure these crops are very liked for health purposes to everyone.

I here attach my project that explains everything.

Best regards,

Agape Ishabakaki

2. Stefano Marras, Università degli Studi di Milano-Bicocca, Italy – facilitator of the discussion

Dear Agape,

Thanks so much for sharing your interesting project, and congratulations.

It would be interesting if you could provide more information about the following aspects:

- What is the total amount of Chinese and SP amaranthus (Mchicha) that you obtain? (in kilograms or pounds)
- What amount did you managed to sell? In how much time?
- What price did you set for your products? (per kilograms or pounds)
- How much do these products normally cost on the market?
- Who were your main customers?
- How many hours a day did you have to devote to the cultivation?
- How many hours a day did you have to devote to vending?
- How did you deal with the problem of birds that ate your crop?
- Where do you get water to irrigate?
- Where did you purchase the seeds?
- How many more farmers grow the same products in the vicinity of your plot?

Looking forward to your reply.

Best,

Stefano

3. Gisèle Yasmeen, University of British Columbia, Canada

Greetings from Vancouver, Canada!

I have worked on streetfoods with some work on urban agriculture for more than 20 years. I look forward to participating in the discussions over the coming weeks.

Gisèle Yasmeen

4. Santosh Kumar Mishra, S. N. D. T. Women's University, India

1. Are you aware of actual direct links between street food vendors and local urban farmers?

Yes, in a sharing economy, individuals look less to big chain stores to meet their food needs, and look more to each other. Food travels fewer miles between producers and consumers, making fresher, tastier, and often healthier food more accessible to city residents. Urban farms, food gleaning programs, community-supported food enterprise, home-based food enterprise, mobile vending, and shared commercial kitchens build food economies based on local production, processing, and exchange. This approach promotes health, local jobs, and community interaction, while reducing the environmental degradation, food insecurity, health risks, and unequal access associated with industrial agriculture and disjointed food systems. Cities can play a major role in removing legal barriers and facilitating the transition to community-based food production.

The concept of street food is the outcome of urbanization process. In most developing countries, local governments and authorities are responsible for establishing regulations for food hygiene and trade. They build and manage the markets and are responsible for road construction, which is crucial to get food to markets. Expanding cities need more and more infrastructure, transport facilities, slaughterhouses. Unfortunately, food supply and distribution aspects are often taken into consideration in urban planning and management decisions without the necessary understanding of the complex interrelation of activities. As a result, existing markets are not maintained, new markets remain underutilized and conflicts often occur between food producers, traders and street vendors. Local authorities are being given more and more responsibilities each day because of decentralization programs, but often without the necessary financial, human and technical resources.

The food supply and distribution chain is the set of activities in rural, peri-urban and urban areas that provide urban households with a variety of food products. The chain begins with production of food and includes food assembly, packaging, transport, storage, processing, buying and selling – wholesale and retail, as well as street vending. The efficiency of the chain is certainly important, as is its capacity to provide stable supplies of good-quality and safe food.

As the prevalence of the sustainable agriculture and organic farming continue to grow, there's an increasing amount of focus on locally, freshly grown food. While it might be hard to imagine, New York has become one of the centers of *"urban farming"* in the United States**,** with rooftop gardens popping up all over the city, even in lower Manhattan. Perhaps it's no real surprise, as New York was the stage for the largest climate protest in history only recently.

There is also, of course, a very real link between the three growing movements of urban farming, sustainability, and eating locally, which so far looks to be a powerful and positive force that could change how we perceive and enjoy food for future generations. Perhaps the popularity of the urban farming movement in New York is due not only to the fact that rooftop gardens grant access to super fresh and healthy ingredients, but also that this sort of farming is so accessible. Community gardening and growing initiatives are a great and easy way to become actively involved in changing the way we grow our food and treat the environment.

A number of restaurants have already made rooftop farming the focus of their menus, and almost all urban farms in New York have regular farmers markets and volunteer programs. The Battery Urban Farm in Lower Manhattan runs mainly as an educational facility, showing local students how they can cultivate and grow their own food in the city environment, which is a great step for the future.

Urban farming is certainly here to stay, and could well be instrumental in helping to solve the problems of feeding an ever growing human population without inflicting severe damage to the natural environment. There are a number of more subtle benefits as well. Urban farming can create jobs in deprived areas and grant locals access to good quality, affordable and healthy food, which may previously have been difficult to obtain. In fact, there are very prominent financial incentives for all involved. Urban farmers can afford to sell produce cheap, and buying local urban farmed food can therefore be a much better financial option for local residents. With an increasing focus on eco-friendly living, urban farming offers a cheap, affordable option for everyone. This can in turn help make sustainability more feasible, as part of wider environmentally friendly lifestyle approaches that can still be achieved on a budget.

"Multicolored carrots grown at the Brooklyn Grange rooftop farm, New York, USA"

While New York is at the forefront of the urban farming movement in the U.S., the community- and environmentally-friendly approach is starting to take root in a number of other countries worldwide, too. Perhaps fundamentally, it offers a very real solution to the growing problem of food poverty that affects around 20% of all city occupants. Food poverty is an issue even in developed countries (such as the U.S., with around 50 million people thought to be in food poverty as of 2009), and urban farming offers an elegant, cheap and effective solution that operates outside of the sometimes suffocating bureaucracy of government.

As global awareness continues to increase, it's very likely that urban farming will become a major industry, although thanks to the community focused nature of the approach, could remain firmly out of the grasp of large food and farming conglomerates. This, in turn, could end up reducing our reliance on industrial levels of farming, going on to reduce environmental impacts and climate problems to which the current food and farming industry is a major contributor.

Overall, beyond the numerous advantages that urban farming offers in terms of benefits to the local community and environment, it offers something arguably even greater – the ability to proactively foster change with our own hands. In the U.S., this can often be a seemingly impossible task when going through official channels, but urban farming is showing many of us that even the most impoverished and ignored communities in large inner cities can empower themselves by taking control of their own food supply. There are certainly huge advantages that go hand in hand with urban farming, not least the ability to help ourselves while at the same time helping each other and the environment. As a result, New York could well be the breeding ground for something that changes how we think of farming in the future, in many cases for the better.

2. Are there examples of concrete measures promoted by local authorities to recognize and increase such kind of link?

Urban food security is a major challenge that requires action at all levels – global, national and local. As long as policy debates continue to focus only on production, however, the role local governments can play will remain limited. Yet the priorities of the residents of low-income settlements highlight the importance of urban planning and infrastructure in ensuring access to safe food and suggest a number of ways for local governments to act on the urban space, for example:

- *improving* access to lean water and sanitation,
- *reducing* exposure to floods and other extreme weather events, and
- *ensuring* effective transport and storage.

Of course, such efforts are part and parcel of making cities more climate-resilient. Experiences in Nairobi and Accra demonstrate the key role local government can play in partnership with organizations of the urban poor. Given below are examples from Nairobi and Accra:

Initiatives to reduce urban poverty often neglect the priorities of the residents in low-income and informal settlements and their capacity to organize and contribute to the upgrading of their settlements. Accra's Old Fadama and Nairobi's Mathare are both densely populated low-income settlements with severely inadequate infrastructure and housing. In both settlements, members of the federations of the urban poor, led by women's savings groups, began devising initiatives to alleviate food insecurity. First, they collected information on the main constraints faced by their fellow esidents. This included mapping out the locations of street vendors and their exposure to environmental hazards, such as proximity to open-air sewers, stagnant water and garbage dumps. It also included assessing awareness of food handling and storage by street vendors, which can affect the safety of the food they sell.

The high cost of food and inadequate incomes quickly emerged as by far the main problems for all residents, though issues related to the whole settlement, such as inadequate water and sanitation infrastructure and the lack of solid waste collection, are also hugely important. Through settlement and neighbourhood meetings and exchange visits between residents of Old Fadama and Mathare, a set of priorities emerged. These build on the federations' experience of community-led projects to improve shelter options in partnership with local governments. The priorities include seeking a closer relationship with street food vendors to improve food and accessibility by focusing on the space in which they operate and, in the process, influencing infrastructure development within settlements. As a result, vendors have been involved in solid waste management initiatives, such as locating bins close to the main concentrations of food stalls and generally cleaning the spaces where food is prepared and sold, as well as the footpaths leading to these spaces. Vendors have also been given basic education on safe food storage and cooking methods and undergo regular health checks.

A specific group at risk of malnutrition is the children of single mothers, often migrants with limited support networks from relatives, who need to work long hours to support themselves and their children. Daycare centres provide a safe space for children who are otherwise often left alone in the

home, exposed to risks such as the frequent fires that affect informal settlements, as well as to sanitation and waste-related environmental hazards. Providing cooked food in the daycare centres is therefore an essential element of support to the most vulnerable groups in the settlements. All these initiatives rely on wide-based alliances that include community-based groups (such as the Old Fadama Development Association, the local federations and their support NGOs, People's Dialogue in Accra and Muungano Support Trust in Nairobi) and that aim to engage with local governments and formal waste management companies.

3. If so, how have these actions influenced consumers' choices towards street food?

Given the priority for population dietary change there is a need for a greater understanding of the determinants that affect food choice. There are many influences on food choice which provide a whole set of means to intervene into and improve people's food choices. There are also a number of barriers to dietary and lifestyle change, which vary depending on life stages and the individual or group of people in question. It is a major challenge both to health professionals and to the public themselves to effect dietary change. Different strategies are required to trigger a change in behavior in groups with different priorities. Campaigns that incorporate tailored advice that include practical solutions as well as environmental change are likely to succeed in facilitating dietary change.

While there are positive factors in favour of street foods, negative aspects and serious concerns have been raised regarding their safety and quality, and associated food borne diseases. The problems are found with the quality of raw materials, and the handling of food, water and utensils. Furthermore, street foods are often produced by those who have never been trained in food hygiene or sanitation, and have limited knowledge of proper food safety practices. Therefore, appropriate actions should be taken by local authorities to ensure the quality and safety of street foods. It should be done in following three ways:

- *First*, the conditions under which foods are prepared and sold should be improved, which involves proper governance, city planning and infrastructure development, including provision of adequate space and facilities such as water, garbage disposal services, and toilets.
- *Secondly*, and most importantly, appropriate laws and regulations, food control systems and institutional setting such as hygienic and quality; inspection services and laboratories are necessary.
- *Lastly*, relevant training and awareness should be provided to street food vendors regarding causes and consequences of food borne diseases associated with street foods and good hygienic practices to be maintained. It is also important to raise awareness on various aspects of safety of street foods among stakeholders and the general public, including consumers.

Local authorities, *in consultation with urban farmers*, can work in the following areas:

- capacity building of the local authorities in food quality and safety control;
- research on the street food sector, in terms of socio-economic impact, legislative framework, hygienic and nutritional improvement;
- education and training to improve vendors' knowledge about sanitation and food hygiene, and nutritional value of foods;
- information sharing and networking among local and national authorities to disseminate good practices and promote a common strategy; and
- awareness raising among consumers about nutrition and hygiene aspects of street foods.

4. Have similar initiatives been prompted directly by street food vendors associations? How?

In America today, millions of people leave their homes in a protracted and often futile search for healthy food for their families. Many walk out their front doors and see nothing but fast-food outlets and convenience stores selling high-fat, high-sugar processed foods; others see no food vendors of any kind. Without affordable fresh food options, especially fruit and vegetables, adults and children face fundamental challenges to making the healthy food choices that are essential for

nutritious, balanced diets. And without grocery stores and other viable fruit and vegetable merchants, neighborhoods lack a critical ingredient of vibrant, livable communities: quality food retailers that:

a) create jobs,
b) stimulate foot traffic, and
c) bolster local commerce.

Local environments profoundly influence the choices individuals make about eating and exercise. Scientists and health professionals agree that poor diet, along with a lack of physical activity, is a key contributor to obesity. Foundations, advocates, practitioners, and policy-makers are addressing the obesity crisis on multiple fronts. Potential solutions include efforts to:

- *expand* access to grocery stores and other healthy food retailers;
- *improve* school food environments;
- *restrict* the availability of convenience stores and fast-food outlets;
- *expand* park space and other opportunities for physical activity;
- *maintain* and strengthen government food programs; and
- *develop* education programs to influence individual choices about eating, exercise, and screen time (TV and computer).

The goal of improving fresh food access in underserved areas must be viewed in the context of a broad-based movement to build healthy communities. Limited access to fresh foods primarily affects inner-city communities, rural areas, and some older suburbs and is felt most acutely in low-income communities and communities of color. A 2009 study found that 23.5 million people in low-income communities have no supermarket or large grocery store within a mile of their homes. In California, lower-in-come communities have 20 percent fewer healthy food sources than higher-income ones. In Albany, New York, 80 percent of nonwhite residents live in neighborhoods where one cannot find low-fat milk or high-fiber bread, a staple in any middle-class community.

While advocates have worked on improving food access for decades, the obesity epidemic has helped propel the issue to the forefront of policy discussions. Obesity rates have nearly doubled among adults and more than tripled among children in the past 30 years. In 1991, no state had an adult obesity rate above 20 percent—indeed, the number was unthinkable. Today, 49 states and the District of Columbia have exceeded that rate—significantly, in most cases. And in 30 states, 30 percent or more children are overweight or obese. Like the inability to obtain fresh foods, obesity and related health problems such as type 2 diabetes and heart disease disproportionately affect low-income people and people of color. African American and Mexican American children are nearly twice as likely as white children to be obese. Children from poor families are twice as likely to be overweight as those from higher-income families.

Ten-year-old Latino girls have a lifetime diabetes risk of 53 percent and African American girls have a 49 percent risk, while white girls have a lifetime risk of 31 percent. The racial risk profile is similar among boys. The costs associated with preventable, diet-related chronic diseases continue to climb. Chronic diseases account for about 75 percent of the nation's $2 trillion annual medical care expenditures, and the personal toll is incalculable. Researchers estimate that for the first time in American history, today's generation of children will live shorter lives than their parents, due to the health consequences of obesity and being overweight.

When personal choices are constrained, weights increase and health suffers. For example, a study of nearly 40,000 Californians found that people living in neighborhoods with few supermarkets or produce outlets, but crowded with fast-food and convenience stores, are at significantly higher risk of obesity and diabetes. Studies consistently show that low-in-come neighborhoods have a higher concentration of fast-food restaurants and convenience stores than more affluent neighborhoods.

Research also shows that better access to healthy foods changes eating habits and that these new habits lead to reductions in obesity.

Local advocacy and organizing campaigns have led the way in crafting policies and programs to bring healthy food retailers to long-neglected communities. These initiatives demonstrate that inequitable food access is a solvable problem and that all communities can benefit from the opportunity to make healthy food choices easy. Moreover, better food access can solve more than health problems. It also can benefit the economy, regional farm systems, community developers and investors, and local government, as well as improve employment opportunities. But building momentum for change has been slow and often has required significant philanthropic investment and massive community mobilization. And change has only taken hold in scattered places, still not reaching many communities in need. Yet the most promising grassroots initiatives are beginning to inform state and local policy as government, civic leaders, and the business community recognizes that a healthy food environment is essential to health and community economic vitality. A national policy response, based on innovations that have been shown to work and built on a foundation of social and economic equity, is urgently needed to ensure that everyone, regardless of where they live, can make healthy choices and ultimately has the opportunity to lead healthy and productive lives.

5. I believe that creating a system of incentives (e.g permits to sell in areas where there are more potential customers, such as near schools, hospitals, transportation hubs; vouchers or some sort of recognition mechanism for good practices) is required for motivating the street vendors to use locally-sourced, fresh produce. Do you think that such incentives could be successful, and why? What other types of incentives might be, and why?

Street vending and urban space for micro enterprises constitute an important policy theme that needs to be advanced further in development literature and policy. In many countries, space tends to be a highly political issue, involving many interests. Partiality towards modern infrastructure results in a rejection of traditional livelihoods conducted on sidewalks and shop houses. Some large retail stores, begrudging competition from nearby informal traders, may lobby for the latter's suppression. Where street vendors are allowed to ply their trade (whether legitimately or not), they do so under inhospitable conditions, with no basic facilities, and under constant fear of harassment and damage to their goods.

A cursory view of cities with brisk street vending activities shows that this economic activity is a veritable sponge that can absorb large numbers of surplus labour, especially women. Their market base consists of a mass of consumers who welcome their accessibility and inexpensive goods and services. To be sure, some studies have shown that when urban management policies allow vendors to conduct their trade, positive impact results on several fronts:

- *poverty,*
- *employment,*
- *entrepreneurship,*
- *social mobility, and*
- *peace and order.*

Economic and social resources are democratized, including between women and men. With its tradition of street, vending kept alive for decades. In the early Bangkok period, street food vending took place both in the canal and on land. Vendors sold their food from *"fixed locations"* in the *"floating markets"*. Itinerant vendors sold from house to house. Vending on the street became more popular after the construction of roads that started during the reign of King Rama IV (1851-1868). There were also many Chinese vendors in the city.

The 1990s global economic boom and the economic stabilization of many Latin American countries was the perfect springboard for modernizing the region's retail sector. During this period,

multinational consumer-goods companies and local supermarket chains invested aggressively in retail. This investment, combined with rising per capita incomes and a general improvement in the quality of consumer goods, helped fuel the expansion of large chain supermarkets through the mid-1990s. Today, depending on the country, approximately 45 to 60 % of the retail sales of such packaged goods as food, beverages, personal care items, and cleaning products are concentrated in supermarkets.

Many believed small retail players in Latin America would be swept away by the sector's consolidation and the rapid entry of new hypermarkets and supermarkets, as was the case in the U.S. and Europe, where small retailers have retained only 10 to 20 percent of the consumer packaged-goods market as large retailers have grown. So far, this has not occurred in Latin America. Small-scale independent supermarkets and traditional stores together still account for between 45 and 61 percent of consumer-goods retailing in Latin American countries.

Despite the growth of modern supermarkets, five basic service models remain common to all Latin American countries:

- *Traditional stores tend to be small (about 25 to 50 square meters) and offer mostly counter service.*
- *Small supermarkets are self-service businesses, usually with no more than four checkout lanes. Stores range from small outlets staffed by a sole proprietor and with only one cash register, to bustling independent supermarkets that stock a wide variety of products and have as many as five or six checkout lanes.*
- *Street vendors and open-air markets don't have a permanent location; many are mounted on carts that serve as easily moved stalls. Some vendors set up shop in the same location every day. Others operate in multiple locations that vary by the day of the week.*
- *Category specialists, such as butchers, bakers, and greengrocers, offer a limited selection of fresh foods. These stores usually have counter service. (There are some exceptions, such as Brazil's self-service fruit and vegetable stores.)*
- *Convenience outlets use kiosks that are less than 10 square meters in size. These outlets sell "fast-moving" goods, primarily candy, gum, tobacco, and general merchandise, such as pens, notebooks, and newspapers.*

Even though Latin America's emerging consumers have not yet migrated in large numbers from these traditional outlets to modern supermarkets, competition is now compelling larger retailers to try to win more customers from the emerging segment. Competition in the consumer-goods retailing and manufacturing sector is also heating up as global multinationals and Latin America's *'multilatinas'* (large companies headquartered in Latin America and serving markets throughout the region) contest one another for market share. As the battle between modernity and tradition heightens, multinationals and multilatinas alike must peel away six fictions that prevail in the six Latin American countries we studied.

6. What new mechanisms can be put in place to raise peoples' awareness on the consequences of their street eating habits? Do you know any advertising methods which have been proven effective?

Street foods are very well patronized in many developing countries since they are affordable, easily accessible and also serve as an important source of income. However, these street foods largely do not meet proper hygienic standards and can therefore lead to morbidity and mortality due to food borne illnesses, and concomitant effects on trade and development. Food-borne illnesses are a growing public health concern worldwide and results from food contaminated by pathogenic microorganisms, mycotoxins or chemical hazards. This concern is heightened by the fact that, worldwide, there seems to be a change in life-style and food consumption patterns as frequency of *"eating out"* is increasing and commitment to food preparation at home is decreasing.

However, the hygienic aspects of street food vending are a major concern for food control officers. Vending stands are often crude structures, and running water, washing facilities and toilettes may not be available. Improved safety of street foods can be achieved through awareness raising programs involving several partners such as local authorities, the food vendors, government departments, consumer organizations, standard setting bodies, and some nongovernmental organizations. In some instances, the vendors are keen to participate in programs that provide basic facilities that make it possible for them to work in clean environments. For example, in a survey of street food vendors in Lusaka and Harare, the vendors indicated that they would be willing to pay for basic facilities such as running water and electricity but would want the local authorities to provide the water points, refuse receptacles, and washing facilities. A viable partnership involving local authorities, vendors and policy makers is therefore encouraged as this should lead to the improvement of business conditions and allow for the improvement of the livelihoods of vendors and their families.

The quality and safety of street foods is determined by numerous factors such as the business organization, regulatory aspects, technical aspects related to the preparation, preservation and display of food sold in the streets, the consumer perspective, and educational programs. In order to improve the conditions of street food vendors and to make sure that the food sold does not jeopardize public health, the first and foremost necessity is to build awareness that food vendor should maintain certain quality standard. In many areas, street foods are sold and food safety issues are not taken into consideration neither on the producer nor on the consumer side. Consumers tend to look mostly at the price and might be already accustomed to the taste of unhealthy meals. Vendors, on the other hand, have a very small margin of profit and are incentivized to keep expenses low by utilizing low quality ingredients and disregarding costly hygienic practices.

Box – 1: *Personal Hygiene and Food Safety*

Due to a heightened public awareness as a result of all types of media coverage concerning food borne illnesses, the level of training for employees working in the food industry in general needs to be increased. This is a responsibility that the food industry has to their clients and the general public. Employers have a responsibility to provide a well-designed, informational training program for employees to follow while on the job. It is important that this training be communicated in language that all employees understand. Practices and procedures must be translated for all employees, no matter what language they speak. Proper hygiene practices should be communicated prior to employment and reaffirmed with periodic training programs. Signs with pictures of good practices are an excellent method to reinforce training. These should be displayed in areas where applicable and be multilingual. Training should be documented and list the employees that have completed it. Workers can carry pathogens internally and on their hands, skin and hair. It is imperative that they follow and understand basic food protection practices and maintain a high degree of personal cleanliness and good sanitation practices to prevent food product contamination. Unless employees understand and follow basic food protection principles, they may unintentionally contaminate food packaging, water and other workers, thereby creating the opportunity to transmit food borne illness. Employee health and hygiene falls into two categories, cleanliness and disease control.

To break this vicious cycle, governments need to embrace street food vendors as a dynamic economic sector. With their adaptability to the frenetic life in the global cities, street food vendors have a huge potential to quickly fill niches, greatly improving urban access to food. While excessive regulation of the sector carries the risk of suffocating this adaptability and would just shift the problem to a new informal sector consisting of those dodging the regulation, certain minimum standards, especially related to food quality, need to be enforced. Vendors should be given some

basic training on how to safely prepare and store food and businesses should be certified accordingly. Management in the street food sector should serve as role models for good work habits and acceptable hygienic practices.

The number of reported outbreaks of food-borne illnesses has been high, both in developed as well as developing countries. *However*, the problem is exacerbated in developing countries due to economic reasons, poverty, the lack of adequate health care facilities, and the dearth of data regarding food-borne diseases. This greatly compromises the achievement of the Millennium Development Goals (particularly MDG 1, 4, 5 and 6). The safety of street or vended foods is therefore one of the most pressing health and safety issues facing most developing countries since it leads to both public health and social consequences.

Box – 2: *Precautions in Personal Hygiene and Food Safety*

Personal hygiene begins at home, with the essential elements for good hygiene being a clean body, clean hair and clean clothing. Hair in food can be a source of both microbiological and physical contamination. Hairnets and beard covers should be worn to assure food product integrity. Long-sleeved smocks should be worn to cover arm hair. Clean uniforms, aprons and other outer garments that are put on after the employee gets to work can help minimize contamination. While working, clothing should be kept reasonably clean and in good repair. Removal of smocks, lab coats or aprons should take place when leaving the work area to go to the employee break room, restroom or exiting the building. Personal items such as meals and snacks should be stored in a locker or break room area that is located away from processing areas or areas where equipment and utensils are washed.

The only jewelry allowed in a food plant is a plain wedding band and/or one small post earring in each ear. No other jewelry is to be worn because it may fall into the product, it can present a safety hazard and it cannot be adequately sanitized against bacterial transmission. It should be removed prior to entering the processing facility. Employees must wear different colored smocks when going from a raw processing part of the establishment to the cooked processing side. They should also step into a sanitizer footbath between the two processing areas to eliminate the bacteria on their shoes.

No employee who is affected with, has been exposed to, or is a carrier of a communicable disease, the flu or a respiratory problem, or any other potential source of microbiological contamination shall work in any area where there is a reasonable possibility that food or food ingredients can be contaminated. The number one symptom of a food borne illness is diarrhea. Other symptoms include fever, dizziness, vomiting, and sore throat with fever or jaundice. Any employee with these symptoms should not be allowed to work around food.

A company policy should be established requiring that employees report any active case of illness to supervisors before beginning work. If an employee has been diagnosed with a food borne illness, exclude them from the establishment, and contact the local health department.

Staphylococcus aureus is caused by food products touched by employee hands or being sneezed upon. Thirty to 50 percent of adults carry this in their nose and 20 to 35 percent carry this in their skin. All employees must avoid uncontrolled, uncovered coughing or sneezing.

The best way to prevent the spread of viruses to food is to ensure that hands are washed and that they are clean and protected when handling food. Anytime a human hand touches something, there is a risk of contamination with harmful microorganisms or chemicals.

Employees must wash and sanitize their hands thoroughly in a hand-washing facility before starting work, especially if the employee has direct contact with food. The hands should also be washed after each absence from the work area, after visiting the restrooms, after eating, drinking, smoking, chewing gum, chewing tobacco, coughing, using a handkerchief or tissue and any other times when hands have become soiled or contaminated.

Consumption of food, drink, smoking or tobacco use is permitted only in authorized areas. All of these actions would generate saliva, which could contaminate the food. Additionally, employees should never spit in the building. Lunches should be stored in designated areas and refrigerators emptied weekly. No food should be permitted in employee lockers or at work areas and no objects such as toothpicks, matchsticks or similar objects are allowed in the mouth while on the job.

The hand-washing facility should have liquid soap, cold and hot water that is 100° F and able to run for at least 20 seconds at that temperature. The employee must scrub the surface of their hands and arms vigorously for 10 to 15 seconds. The friction itself can remove many microorganisms. They should scrub the areas between the fingers and under the nails and then rinse the hands thoroughly. Hands should be dried with paper towels or warm air dryers. Adequate waste containers should be supplied for used towels.

Hands and fingernails must be kept clean. Fingernails should be short and absent of fingernail polish or false fingernails. Cuts or burns on the food worker's hands should be thoroughly bandaged, and covered with clean gloves. The use of gloves often creates a false sense of security but does not eliminate the need for hand washing and when necessary, sanitizing. Improperly used gloves may become a vehicle for spreading pathogens. Non-disposable gloves should be washed and sanitized before starting work and as needed. Disposable gloves should be changed whenever contamination is a possibility, such as taking out the trash, handling cleaning chemicals, handling any animals, or picking up dropped items. Under no circumstances should alive or dead rodent be touched. Hands must be washed before putting on this new pair of disposable or non-disposable gloves.

Hand or glove dips may also be used, but only after hand washing. Sanitizers are designed for this purpose and should be monitored frequently to ensure proper concentration is maintained. These dips are not a substitute for proper hand washing. Management should serve as role models for good work habits and acceptable hygienic practices. They should continually emphasize how important it is. Policies should reassure the employees that they will not lose their jobs if they report an illness or a communicable disease. Once employees understand what is expected of them, effective supervision of employee practices should be used to ensure that employees follow proper procedures. Training should be conducted annually and reviewed whenever incorrect practices are observed.

Food contamination in developing countries is caused by many factors including traditional food processing methods, inappropriate holding temperatures, and poor personal hygiene of food handlers. Further, the prevalence of food-borne illnesses in developing countries is intertwined

with other economic and developmental issues, namely, legislation, infrastructure and enforcement mechanisms. Specific examples include inadequacy of food safety laws, laxity in regulatory enforcements, and the lack of education for food handlers. The incidence of food- and water-borne diseases is estimated at 3.3 to 4.1 episodes per child per year in Africa and food and water-borne diarrhoeal diseases are estimated to cause between 450,000–700,000 deaths in Africa annually, with many more sporadic cases going unrecorded. In most of these cases, pathogens such as *Escherichia coli*, *Bacillus cereus*, *Salmonella*, Hepatitis, *Shigella*, *Brucella*, *Staphylococcus aureus*, *Campylobacter*, rotavirus and enteric bacteria are identified.

Interventions and programs can only be successful if they do not focus on one aspect alone. Tackling only food quality, for instance, cannot ensure that street food vendors play the most positive role in realizing food security of the urban population. It is important not to forget that the street foods constitute a very heterogeneous sector and the interventions need to be carefully planned by keeping different aspects such as gender, secondary audience, and local customs into consideration. It is also necessary to differentiate between vendors selling freshly prepared food on the spot or hawking dishes prepared earlier at home, with the second practice being much more risky in terms of food borne pathogen and spores. Needless to say, general education levels also play an important role in ensuring safe street foods. The more both vendors and patrons will be educated and the more they will know about issues such as nutrition and food safety, the more they will be interested in having the business as clean and the products as healthy as possible. In terms of *"mechanisms that can be put in place to raise peoples' awareness on the consequences of their street eating habits"*, following initiatives can be suggested:

- The government should make economic self-reliance its goal and realign its attitudes towards street food vending accordingly. At the same time, it should recognize the diversity among food vendors and thus, should not apply a single policy for different groups of vendors.
- The authorities should focus more on monitoring food hygiene rather than pushing the food vendors out of the streets.
- Vendors should have thorough knowledge about food and exercise creativity in concocting new dishes. Such knowledge will not only publicize food; but also increase earning opportunities of street food vendors.

Food legislation and regulatory control of street foods varies from country to country. A recent review of the situation in Asia found great diversity among the legal instruments developed to control the street food trade. Some countries had no specific legislation or control systems at all. In those countries where street food activities were regulated by law, the regulations or by-laws affecting the street food trade were part of a larger body of legislation dealing with food, health, or environmental sanitation. Licensing or registration systems, inspection systems, and codes of practice are other forms of regulation that are in effect in some countries.

A number of pieces of legislation relating to the preparation and sale of safe street foods have been established by the Bangladesh government. The Bangladesh Pure Food Ordinance 1959 (revised 2005) has several sections dealing with the safety of street food: adulteration of food; prohibition of calcium carbide, formalin, and insecticide; selling unwholesome food; uncovered foods; and unhygienic premises and violations of the health code. The other relevant legal measures related to safe street foods are the Bangladesh Standards and Testing Institution (BSTI) Ordinance 37 of 1985; the Consumers Rights Preservation act 2009; and the Penal Code of 1860, sections 272–276.

A mobile court to monitor street food vendors was introduced in the city of Dhaka in 2011 and popularized through the media. A number of civil society organizations have emerged in recent years in Bangladesh to promote safe street foods and overall food safety. For example, the Consumers Association of Bangladesh (CAB), VOCTA (consumer), which has conducted street food surveys and organized awareness, campaigns through rallies, seminars, workshops, and policy

advocacy. The electronic and print media are also involved in providing public awareness of safe street foods.

In contrast, key constraints to the effective management of street foods are the lack of awareness of personal hygiene and safe food among street food vendors and consumers; insufficient awareness among the consumers about the Consumer Rights Act; lack of clarity in existing legislation and standards on street food; no specific regulatory body for licensing, provision of ID card, medical fitness, or dress codes concerning street food vendors; no demarcation of specific areas by local municipalities for street food vendors; insufficient number of sanitary inspectors; the inability of sanitary inspectors to take penal actions against street food vendors; and absence of appropriate training and supervision of street food vendors.

In terms of *"advertising methods"*, several initiatives have been taken across the regions of the globe. One such project is: *"Campaign to Increase Food Safety Awareness among Consumers in Belize"*. Its brief description is presented below:

During the period May to July 2002, an extensive survey on food safety awareness among Belizean consumers was conducted with support from the Caribbean Food and Nutrition Institute, (CFNI) and the Chemistry Department, University of the West Indies in collaboration with Ministry of Health partners and with funding by the Organization of American States Inter-American Agency for Co-operation and Development (OAS/IACD). The objective of the survey was to provide information on the current food safety knowledge, attitudes and practices of household consumers in Belize and was part of a wider survey conducted in Barbados, Jamaica and St. Vincent and the Grenadines. The results of the survey would then be used to further develop comprehensive and effective food safety public education programs. In the Belize survey the greatest problem identified were those associated with the misconceptions or lack of knowledge for the requirements for refrigeration of leftover meat, fish or poultry. Some of the problems identified in relation to environmental health included domestic animals entering the kitchens, pests and rodents in households and uncovered garbage bins. Most respondents selected street food vendors, followed by restaurants and canteens as the top-ranked locations where food safety problems were most likely to occur and over three-quarters of respondents were unaware that certain population groups e.g. the elderly, the young and the immuno-compromised are especially vulnerable to food-borne illness. The public's main source of information on food safety was discovered to be friends and family but other sources included news programs on television and radio followed by educational institutions. Food labels were ranked as the sixth most important source. Overall responsibility for food safety was perceived to lie chiefly with the consumer, but it was felt that the responsibility of setting and regulating standards rested with the Ministry of Health. The findings of the Belizean survey were used as the basis for the development of a food safety campaign *"Safe Food Handling Awareness Campaign 2005"*, conducted during the period February/June 2005 by the Belize Agricultural Health Authority [in collaboration with the Ministry of Health and with funding provided by the Caribbean Food and Nutrition Institute (CFNI)]. The purpose of the food safety campaign was to correct wrong perceptions and promote better practices, especially among housewives and school children - who, together, do most of the food handling in the Belizean home. The Food Safety Awareness Campaign, 2005 also sought to promote better food handling practices through a coordinated campaign of school visits, community forums, public service announcements on radio and TV, talk show discussions, the distribution of educational materials, posters, brochures and refrigerator magnets that Belizeans were encouraged to carry into their homes and schools.

The campaign included a nationwide essay competition for upper division primary students with *"Safe Food Handling: How I can make a difference"* as the topic for a 500 word essay to be judged by a panel of food safety regulatory personnel and school educators. A monetary prize of $500 (BZD) was offered to the winning student and food items from local producers to be given to the school

feeding program of the school that produced the wining student. The announcement of the winner of the essay was revealed during the official activities of the World Food Day 14 October 2005.

A team of BAHA food safety personnel and Ministry of Health Public Health Officers along with Fer de Lance productions, hired as the media consultants that the team chose to develop the printed and video media after the concepts were formulated by team, were the executers of the campaign. The results and feedback obtained by BAHA and the Ministry of Health on the effectiveness of the campaign has been very positive. Members of the team were able to give interviews and discuss food safety practices on the major talk show programs of 4 of the 5 Radio and TV media houses in Belize City, which has the widest population coverage and with the stations expressing interest in the team members returning to give updates and to discuss other food safety issues in Belize. Many of the talk shows were call-in programs which gave the general public opportunities to ask specific questions about food safety and what issues they saw as needing attention in Belize.

A *"inspected and passed"* label for retail meats was introduced during a food safety fair held in the parking lot of one of Belize's major supermarkets and surveys were conducted both at the fair and at the annual National Agriculture and Trade Show held 29 April – 1 May 2005 in Belmopan with the aim of evaluating the publics' response to this initiative. More than 200 respondents gave their views on the *"Inspected and Passed"* label. The analysis of the results of the survey showed that most (80%) of the consumers interviewed were aware of the media campaign as they had heard of the BAHA label which was only announced over the media during the time the food safety awareness campaign was being conducted.

The majority of consumers (73%) stated that the *"Inspected and Passed"* label made them think about safety in how the food is prepared, and was willing to pay a bit more(68%) for the product with the label vs the same product without the label, as they felt that the label gave an indication of the safety of the product. This is a crucial finding as many producers and processors often complain that institution of food safety programs is costly, and consumers were not willing to pay for it. The survey showed that consumers were willing to pay a bit more for a product if it meant that it was produced under a safer environment. The School education component was presented to primary schools throughout Belize (18 schools in 3 districts – Belize, Orange Walk and Cayo). The targeted audiences in these schools were those students in the last two years at the primary level (Standard 4-6). Brochures, posters and refrigerator magnets with the food safety message to remember to wash hands when handling food were distributed to the students. Two professional videos that promoted food safety in the home were developed by the Campaign. These multimedia productions were aired at all the TV stations during the months of April/May 2005 and was very well received. Footage from the videos was used by the Belize Chamber of Commerce for the Chambers' national and international promotional campaign extolling the virtues of the quality of Belizean food and to showcase the benefits of investing in Belize. A very popular promotional material developed and promoted during the campaign was the refrigerator magnets with the food safety message reminding food handlers to wash their hands. These were widely distributed in Belize.

The Food Safety Awareness Campaign of 2005 which has been a collaborative effort between the Belize Agricultural Health Authority, (BAHA), the Ministry of Health and PAHO/CFNI has allowed regulatory agencies responsible for food safety in Belize, to address the food safety issues identified in the food safety awareness survey of 2002 by delivering key safe food handling messages to consumers through multiple media sources, some of which would otherwise be very difficult to achieve given the financial resource constraints faced by these regulatory agencies.

The consensus about the campaign is that it has been successful, with very positive responses from the public. The challenge now is developing the sustainable mechanisms that will make food safety education programs an ongoing activity and a key component in the delivery of effective food control systems. The Food Safety Services of the Belize Agricultural Health Authority would like to

acknowledge the contribution of the following persons and organizations that assisted in the organization and conduction of this Campaign.

Followings are basic steps to be taken in the process of advertising:

- Step - 1: *Leverage the Web:* Most homes and businesses in the U.S. are online, and mobile phones commonly have Internet access. Promote awareness of your brand by developing a website. Hire a search engine optimization company or learn the process on your own to ensure that your website appears high in Web search results. Contact website owners in related industries to see if you can place ads on their websites.

- Step - 2: *Create a social media presence:* Social media sites such as Facebook and Twitter can be vital tools in developing brand awareness because they serve as forums where consumers discuss their lives, including their purchases and items they like. When a customer likes your product and tells people about it, she's doing free work to increase your brand awareness for you. The easier you can make it for people to provide a link to your company so others may follow, the more people will become aware of your brand.

- Step - 3: *Advertise using traditional methods:* While the use of print media may be declining in the face of electronic communications, many consumers still read newspapers and magazines. You may be able to use the declining significance of print publications to your advantage by negotiating a lower advertising rate. Create attention-grabbing advertisements that prominently display your product and explain its value. Contact local or even national publications and work with their advertising departments to insert your ads in the most prominent way possible. Select publications that appeal to your target customers. For example, if your product helps investors manage their stock portfolios, select financial publications. Ask your local newspaper if it will run free or discounted ads for local businesses or if it offers any promotional opportunities to encourage consumers to buy locally.

- Step - 4: *Sponsor public events:* If you host or contribute to a charity event, such as a golf tournament, you can prominently display the name of your company or product to consumers with disposable income. In addition to the benefit of having your name or logo in front of these potential customers, your company and products may be seen in a favorable light for contributing to charity. Contact local charities you support to gauge their level of interest in your sponsorship. Suggest events such as milestone celebrations for long-running institutions or weekend family events that would generate buzz and publicity both for the organization and your product. Consider networking with business leaders, local politicians and media sources to broaden the reach of your product.

- Step - 5: *Display your product prominently in stores:* There is no more fundamental way to increase the awareness of a brand than to place it in potential customers' line of sight. Sell your product at locations where people congregate, such as a check-out line. The longer a customer sees your product, the more likely she'll remember it. On a store shelf, place your product at eye level, making it easy for customers to notice. Note some of the product's notable qualities on the product packaging in a bold and attractive design, so that it draws the attention of even those who aren't planning to buy it.

References:

1. Arden-Clarke, C. and Hodges, R. (1988). The Environmental effect of conventional and organic/biological farming systems. Biological Agriculture and Horticulture, 5, 3, 223-287.
2. Baber, L. M. and Frongillo, E. A. (2003) Family and seller interactions in farmers' markets in upstate New York [Electronic version]. American Journal of Alternative Agriculture, 18, 2, 87–94.

3. Benbrook, C. (2005). Elevating Antioxidant Levels in Food through Organic Farming and Food Processing -An Organic Center State of Science Review. The Organic Centre for Education & Promotion
4. Burros, M. (2006, January 4). In Oregon, Thinking Local. from The New York Times
5. Colihan, M. and Chorney, R. (2004). Sharing the Harvest. Brighton, Ontario: EpicPress.
6. Connell, D., Taggart, T., Hillman, K., and Humphrey, A. (2006). Economic and Community Impacts of Farmers' Markets in British Columbia- Provincial Report. British Columbia Association of Farmer's Markets and University of Northern British Columbia. Prince George: British Columbia.
7. Feagan, R., Morris, D., and Krug, K. (2004). Niagara Region Farmers' Markets: local food systems and sustainability considerations. Local Environment, 9, 3, 235-254.
8. Geggie, L. (2006). Putting Food and Food Policy on the Table- Draft Findings. (Unpublished Report). Victoria, British Columbia: Lifecycles Project Society.
9. Geggie, L. and Fuge, L. (2006). Opportunities for the Development of "Pocket" Neighborhood Farmers Markets in Greater Victoria -Draft Discussion Paper. Victoria, British Columbia: Lifecycles Project Society.
10. Government of British Columbia. (2001). Profile of Diversity in BC Communities 2001. Retrieved on December 22, 2006 from the Government of British Columbia Website: http://www.bcmulticulturalprofiles.gov.bc.ca/ NO LONGER AVAILABLE
11. Halweil, B. (2002). Home Grown- The Case for Local Food in a Global Market. Danvers, MA: Worldwatch Institute.
12. Hassanein, N. (2003). Practicing food democracy: a pragmatic politics of transformation. Agriculture and Human Values, 19, 77–86.
13. Hegrl, G., Karl, T., Allen, M., Bindoff, N., Gillett, N., Karoly, D., Zhang, X., and Zwiers, F. (2006). Climate Change Detection and Attribution: Beyond Mean Temperature Signals. Journal of Climate, 19, 5058-5077.
14. Hill, E. (2007, February 2). Green dreams. VictoriaNEWS, p. B1.
15. Hinrichs, C. (2000). Embeddedness and local food systems: notes on two types of direct agricultural market. Journal of Rural Studies, 16, 295-303.
16. Hinrichs, C., Gillespie, G., and Feenstra, G. (2004). Social Learning and Innovation at Retail Farmers' Markets. Rural Sociology, 69, 1, 31-58.
17. Kloppenburg, J., Hendrickson, J. and Stevenson, G.W. (1996). Coming in to the foodshed. Agriculture and Human Values, 13, 33–42.
18. Lapping, M. (2004). Toward the Recovery of the Local in the Globalizing Food System: the Role of Alternative Agricultural and Food Models in the US. Ethics, Place and Environment, 7, 3, 141-150.
19. MacNair, E. (2002). The Garden City Handbook. Victoria, BC: POLIS Project on Ecological Governance.
20. MacNair, E. (2004). A baseline assessment of food security in British Columbia's Capital Region. Victoria, BC: Capital Region Food & Agriculture Initiatives Roundtable (CR-FAIR).
21. Putnam, R. (2000). Social Capital: What is it?
22. Sommer, R., Wing, M., and Aitkens, S. (1980). Price Savings to Consumers at Farmers' Markets. The Journal of Consumer Affairs, 14, 2, 452-462.
23. Statistics Canada. (2002). 2001 Census Population and Dwelling Counts.
24. The Corporation of the District of Saanich. (2006). Visitors to Saanich.
25. The Corporation of the District of Saanich. (2003). Royal Oak Local Area Plan.
26. Thornton, G. (2003). Greater Victoria Enterprise Partnership Society Greater Victoria Economic Development Opportunities Blueprint: Technical Report.
27. http://crcresearch.org/case-studies/crc-case-studies/farmers-markets-and-local-food-systems, accessed on November 20, 2014.
28. Wilkins, J. and Eames-Sheavly, M. (no date). A Primer on Community Food Systems. Cornell University, Division of Nutritional Sciences.
29. http://abundancenc.org/urban-farming-in-new-york-why-its-crucial-to-sustainability/, accessed on November 20, 2014.

30. http://www.iufn.org/wp-content/uploads/2014/01/IIED-2013-The-role-of-local-government-in-urban-food-security.pdf, accessed on November 20, 2014.
31. http://www.frbsf.org/community-development/files/bell_standish.pdf, accessed on November 20, 2014.
32. http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_bk_pb_128_en.pdf, accessed on November 20, 2014.
33. http://www.fao.org/3/a-af211e.pdf, accessed on November 20, 2014.
34. http://smallbusiness.chron.com/increase-brand-awareness-product-41158.html, accessed on November 20, 2014.

References for Additional Reading:

1. Anderson A, Hetherington M, Adamson A, et al. (2003) The development and evaluation of a novel school based intervention to increase fruit and vegetable intake in children (Five a Day The Bash Street Way), N09003. Report for the FSA, London.
2. Anderson A & Cox D (2000) Five a day - challenges and achievements. Nutrition and Food Science 30(1): 30-4.
3. Anderson AS, Cox DN, McKellar S, Reynolds J, Lean MEJ, Mela DJ (1998) Take Five, a nutrition education intervention to increase fruit and vegetable intakes: impact on attitudes towards dietary change. British Journal of Nutrition 80: 133-140.
4. Ajzen I, Fishbein M (1980) Understanding attitudes and predicting social behaviour. Englewood Cliffs, NJ: Prentice-Hall.
5. Ajzen I (1988) Attitudes, Personality and Behaviour. Milton Keynes: Open University Press.
6. Baranowski T, Baranowski J, Cullen KW et al. (2003) Squire's Quest! Dietary outcome evaluation of a multimedia game. American Journal of Preventive Medicine 24: 52-61.
7. Becker, M.H. (1974). The health belief model and sick role behavior. Health Education Monographs 2, 409-419.
8. Berkman LF (1995). The role of social relations in health promotion. Psychosom Med. 57(3):245-54.
9. Clarke JE (1998) Taste and flavour: their importance in food choice and acceptance. Proceedings of the Nutrition Society 57: 639-643.
10. Cotugna N, Subar AF, Heimendinger J, Kahle L (1992). Nutrition and cancer prevention knowledge, beliefs, attitudes, and practices: the 1987 National Health Interview Survey. J Am Diet Assoc. 92(8):963-8.
11. Cox DN, Anderson AS, Reynolds J et al. (1998a) Take Five, a nutrition education intervention to increase fruit and vegetable intakes: impact on consumer choice and nutrient intakes. British Journal of Nutrition 80: 123-31.
12. Cox DN, Anderson AS, Lean MEJ, Mela DJ (1998b) UK consumer attitudes, beliefs and barriers to increasing fruit and vegetable consumption. Public Health Nutrition 1: 61-8.
13. Cox RH, Gonzales-Vigilar CRV, Novascone MA et al. (1996) Impact of a cancer intervention on diet-related cardiovascular disease risks of white and African-American EFNEP clients. Journal of Nutrition Education 28: 209-18.
14. De Irala-Estevez J, Groth M, Johansson L, Oltersdorf U, Prattala R & Martinez-Gonzalez MA (2000) A systematic review of socioeconomic differences in food habits in Europe: consumption of fruit and vegetables. European Journal of Clinical Nutrition 54: 706-714.
15. De Almeida MDV, Graca P, Lappalained R et al (1997). Sources used and trusted by nationally-representative adults in the European Union for information on healthy eating. European Journal of Clinical Nutrition 51: S8-15.
16. Devine CM, Connors MM, Sobal J and Bisogni CA (2003) Sandwiching it in: spillover of work onto food choices and family roles in low- and moderate-income urban households. Social Science and Medicine 56: 617-630.
17. Dewberry C, Ussher JM (1994). Restraint and perception of body weight among British adults. J Soc Psychol. 134(5):609-19.

18. Dibsdall LA, Lambert N, Bobbin RF, Frewer LJ (2003) Low-income consumers' attitudes and behaviour towards access, availability and motivation to eat fruit and vegetables. Public Health Nutrition 6(2):159-68.
19. Donkin AJ, Dowler EA, Stevenson SJ, Turner SA (2000). Mapping access to food in a deprived area: the development of price and availability indices. Public Health Nutr. 3(1):31-8.
20. Drummond S, Crombie N, Kirk T (1996) A critique of the effects of snacking on body weight status. European Journal of Clinical Nutrition 50(12):779-83.
21. Dye L, Blundell JE (1997) Menstrual cycle and appetite control: implications for weight regulation. Human Reproduction 12(6):1142-51.
22. Faugier J, Lancaster J, Pickles D, Dobson K (2001) Barriers to healthy eating in the nursing profession: Part 2. Nurs Stand. 15(37):33-5.
23. Feunekes GIJ, de Graaf C, Meyboom S and van Staveren WA (1998) Food choice and fat intake of adolescents and adults: associations of intakes within social networks. Preventive Medicine 27: 645-656.
24. French SA, Jeffery RW, Story M, et al. (2001) Pricing and promotion effects on low-fat vending snack purchases: the CHIPS Study. American Journal of Public Health 91: 112-7.
25. Gatenby S (1996) Healthy eating: consumer attitudes, beliefs and behaviour. Journal of Human Nutrition and Dietetics 9: 384-385.
26. Gibney MJ (2004). European consumers' attitudes and beliefs about safe and nutritious foods: concepts, barriers and benefits. In Proceedings of the International Food Conference: 'Thinking beyond tomorrow' held in Dublin June '04.
27. Glanz K, Kristal AR, Tilley BC, Hirst K (1998). Psychosocial correlates of healthful diets among male auto workers. Cancer Epidemiology, Biomarkers and Prevention 7: 119-126.
28. Hampl JS, Heaton CL, Taylor CA (2003) Snacking patterns influence energy and nutrient intakes but not body mass index. Journal of Human Nutrition and Dietetics 16(1):3-11
29. Horwath CC (1999) Applying the transtheoretical model to eating behaviour change: challenges and opportunities. Nutrition Research Reviews 12: 281-317.
30. Kearney M, Jearney JM, Dunne A & Gibney MJ (2000) Sociodemographic determinants of perceived influences on food choice in a nationally representative sample of Irish adults. Public Health Nutrition 3(2): 219-226.
31. Kearney M, Gibney MJ, Martinez JA, de Almeida MDV, Friebe D, Zunft HJF, Widhalm K & Kearney JM (1997) Perceived need to alter eating habits among representative samples of adults from all member states of the European Union. European Journal of Clinical Nutrition 51: S30-5.
32. Kristal AR, Glanz K, Curry SJ, Patterson RE (1999) How can stages of change be best used in dietary interventions? Journal of American Dietetic Association 99: 679-684.
33. Lappalainen R, Saba A, Moles A, Holm L, Mykkanen H, Gibney MJ (1997). Difficulties in trying to eat healthier: descriptive analysis of perceived barriers for healthy eating. European Journal of Clinical Nutrition 51: S36-40.
34. Lassen A, Vibeke Thorsen A, Trolle E et al. (2004) Successful strategies to increase the consumption of fruits and vegetables: results from the Danish '6 a day' Worksite-Canteen Model Study. Public Health Nutrition 7(2): 263-70.
35. Lowe CF, Horne PJ, Tapper K, Bowdery M, Egerton C (2004) Effects of a peer modelling and rewards-based intervention to increase fruit and vegetable consumption in children. Eur J Clin Nutr 58(3):510-22. (see also http://www.fooddudes.co.uk/)
36. Mac Evilly C & Kelly C. Conference report on 'Mood and Food'. Nutrition Bulletin 26 (no 4), December 2001.
37. Margetts BM, Thompson RL, Speller V & McVey D (1998) Factors which influence 'healthy' eating patterns: results from the 1993 Health Education Authority health and lifestyle survey in England. Public Health Nutrition 1(3): 193-198.
38. Nestle M, Wing R, Birch L, DiSogra L, Drewnowski A, Arbor A, Middleton S, Sigman-Grant M, Sobal J, Winston M, Economos C (1998) Behavioural and social influences on food choice. Nutrition Reviews 56(5): S50-S64.

39. Oliver G, Wardle J (1999) Perceived effects of stress on food choice. Physiol Behav 66: 511-515.
40. Paisley L, Lloyd HM, Sparks P & Mela DJ (1995) Consumer perceptions of dietary changes for reducing fat intake. Nutrition Research 15: 1755-1766.
41. Patterson RE, Kristal AR, Glanz K et al. (1997) Components of the working well trial intervention associated with adoption of healthful diets. American Journal of Preventive Medicine 13: 271-6.
42. Prochaska JO, DiClemente CC & Norcross JC (1992) In search of how people change: Applications to addictive behaviours. American Psychology 47: 1102-1114.
43. Rosenstock IM (1966). Why people use health services. Milbank Memorial Fund Quarterly 44, 94-94.
44. Snyder MP, Story M & Trenkner LL (1992) Reducing fat and sodium in school lunch programs: the LUNCHPOWER! Intervention Study. Journal of the American Dietetic Association 92: 1087-91.
45. Sorensen LB, Moller P, Flint A, Martens M, Raben A (2003). Effect of sensory perception of foods on appetite and food intake: a review of studies on humans. Int J Obes Relat Metab Disord. 27:1152-1166.
46. Sorensen G, Hunt MK, Cohen N, Stoddard A, Stein E, Phillips FB, Combe C, Hebert J and Palombo R (1998a) Worksite and family education for dietary change: The Treatwell 5-A-Day program. Health Education Research 13: 577-591.
47. Sorensen G, Stoddard A & Macario E (1998b) Social support and readiness to make dietary changes. Health Education and Behaviour 25: 586-598.
48. Stevens VJ , Glasgow RE, Toobert DJ, et al. (2002) Randomized trial of a brief dietary intervention to decrease consumption of fat and increase consumption of fruits and vegetables. American Journal of Health Promotion 16(3): 129-34.
49. Steiner JE (1977). Facial expressions of the neonate infant indicating the hedonics of food-related chemical stimuli. In: Weiffenbach J. ed. Taste and development: The Genesis of Sweet Preference. (DHEW Publication No. NIH 77-1068). Washington DC: US Government Printing Office, pp 173.
50. Stubbs RJ, van Wyk MC, Johnstone AM & Harbron CG (1996) Breakfasts high in protein, fat or carbohydrate: effect on within-day appetite and energy balance. European Journal of Clinical Nutrition 50: 409-17.
51. Stubenitsky K, Mela DJ (2000) UK consumer perceptions of starchy foods. British Journal of Nutrition 83: 277-285.
52. Wardle J, Steptoe A, Oliver G, Lipsey Z (2000) Stress, dietary restraint and food intake. Journal of Psychosomatic Research 48: 195-202.
53. Worsley A & Crawford D (1985) Awareness and compliance with the Australian dietary guidelines. A descriptive study of Melbourne residents. Nutrition Research 5: 1291-1308.

5. Edward Mutandwa, Mississippi State University, United States of America

Stefano,

Thanks for re-igniting this important issue of street vending. Certainly, street food vending is one of the hallmarks of most developing countries. For the obvious reason that many urban people cannot afford the so-called safe food found in licensed supermarket chains. You have given an interesting context within which this discussion will be carried out: that FAO does support street food vending. I found this point particularly refreshing because many governments are only starting to notice that this kind of activity can provide any meaningful contribution to lives of individuals, families (mostly women) and nations. Now, let me turn my attention to question 1. Pertaining to question one, I do know of scenarios where there are indeed direct linkages between street food vendors and peri-urban farmers in Zimbabwe. However, not all peri-urban agricultural activities are recognized particularly those taking place on council land. Again, all street food vending is illegal. Thus their

relationships are based on social capital and highly informal networks. However, there are an number of projects in Harare (Zimbabwe) that were mooted under the auspices of Natural Resources Institute and other NGOs where vendors received training on various issues ranging from personal hygiene, marketing, food preparation and food storage. Unfortunately, follow up studies indicated that some foods weren't safe. For example microbiological counts showed high amounts of Salmonella in meat or streptococci bacteria on fruits. Institutions and organizations should have an important role to play but it is rare to typically find Street Vendor Associations to lobby and advocate for formalization of this activity. Again, the legal framework still patchy such that you have food health laws not in sync with urban councils Act. Without Urban Street Food Associations, it is going to be difficult to make a case for a policy framework that integrates their activities into mainstream economy. Moreover, they would need financial support which must be sustained in the long run. The private sector, NGOs and civil society in general could be involved here.

Thanks,

Edward

6. Cecilia Mbugua, African Organisation for Standardisation, Kenya

In response to question 1: Currently in Kenya, there is that direct link between the street food vendors and the local urban farmers. But sadly there are no food safety measures in place. They sell food without work permits and that does not guarantee the safety to consumers. Consumers buy the good at their own risk and little is being done.

7. Lisa Kitinoja, The Postharvest Education Foundation, United States of America

Thank you for hosting this discussion on urban/peri-urban ag and street foods. One of the incentives for motivating street sellers to increase the purchase of fresh, locally produced foods is price, and if the growers experience a lot of postharvest losses (due to poor handling on the farm, damage during the harvest and while handling, high temperatures and use of poor quality packages or containers, then the prices will rise to compensate for these losses. Urban and peri-urban producers, therefore, need to be educated on good postharvest practices, food safety and reducing food losses and waste. Simple, low cost handling practices and easy to use improvements in packages and temperature management can keep losses low, and this will help to keep prices competitive.

8. Gisèle Yasmeen, University of British Columbia, Canada

General comment: It's great that FAO is hosting this on-line forum as it has been my experience that the work on streetfoods and, associated literature, tends to be quite separate and needs to be more thoroughly integrated.

1. Are you aware of actual direct links between street food vendors and local urban farmers?

The following answer is based on evidence I am aware of and can vouch for due to my involvement in both streetfoods and urban agriculture research for more than 20 years. Here is my attempt to answer question 1 with answers to the other questions coming over the next week or so.

In my report for the International Development Research Centre (IDRC) entitled "Urban Agriculture in India" available at: http://doccentre.net/Besharp/resources-expertise/Urban_Agriculture_In_India.pdf the case of Dr RT Doshi is described on p. 25 talks about how Dr. Doshi – an internationally recognized leader in urban food production – obtained biomass

from sugar cane vendors for his own food production work (hence, the relationship is the inverse in this case to the assumed one of vendors selling the products of urban agriculture). Since this report was published, a plethora of information on Dr. Doshi's work has become available on the internet, including videos.

On pp. 32-33 there is following quote "The M.S. Swaminathan Research Foundation (MSSRF) estimated that there is a great potential for flower cultivation, especially orchids, in urban and peri-urban parts of India. At a workshop on women and food security, this type of micro enterprise development was identified as a potentially profitable source of income for women (MSSRF 2000, Annexure 2b)." However, there is no reference to supply chains leading to their sale by street vendors.

The document also has reference to wastewater aquaculture in West Bengal, which can be in peri-urban areas and typically supplies the needs of urban dwellers (pp. 29-30). There is also reference to animal husbandry in urban areas as well as cultivation of ornamental plants.

In the technical report I edited for FAO entitled Feeding Asian Cities (available at http://www.cityfarmer.org/FeedingAsianCities.pdf) while there is discussion of both urban agriculture and street vending, there is little on linking the two, though both are associated with poverty alleviation. Having said that, pp. 17-22 are very useful for understanding food supply and distribution to cities, including production in urban and peri-urban areas.

There is a bit more in my book, Bangkok's Foodscape (http://www.amazon.com/Bangkok-Foodscape-Public-Eating-Relations/dp/9744800895). A section beginning on p. 57 talks about supply linkages and the role of market gardens in Rangsit (just outside of Bangkok, which I would classify as peri-urban agriculture), which supplied some of the vendors interviewed. Having said that, the economic boom of the early to mid-nineties resulted in significant amounts of agricultural land on the urban periphery being converted to other uses. Vendors reported buying their fish from wholesale markets in Bangkok which obtained their supply from the eastern seaboard with meat, poultry and particularly eggs (which are less regulated) coming from urban/peri-urban areas.

Conclusion: there needs to be a thorough literature review to elucidate the relationship between streetvending and UPA (with both being clearly defined – particularly the latter which should include commercially oriented market-gardens, etc. I suspect decisions by vendors as to where they obtain their supply are primarily related to pricing, particularly in low-income situations.

9. Hamid Ahmad, Pakistan Society of Food Scientists & Technologists (PSFST), Pakistan

Dear Sir,

No doubt street foods offer multiple choices and benefits for the poor daily wagers or low salary earners yet it appears that any cost addition by way of improving by mainstreaming or for quality / food safety / availability, any official intervention would be at a cost to the health / promotion of street food industry anywhere. What I mean is that in the developing country scenario any official interventions for any kind of controls are likely to impact negatively towards the well- being & the growth of street foods. Because it is such a market domain where rules are drawn only by market forces related to any prevailing socio-economic situation, local tastes, staples, city, region or a country parameters. In this small sector civic, social pressure and table talk on the spot by routine consumers matters and affects much more than drawing any lines for monitoring and evaluation. Nearby availability and cost range are most important in this street industry of developing countries.

In rich countries like USA, however, the street food (in New York), for example, is eaten more for variety , fun, long shopping hauls or picnic but in developing. In the poor countries it is the option due to price and quantity to fill the belly with appetizing local taste. Similarly going by packaging/labeling/cleanliness it is more presentable, safe, nutritious and hygienic in NY where the

cost is almost near to eating food in a average / common restaurant which is not the case in developing countries of Asia or Africa. People in rich countries eat street food more for variety or picnic but in developing poor countries it is option due to price and quantity to fill the belly with local taste.

Keeping this in mind it can certainly be said that the promotion of urban and peri-urban agriculture and horticulture by helpful intervention of local authorities is likely to improve health and strength of street foods. Urban & Peri-urban agriculture is source of fresh and economic ingredients for street foods, Quality in these ingredients means better and nutrition implements for the consumers of these street foods. The good and healthy thing about street foods is that most street foods use plenty of greens , salads , colored vegies all of which are very well known for their nutritious properties. In the modern day busy and hard working life people do not bother about buying these items separately for their home made foods due to cost and non-realisation of their nutritional importance.

So, I am all for the support of urban and periurban agriculture and horticulture: perspectives for a strategic coalition towards food security. Positive interventions in these aspects would improve health and food security of people. However any intervention to improve quality / nutrition in the street food system would may not be of any benefit.

10. Amila Fauziah, University of Padjadjaran, Indonesia

1. Are you aware of actual direct links between street food vendors and local urban farmers?

Honestly, I am not too much aware of this because street food vendors always get the fruits or vegetables from non-urban area or main market. Urban farmers in my country is growing. If the government facilitate street food vendors and local urban farmers it will be good plan and decision. Until this day, in my city for example, this links is promoted by community like Agritektur.

2. Are there examples of concrete measures promoted by local authorities to recognize and increase such kind of link?

In my country, there isn't but it will be.

3. If so, how have these actions influenced consumers' choices towards street food?

The consumer will feel safer to consume more healthy snacks because it is produced locally. In my country, street food produced tends to be less safe and less clean and so many cases of food intoxication. However, the consumer of street food is still a lot and will continue to increase. When this policy is applied, it will give us many benefits, for the seller and the buyer as well. In addition, sellers will sell cheaper because of cheaper transportation costs.

4. Have similar initiatives been prompted directly by street food vendors associations? How?

No, they have not.

5. I believe that creating a system of incentives (e.g permits to sell in areas where there are more potential customers, such as near schools, hospitals, transportation hubs; vouchers or some sort of recognition mechanism for good practices) is required for motivating the street vendors to use locally-sourced, fresh produce. Do you think that such incentives could be successful, and why? What other types of incentives might be, and why?

I think it would be, because the street vendors will be happy (of course!). Government, street vendors, and urban planners have to sit together to discuss this together to synchronized. Government as an incentive giver would have to pick and choose which ones deserve street vendor to be given incentives.

6. What new mechanisms can be put in place to raise peoples' awareness on the consequences of their street eating habits? Do you know any advertising methods which have been proven effective?

Creating a healthy diet campaigns with creative and fun way and promote street vendors and urban farmers. In my country, social media is the most effective media campaign because people here so many who are active in social media.

11. Laura L/ Dawson, MAOM, USA

Here in Wilmington, North Carolina, USA we have a vibrant food community. We have a university which has developed a farm-to-table food system, including online shopping and home delivery, as well as pick up sites.

We also have a growing Mobile Food Unit system, which is currently being regulated and licensed by the local county Public Health Offices. See the attached document used to oversee the safe handling of food when served from a truck, van, trailer or other mobile unit (http://www.fao.org/fsnforum/sites/default/files/resources/EHS108%20Section%203%20Mobile%20Food%20Unit%20Plan%20Review.docx) .

While this is not my field of expertise, I am keenly aware of the need to provide access to safe food even in the most difficult places. Here in the USA where I live, the food trucks are used mostly at worksites, parking at the building to serve lunch or dinner to the workers, who otherwise would have to heat in a kitchen their employer may have provided. It is becoming less common to see a kitchen at a work site. The other option for these workers is to drive home or to a closer restaurant. Both are more expensive due to the cost of the food, or the gas in transportation. It has become more economical to eat food purchased from a food truck. That is why food safety must be established and monitored for these vehicle carrying and preparing food, a new phenomenon.

While it is important for quality food to reach all people, education about the safe and clean methods of handling, storage and preparing need to be included in the process. Especially for the consumer, who is equally responsible to use safe food handling methods when eating away from home or other safe dining facilities.

May you and yours.

Be In Good Health,

Laura L Dawson, MAOM, Dipl.Ac.

12. Lal Manavado, University of Oslo affiliate, Norway

It is interesting to note that a century or so ago, periurban agriculture and street hawking was an important source of vegetables to a comparatively large proportion of London's population. And allotment gardening in the environs of pre-war Berlin enabled many families to grown their own green food.

Connurbation and rapid population increase in most European cities however, seems to have made perurban agriculture a difficult proposition. However, there are still many large European cities, where it is feasible, and outside Europe street hawking and periurban agriculture remains an important source of fresh food.

I think it might be useful to conduct a survey to ascertain where these practices are still going on, their specific nature, and then one would be able to determine appropriate means of supporting and enlarging them when possible.

In general terms, these might include legal incentives, access to credit on favourable terms, subsidised cost of seeds, fertiliser and appropriate transport etc. Of course, their nature would depend on the local food traditions, climatic conditions, etc.

I think that if street hawking and periurban agriculture are appropriately supported, they would serve as very useful adjuncts to general food security, and may even provide gainful employment to some.

Thank you.

Lal Manavado.

13. Daniel Adotu, Peoples' Interventions Worldwide, Uganda

Street food is good for urban dwellers who cannot be able to produce food and yet they work in the urban center all day.

The only issue that should be stressed is the hygiene and sanitation so that, the food is consumed in a clean and healthy environment.

Thank you

Daniel Adotu

14. Ilaria Proietti, IPTS-JRC Science Hub, European Commission, Spain

Thank you Cecilia for mentioning the **food safety issue** of street food.

Nutritional and sustainable diets cannot avoid the food safety aspect of foods.

Ready-to-eat foods, prepared and sold by street food vendors represent a food security strategy put in place to support low-income populations. All over the world street foods provide a wide range of commodities and nutrients, helping people to meet their nutritional needs: indeed, easy accessibility, variety in taste and choice and low cost make street foods an affordable option. Moreover, street foods play an important socio-economic role, in terms of employment and income for those involved in their production and/or selling, empowerment of the local economy and the preservation of the local food cultures.

Nevertheless, the food sold on the street may also represent a risk. Food prepared and exposed for sale may become contaminated by pathogenic micro-organisms as well as hazardous chemicals. **Vending stands are often not adequate and clean water, waste disposal and sanitary facilities are often not available in the whole vending area. Poor storage facilities and transport conditions also contribute to the overall difficulties in managing and improving street food safety.**

As a consequence, greater awareness and preventive measures need to be implemented for coping with risk factors in a systematic and effective way.

More information specifically on chemical/toxicological risks is available on the paper: *Identification and management of toxicological hazards of street foods in developing countries* (Food and Chemical Toxicology 63 (2014) 143–152).

Gisèle Yasmeen, University of British Columbia, Canada

Thank you for all the contributions and to our moderators! Here are my answers to questions 2, 3 and 4. I will get to questions 5 and 6 in the next few days.

2. Are there examples of concrete measures promoted by local authorities to recognize and increase such kind of link?

I am unaware of concrete measures but there may well be some examples. The National Association of Street Vendors of India (NASVI) as well as other organizations such as the Cebut City United Vendors Association (which I documented for FAO at: http://www.fao.org/3/a-y1931m/y1931m05.htm) may have information on this.

3. If so, how have these actions influenced consumers' choices towards street food?

Unknown to me.

4. Have similar initiatives been prompted directly by street food vendors associations? How?

As above. Unknown to me.

15. Rabiu Auwalu Yakasai, Trans Sahara Global Foods Investment Ltd, Nigeria

Hello Stefano.

Good topic of high relevance to facilitate on global level. I just hope a more relevant strategy would be the outcome to be in favour of the group in focus. Most of your questions are answers to themselves when read in reverse being they are revealing and create awareness about a salient issue which seem to be helping authorities but with little policy incentive to address the issue, at least in developing countries.

Please check my little contribution as attachment below.

Thank you.

Street food and urban agriculture hold great promises to school meal subsector in Nigeria. Unfortunately, the country looks elsewhere leaving commuter secondary and tertiary institutes to be fed by street food vendors during break times. In Kano state for example in the last four years, the state government had realized social and economic significance of this problem and intervened by empowering women in the street food business with training and some amount of money to expand or start up as the case may be. You see, street food business in Nigeria is so lucrative for obvious social and economic reasons that formal restaurant business with organized infrastructures and operating within same territory could not sustain 'killer' competition from street food business. This is the case in all major cities and towns in the country. What is required from government is intensive training and constant information dissemination covering food nutrition, hygiene and business development. A typical street roast meat table in Nigeria is a luxury treatment for the rich and upper strata in many developed countries.

Urban agriculture in Nigeria is yet to bloom due to many reasons. Rural agricultural production has no organized market and no local processing or preservation facility therefore urban area is the only place farmers could send their farm produce from the nooks and corners of the region. This creates market glut thereby bringing down produce price for street food producers to have a field day. This is normal and daily trend until change comes along in future. But by organizing street food businesses to work hand in hand with farmers groups to cater for student meal business perhaps this would trigger development of the urban agriculture since there is untapped potential in existence all over the environment, in government ministry premises, company premises and residential land surplus for intensive horticultural production.

However, by matter of extrapolation of the street food subsector, Homebound Food Business (HFB) is another dimension of the street food business in Kano and many other towns in Northern Nigeria. HFB is where food is prepared by women (housewives) in the home for selling outside in

the street by their daughters, sons, or hired sales personnel. HFB is a major role player in providing meals to aforementioned secondary and tertiary institutes.

16. C. Palanivelayutham Chokkalingam, India

I want to share with the forum about perimeter vegetables cultivation by Farmers interest groups in our area. CASE STUDY . Perimeter horticulture plays a vital role in food security to some extent. The lands in around town is the base for this cultivation. In India in the state of Tamil Nadu Tuticorin is one of Dist, capital slowly shifted to industrialisation. In this mean time the villagers around this town earn their income by cultivating horti. Crops and marketing their marketable surplus to this town. In this context 15 no. Farmers interest groups were formed by horticulture department. The main objective of this FIGs integrating farmers to adopt new technology, and using of hybrids to maximize the yield.

Integrating the famers to market their produce to nearby town at reasonable price without middleman. For which Greenveg. outlet have been started by coperative dept. The produce obtained from these FIGs are sold here. The urban people getting good quality vegetable with less price. Thus perimeter veg. cultivation and marketing in urban area increases the food security in sustainable manner.

17. Salomeyesudas, Nalla Kerai (Good Greens) Executive Director , India

Few thoughts:

facilitating the following

- tie up with local village farmers for purchase
- credit facility for buying in bulk
- organizing street vendors self help groups as unregistered societies may benefit
- millet based street foods can cater to low income diabetics
- millet based street foods can cater school children
- Finger millet does not absorb oil therefore will be a profitable option for street food vendors
- training to street food vendors on Millet based and local greens based snacks can reduce their expenses
- training in food preservation and storage aspects will help them
- opinion collection of customers will help them to improve their skills

1. TASTE ; RED / GREEN
2. HYGIENE ; RED / GREEN
3. QUICKNESS; RED/ GREEN
4. NUTRITION; RED/GREEN
5. PRICE ; RED/ GREEN

red is need to improve , green is satisfactory

A white sheet with a pencil or pen is sufficient

18. Hélène Delisle, University of Montreal, Canada

Thank you to all those who have posted their very interesting comments. Here is my addition:

Street foods have several potential benefits in Africa, along with their convenience and source of income for low-income people, particularly women. In sub-Saharan African cities, street foods are to become the local 'fast food', thereby preventing the progressive invasion by imported ultra-processed foods. Street foods are not only consumed by lower socioeconomic groups, as often believed and as shown in South Africa (Steyn NP et al 2011).

Street foods may contribute to diet quality: in the cited study, fruits were the most frequent street foods among Black respondents. In the absence of organized institutional feeding for schools and businesses, street foods are the main option. The strategy should therefore be to improve the quality of street food. Street food vendors would benefit from training in hygiene and basic nutrition, as was done in Benin among those selling foods to school pupils, in the framework of the Nutrition Friendly School Initiative tested as an approach in Cotonou (Benin) and Ouagadougou (Burkina Faso). Improvements were noted in the nutritional quality, diversity and safety of the foods and drinks offered to school children. Vendors were resistant at first to offer healthier foods and drinks, fearing loss of income, but as teachers and pupils were also sensitized to nutrition, vendors, sales did not go down.

Whether or not street food vendors should be registered or not is an issue that must be addressed locally.

19. Vijay Yadav Tokala, Department of Horticulture, India

The direct link between street food vendors and local urban farmers prove to be advantageous, as consumers will be having easy access to fresh produce. Encouraging urban agriculture according to demand is necessary to keep up and increase this kind of link. When compared to Super markets or commercial vendors the wastage of produce, in case of street vendors is very low. Usually super markets prefer to keep only very good quality produce discarding even slightly damaged, though it is in edible condition. Street vendors make grade the produce according to quality and fix prices according to quality, making the produce available to all economic sections and minimising wastage. There are some government subsidies being given to establish kitchen gardens and also to encourage urban agriculture, but the pace of urban agriculture is slow and rather decreasing because of high commercial demand for lands in urban area for constructing buildings or other high investment infrastructures to accommodate increasing urban population.

The direct link between street food vendors and local urban farmers may also have a risk of health hazard to consumers as most of the street vendors directly bring their produce form farms, with no knowledge about 'waiting period' of chemicals used. They sell the produce, especially vegetables, immediately harvested a day after spray of chemicals. Hence there exists risk of residual chemicals in foods directly brought from these farms. Establishing a Government policy and its strict implementation to have a basic check of vegetables before entering into market to prevent presence of residual chemicals in them could make the vendor and farmer link safe and strong. Imparting free basic trainings to street vendors and farmers regarding chemical usage, waiting period, residual chemicals etc... and issuing licence to vendors who undergo the training and follow the standards would show good results. Providing incentives to such licence holders to sell near schools, hospitals, transportation hubs would encourage the vendors to follow standards while selling their produce.

Vijay Yadav Tokala, Postharvest Education Foundation (Trainee), India

20. Kirit Patel, Menno Simons College, University of Winnipeg, Canada

Although the street food sector plays an important role in urban food security, state-led food security measures in India have failed to provide a role for poor urban street food vendors to engage in the distribution and consumption of healthy foods. Instead, state-led food security schemes, whether production, distribution, or consumption oriented, have viewed the urban poor simply as beneficiaries of subsidized grain.

We would like to share our research paper published in recent issue (December) of Food Security journal based on our empirical research with street food vendors in Madurai, India. The paper discusses many questions, including rural-urban linkages, posed for discussion in this forum.

This case study of Madurai street vendors illustrates how the street food sector, operated by poor urban vendors selling ready-to-eat, healthy millet-based rural porridges in Madurai, has improved access to nutritious foods and created livelihood opportunities for the urban poor. The paper provides an overview of the informal street food sector, socioeconomic conditions of vendors, gender-based division of labour, as well as the food preferences and health awareness of consumers. The analysis of data indicates the marginalization of street food vendors under the existing policy environment in urban India. The paper discusses how the state, as a regulatory body and a service delivery agent, as well as research and development organizations can strengthen the rights and capabilities of street vendors to improve urban food security.

Bibliographic info of our paper:

Patel, K., Guenther, D., Wiebe, K. Seburn, R. (2014). Promoting food security and livelihoods for urban poor through the informal sector: a case study of street food vendors in Madurai, Tamil Nadu, India. Food Security, 6(6), 861-878. DOI: 10.1007/s12571-014-0391-z

I would appreciate comments and suggestions on our paper. If any member has problem in accessing my paper, please email me: k.patel@uwinnipeg.ca

Thank you.

Kirit Patel

21. Ochieng' Willis University of Nairobi, Kenya

Street food and urban farming is not something new in the world. It began long time ago in places like Machu Picchu in Peru back in the days when water could be reused as a form of new architecture to grow vegetables. During world wars I and II, urban farming began in places like US,CANADA and UK -Victoria gardens emerged which were used to produce vegetables and fruits thus ensuring food security for the soldiers.

As the world population increases, food security becomes an issue. the world rate of urbanizing is high and it is estimated that by 2050,60 percent of the world will be urbanized. The importance of urban agriculture is threefold: it provides food, it's a source of employment and a source of income to the urban poor households (Mittlin, 2005).Urban agriculture is good since it can promote women empowerment as it goes along well with other household chores done by women which can sometimes deny them the opportunity of a formal job. For example, as they water vegetables on the backyard, they cook for the family. Urban agriculture should be promoted and encouraged through proper policy enactment.

In Kenya for example, urban and peri-urban agriculture is doing well in places like kiambu which was initially agricultural land but due to rapid urbanization, it has already been engulfed by the ever expanding Nairobi city. Farmers here, have devised several means of remaining food secure through urban agriculture by constructing storey buildings for keeping say pigs, chicken and dairy goat/cow on different floors. They again live some little part of the garden for fodder and home

gardening purposes. This not only ensure food to the household but also income from the sale of produce.

However, urban farming comes with it threats and challenges. The example of a storey building in Kenya for animals faces a threat of outbreak of zoonitic diseases. Respective governments therefore needs to ensure that good policies are enacted to regulate urban agriculture. for example, the government should make it mandatory that from specific time period say 5pm, certain streets in the city should be opened for food street vendors to sell their produce. strict food policies should be enacted to regulate urban farming and certain standards have to be set to avoid issues of food poisoning from polluted foodstuffs.

Governments need to protect its citizen from issues of food poisoning from the urban agriculture. sometimes the source of water used for irrigation in urban areas, is not safe for human consumption. for example, in Kenya, urban farming has improved the living standards of some youths in shanties like kawangware slums by growing indigenous vegetables along the Nairobi river. The water from this river is polluted from industrial wastes and so these vegetables can be harmful to human health by containing heavy metals. the issue is not improved standard of living, but the impact of this activity on the social welfare of the larger population.

In conclusion, urban farming is good though good and strict policies need to be enacted to regulate the sector to avoid food poisoning and other diseases that can emanate from this activity. if properly regulated, it can be a vehicle towards food security and poverty alleviation for most of the urban poor.

22. Stefano Marras, facilitator of the discussion

Dear all,

Thank you for all the valuable contributions that have enriched this discussion so far.

Among the many useful information and ideas that you all shared, let me point out a very interesting and, I must say, unexpected observation raised by Gisèle Yasmeen.

In her report for the International Development Research Centre (IDRC) entitled "Urban Agriculture in India" (available at: http://doccentre.net/Besharp/resources-expertise/Urban_Agriculture_In_In...) she described the case of Dr RT Doshi – an internationally recognized leader in urban food production – who obtained biomass from sugar cane vendors for his own food production work.

This case shades a light on the fact (often neglected) that the relationship between street food vendors and farmers is not necessarily a one-way relationship, in which the farmer sells to the street food vendor the raw ingredient for cooking, and that is it. Rather, it can have a **"reverse" direction**, there where waste products from the sale of street food, for instance, can be put **back into the production chain in the form of fertilizers or even as fuels** (eg. exhausted oil can be turned into fuel for farming machines).

I would invite you all to send your thoughts about this!

Are you aware of cases or recycling projects that involve farmers and street food vendors?

23. Moses Bayinga, Ministry of Agriculture, United Republic of Tanzania

The food security is the societal issue that need attention. In the least developing countries, the well-defined and practical policies are important to involve the potential actors in street food,

periurban agriculture and horticulture. The Governments have to prioritized the those area to ensure availability, accessibility and utilization of nutritious food for healthy and active life.

24. Stefano Marras, facilitator of the discussion

On the basis of the many interesting contributions to this discussion, I would like to share with you additional questions, hoping you find inspiration for more, new contributions.

1. Some of you have pointed out the benefits of street foods based on millet (particularly in India, as reported by Prof Kirit Patel and Salomeyesudas), fruit (e.g. in South Africa, as noted by Prof. Hélène Delisle) and vegetables (e.g. in Lahore, as pointed out by Hamid Ahmad, and in Europe a century ago, as noted by Lal Manavado).
   What products, both plants and animals (including insects), do you believe should be more present on street food vendors' stands? Why?

2. **Are you familiar with technologies or techniques being tested for better transportation and better storage of food from rural to urban areas?** (See Mr. Vijay Yadav Tokala's contribution)

3. A key, often neglected issue is brought out by Hamid Ahmad. Hamid notes that the consumption street food in the United States is related to socio-cultural practices and secondary needs (e.g. free time). The so-called “foodies” in the US are even willing to pay the same price they would pay for the same product in a restaurant. In poorer countries, however, street food is mainly related to urban poverty and basic needs, providing nutritious food at low cost. Hence, Hamid points out the risks coming to official, top-down projects aimed at improving the quality of street foods, there where such projects may bring higher costs for vendors, and therefore higher prices for consumers. Rather, Hamid suggests that "social pressure and table talk on the spot by consumers routine matter and affect much more than drawing any lines for monitoring and evaluation."
   What do you think about this?

4. Lisa Kitinoja points out that postharvest losses (due to poor handling on the farm, damages during harvest, poor quality packaging) bring farmers to raise the prices of their products on the market to compensate.
   What role could street food vendors play to reduce farmers postharvest losses?

5. Prof. Hélène Delisle mentioned the Nutrition Friendly School Initiative implemented in Benin and Burkina Faso: street food vendors were trained in hygiene and basic nutrition to be able to sell healthier food to school children. This project proved to be successful, generating improvements in the variety and quality of food served. Nevertheless, such a project needed to sensitize the students themselves (they often love, you know, foods that are rich in chemical colors and flavors). Awareness activities were then conducted with the participation of teachers.
   Are you aware of campaigns or communication strategies, aimed specifically at children and young people, aimed to encourage them to eat healthier foods? Any example of “fun and creative” campaigns, as suggested by Ms. Amila Fauziah?

6. Farmers prefer to sell their products in bulk (either to general markets or supermatkets) in order to have a high revenue. This means that street food vendors, taken individually, are not an attractive customer to farmers. As pointed out by Salomeyesudas, to support the connection between street food vendors and local farmers, the former should unite in

cooperatives enabling to buy large quantities of products. This strategy would benefits both actors, as it would eliminate middleman (See Mr. Palanivelayutham's contribution).
What organizational strategies could be put in place to encourage, strengthen and make the link between street food vendors and local farmers profitable?

7. Massive conurbation erases cultivable areas within urban areas (See Lal Manavado and Gisèle Yasmeen). This happens because the value of building areas is higher than that of cultivable areas. For this reason, cities' governments prefer to sell (at high prices), or to grant land (with the prospect of high returns in taxes) for building rather than farming.
Can you think of possible strategies to make arable land in the city as profitable (either in the short or in the long term) as building land?

8. Finally, the food safety issue is certainly important. But it is necessary, in my opinion, to go beyond the great amount of literature and reports showing the high level of bacterial contamination and ensuing toxicological hazards of street foods. In 1985 Pan American and World Health Organization (PAHO and WHO) organized the first workshop on the issue in Lima, Peru. A few years later, in 1991, a severe cholera epidemic struck the Peruvian country and the surrounding Andean region; street food was considered to be the major carrier of the disease (Ries et al., 1992, Panisset, 2000). Ever since, the assessment of bacterial contamination levels in street foods has drawn the attention of scholars, authorities and organizations throughout the continent and beyond (Schubert, 1992; Arámbulo et al., 1995; Costarrica et al., 1996; Morón and Schjtman, 1997; Moy et al., 1997; Evans and Brachman, 1998; López Rivera et al., 1998; FAO and WHO, 2001; Hanashiro et al., 2005; Larralde and Sciutto, 2006; Bogota N.A.O., 2009; FAO, 2009a; Méndez et al., 2010). Several factors potentially contribute to bacterial contamination of street food. Beside the dust, pollution, insects that are lurking in the streets, risks may arise where street food is home-prepared by those vendors living and selling in underdeveloped settlements, where water and sanitation infrastructures and services are often deficient (UN-Habitat, 2003). When vendors have low or no schooling, their knowledge and awareness about bio-medical guidelines to handle food safely may be limited.
Despite knowledge of the risk factors, actual harm to consumers' health is yet to be fully proven and understood. Due to difficulties in tracking cases and the lack of disease-reporting systems, follow-up studies proving actual connections between street food consumption and food-borne diseases are still very few (i.e., Flisser, 2013). Little attention has been devoted to consumers and their eating habits, behaviors, and awareness. The fact that social and geographical origins largely determine consumers' physiological adaptation and reaction to foods--whether contaminated or not--is neglected in the literature.

25. Sabrina Aguiari

Thanks Stefano for this new articulation of the street food topics.

More than a case to feed the guiding questions you propose so far i would like to suggest an additional guiding question: are you aware of any case where the measure put in place towards food safety where introduced with a sort of 'protection' perspective, to actually make sure street food actors are helped, accompanied, in facing training, additional equipment requirements, bureacratic (and contingency of having to face administrative structure corruption) procedures to obtain permits?

I think if cases in this direction exist and could be shared in this forum, they might result to be also key good practices - people-centered - that ought to be considered in any future policy and regulation recommendation.

26. Maria Travaglini, Oficina de Nutrição, Brasil

Pessoal,

A comida de rua é uma necessidade das cidades por lugares mais simples, mais rápidos e mais em conta, além de também servir como uma oportunidade de criar um modelo de comprometimento, de maior inclusão das pessoas no negócio.

Uma das atividades que realizo com muita satisfação, são os Cursos de Boas Práticas na manipulação dos alimentos para "ambulantes" (vendedores de alimentos na rua), pois, a Prefeitura da cidade, exige que todos sejam devidamente capacitados para manipularem alimentos, não podendo atuar nesse setor sem esse requisito.

Esta é uma excelente oportunidade para conhecer melhor as dificuldades que as pessoas encontram nesse tipo de trabalho e orienta-las melhor. Um exemplo é o popular caldo de cana (também conhecido como garapa) tradicionalmente preparado sem os devidos cuidados e com grande resistência a mudanças principalmente por trabalhadores mais antigos.

A falta de água e de banheiros também são problemas praticamente unanimes que afligem e prejudicam esses trabalhadores.

Muitos deles fazem a maior parte da manipulação em casa, longe dos olhos da fiscalização sanitária. Outros compram alimentos prontos, de fornecedores que nem sempre estão devidamente qualificados. Durante o curso procuro orienta-los a exigirem e prestarem bastante atenção na qualidade dos alimentos que compram.

Ultimamente tem aumentado também o número de feiras de alimentos orgânicos provenientes da agricultura familiar, que oferecem serviços de venda online e através de coletivos de consumo.

Não podemos deixar de mencionar à moda do Food Trucks que é uma versão moderna da comida de rua, altamente rentável que traz o melhor da gastronomia as ruas das cidades, elevando assim a percepção sobre o trabalho dos ambulantes.

Obrigada,

Maria Travaglini

27. Dr. RB Tiwari Indian Institute of Horticultural Research, India

1.Are you aware of actual direct links between street food vendors and local urban farmers

Yes In India it is commonly observed that during the main season or glut farmers supply teucj loads of fruits such as jackfruit, watermelon to road side venders. some time entire truck load material will be unloaded to single place. These street food venders sale produce by removing peel and seed in a ready to eat form such as water meol slices or jackfruit bulbs and also sale whole fruits to passing customers. Onther direct lonk has been observed beetween green coconut producers and road side sallers as the produce is directly supplied by farmers in the morning in a templo or cart while vender will cut and offer the fruits to indivisual customer.

Measures promoted by local authorities:

In some cases street fruit venders offer fresh cut fruits as fruit salad. To have asafe approach local autorities compell to sale to produce keeping in enclosers of glass to avoid contact with flies and dust.

How have these actions influenced consumers' choices towards street food

It gives cheap and fresh produce to consumers

28. Dr. Lisa Kitinoja The Postharvest Education Foundation, United States of America

One of my colleagues from New Zealand, when working in Tanzania on a food processing project for SIDA, went shopping for citrus peels that she wanted to use to make into a delightful candied peel confection (oranges, lemons, and/or limes). She approached street food vendors in Arusha who was making fresh juices, and requested permission to take the "trash" for her training program. Once the local women had learned to make the candied peel, and were packaging it in brightly colored containers with nice labels and selling it successfully in the markets, the citrus juice makers realized that they had a valuable by-product and began selling the peels.

Dr. Lisa Kitinoja

The Postharvest Education Foundation

29. Jane Sherman, Food and Agriculture Organization of the UN, Italy

This is a good discussion, thank you Stefano.

All agree that street food is here to stay, that it is a vibrant market sector and provides a good service to people who need it. But all also agree that food hygiene and safety standards are low (see e.g. Ilaria Proietti). The technical and social means of dealing with this are clear: training, inspection, rules and standards, clean water supplies, good sanitation, clean transport etc. It is not at all clear however how these are to be achieved where public funds are lacking.

The only alternative I can see is improved consumer education and influence, the market “pull” factor that Hélène de Lisle described in the NFSI project in Benin where (as I understand it) children learned to ask vendors for healthy food, and vendors duly responded (I must find out more). But can that work more widely? The Good Greens polling system where customers give vendors red or green marks according to their price/ taste/ hygiene/ freshness and nutritional quality, is very direct and appealing and I imagine that consumers can probably generally see freshness (though even in a stew?). But how can they recognize good hygiene (e.g. if they cannot see how food or plates have been washed) or judge nutritional quality or know if foods are contaminated or if colour is due to chemicals?

I have tried to find out from FAO if consumer education can achieve these things but have had no joy. I have not seen these skills covered in school or public education materials. Does that mean that consumer education can't achieve much? And if regulation can't be afforded, does that mean we can't fix the problem of safety in street food? Can anyone show the way here?

Jane Sherman, nutrition education consultant, FAO

30. Rowens Andreick Cristancho Gómez, Industrial University of Santander, Colombia

Hi dear everyone, my name is Rowens Cristancho, I live in Colombia, South America.

I’m biologist, and like all of you, I'm really concerned about the global food security. In this forum, I have seen opinions from many professors and PhDs; I´m sorry, I don´t have a lot of professional experience, I received my bachelor degree a couple of days ago. Some of you have cited many reports about street food vendors, I don´t have a lot of data, but something I know, I was for a long time a street food vendor in order to pay my basic needs and my professional studies.

Food street sales in my country is a current activity to get money in the urban poverty zones. This situation is produced by the fact that there are two kind of markets for food; I don´t know if this denomination way is right, but I called them: the big formal market and the little informal market. For the first one, the productive chain looks like this: a really big agricultural company produces tons of tomatoes, the tomatoes are sold in bulk to companies like Jumbo, who distributes the tomatoes in a high price but with a really sexy presentation, or McDonalds who uses the tomatoes in its products. I know that you know more than me about this topic. For the second one, the productive chain looks like this: a little local farmer can´t produce tons of tomatoes, he just produces some pounds; he carries his products to the local market where the prices are lower, this place is visited by poor people, who can´t buy in Jumbo (like me), in order to prepare street food, because is a fast and practical way to get some money.

I would like learn from you more about this situation, and sharing information science different points of view like social economic, scientific, and practical experience.

Thank you.

31. Mengoung Siegfried, CECOSDA -Center for Communication and Sustainable Development, Cameroon

Dear all,

In Cameroon, street food is a common issue. CECOSDA, as a center for Communication and Sustainable Development for All has been working with street food vendors to improve their impact on food security.

Yaounde, Cameroon:

In Biyem-Assi, a neighborhood of Cameroon's capital city Yaoundé, Solange Kimbi and her younger sister prepare food to be sold roadside to the local population which includes men and women of various works of life. Solange has been preparing and selling food for a period of about 7 years. By providing food to those workers, she considers herself as a pertinent actor in food security process in her community due to shortages and increase in prices of raw food stuff.

Solange sells a plate of food at 500 Frs CFA(onedollar). "It is the minimum cost per a plate. However, most average Cameroonians cannot afford to have a daily plate of food at this rate". Being considered as a low-income and food-deficit country by the World Food Programme, Cameroon has conducted in 2007 a food security and vulnerability analysis. This suggests that vulnerability and food insecurity in the country were due to poor agricultural production, low education and income levels, and inadequate infrastructure

Threats to food security may seem out of place for a country like Cameroon, with abundant agricultural resources. However, Solange has a major worry because she has seen food prices increase very sharply over the past seven years and still increasing till date. More often she counts on local farmers to supply raw food. Every effort put in by the State has not actually yielded any fruits despite several attempts to decrease the price of food stuff. According to Solange, most of the raw food from the local farmers of Cameroon which was usually consumed in urban areas is now being exported to other neighboring countries like Chad, Nigeria, Gabon, Central Africa Republic, Equatorial Guinea, amongst other.

Considering the high cost of raw food stuff in the market, the security of roadside food does not seem to be guaranteed. Most of the food vendors do not take out time to look into the cleanliness part of the preparation, since they cook in large quantities and are always in a hurry to meet up with the consumers. The hygienic aspects of street food vending are a major concern for consumers, and food control officers. Vending stands and beer parlors are often crude structures, and running water, washing facilities and toilettes may not be available. Moreover water used for

cooking of food stuffs and washing of plates is usually not often verified; most of it is carried from dirty wells, sometimes very close to toilets, and often offered to customers to drink. Another call for concern lies on inadequate refuge disposal facilities, which lead to accumulation of refuge at food vending sites. This attracts an increased pest population and favors a high risk of food contamination.

The above mentioned are a major call for concern since it has proven to be the greatest source of food borne diseases. Foodborne bacterial agents are the leading cause of severe and fatal foodborne illnesses. Of the many thousands different bacterial species, more than 90% of food-poisoning illnesses are caused by species of Staphylococcus, Salmonella, Clostridium, Campylobacter, Listeria, Vibrio, Bacillus, and Enteropathogenic Escherichia coli (E-Coli).

This is under looked by most of these roadside food vendors, thus a real call for health concern to the entire public. CECOSDA as a center for Communication to Sustainable Development for All took the initiative to sensitize some of these food vendors on the food security aspect of roadside food consumption. This has actually been a highly appreciated initiative which has helped curbed the minds and behaviors of these vendor who has actually changed some aspects of the preparation and serving of food to customers.

32. Violet Kadenyeka Mugalavai, Chepkoilel University College, Kenya

The University of Eldoret, formerly Chepkoilel University College is in a Peri-urban set-up and we have developed a value chain which shortens the distance between producer, vendor and consumer of vegetables, fruits and cereals for the sorrounding community, including the student population. This lessens costs on transport for both producer and street vendor and makes commodities more affordable whilst lessening the loss of nutrients and that may occur due to excessive postharvest handling, and shortens the carbon loop. The sellers feed their waste back into the University gardening project in which students from the sorrounding schools participate in producing, processing, packaging and selling of produce the vendors. The consumers enjoy the products which are hygienically made and the demand is very high, necessitating an expansion of the project.

33. Keith Kline, Oak Ridge National Laboratory, United States of America

Overall, agricultural production systems around the world have been improving in efficiency such that the vast majority of increased production over the past two decades is attributed to enhancing "total factor productivity" (TFP) rather than expanding the land area or increasing the inputs needed to feed the world (See for example, Fuglie and Rada 2013; http://www.ers.usda.gov/amber-waves/2013-november/growth-in-global-agricultural-productivity-an-update.aspx#.VIm0GDHF-E4).

Further, as urbanization accelerates, many households bring agriculture and small animal husbandry with them into urban and periurban areas. Similarly, urban areas often expand into agricultural zones without totally displacing production. Thus, it seems clear that an important and growing share of food consumption is coming from these periurban/urban landscapes and this may be one of many reasons for observed improvements in TFP in recent years. However, more research is needed to quantify the scale and impacts. In the USA, rural producers living near urban centers are increasingly participating in urban "farmers markets." Given that the most urgent and growing food problems in the world relate to malnutrition and health effects associated not with lack of food, but with too much of the wrong foods (WHO 2014), trends that facilitate healthy diets should be encouraged. As the US Department of Agriculture reports, "The growing number of farmers markets could reflect increased demand for local and regional food products based on consumer perceptions of their freshness and quality, support for the local economy, environmental benefits, or other perceived attributes relative to food from traditional marketing channels. This

chart updates one found in the ERS report, Local Food Systems: Concepts, Impacts, and Issues, ERR-97, May 2010." Given population dynamics, periurban and urban food production and systems will need to be designed to conserve and recycle energy and nutrients to efficiently meet future food security requirements.

Keith L. Kline

Senior Research Staff, Environmental Sciences

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Center for BioEnergy Sustainability http://www.ornl.gov/sci/ees/cbes/

Oak Ridge National Laboratory

34. Alexandra Wanjiku Kelbert, Institute of Development Studies, United Kingdom

Dear all,

Apologies for coming late into this discussion. Fascinating contributions!

Mine is not so much a contribution as a plug for a forthcoming report documenting people's views on processed and unsafe foods in 10 countries (Bangladesh, Bolivia, Burkina Faso, Ethiopia, Guatemala, Indonesia, Kenya, Pakistan, Vietnam, Zambia)/

As part of the Life in a Time of Food Price Volatility, a joint programme with the Institute of Development Studies and Oxfam GB we have been looking at the impacts and responses to high and volatile food prices across 23 communities. More info here.

Each year we focus on a 'special topic' such as young people's perceptions of farming or local accountability for food security.

This year we chose to focus on understanding the adequacy and acceptability of the food people are eating in the research communities, focusing specifically on how food habits and customs are being influenced by processed foods and foods perceived to be unsafe. In particular, we ask 1) what kinds of processed or adulterated foods people consume, 2) Why they do so, 3) What their worries and concerns are, and 4) What is being done to address people's concerns (eg. education, regulation, inspections etc.).

Why are we interested in these issues? Concerns about food safety have emerged in earlier rounds of the research, as have signs that cooked (out of the house), processed or 'fast' foods are becoming more important in many people's diets, including in rural areas. People may think the food they are consuming (or selling) is inadequate in various ways – they may worry about how nutritious it is, how clean it is, or they may feel that an important part of culture and wellbeing is being undermined as food habits change. Others may disagree: they may like the new tastes and believe processed foods bring better nutrition and a modern way of life.

While food safety and quality are growing issues for people who are poor, they are also raising anxiety among middle class consumers – campaigns have been started and people are talking about it in the media and day-to-day. We think that our research can make a contribution at a moment when these issues are getting a more responsive hearing in policy circles.

Our national research teams have been conducting focus group discussions as well as interview with households, and key informants in the area of food safety, the informal food industry and nutrition. We are currently in the process of collecting all the data and will soon be proceeding with the coding and analysis. For now, there are a couple of blog posts online (here and here). We're hoping to be able to share our findings in the spring.

If anyone is interested please do not hesitate to email me via this forum.

Best regards,

Alexandra Wanjiku Kelbert

35. Eileen Omosa, Researcher at We Grow Ideas, Canada

All I cannot forget is that as a bachelors student at a university located in a capital city, and as a high school student in a boarding school; street foods, roadside foods, by-fence foods made our days. Looking back, they made a contribution to our nutrition as well.

I knew that the maize vendor located halfway from our university halls of residence and lecture theaters was linked to some nearby farmer; how else did he manage to access and provide fresh maize and mangoes on a daily basis? Each morning there was a whole sack full of fresh maize which he pulled out, removed the green self covers and roasted on the fire kiln. The numbers at any one time varied with the time of day. I guess he had information on when lectures started and ended so as to have ready hot roasted maize for students. The vendor tended to have just enough supply for the day. The good thing about foods such as roasted green maize is they are easy to tell if not fresh. Thanks to the vendor, students were able to access not only a snack to and fro class, but a delicacy not provided for in the university menu. Anyone recalls roast maize as part of the university variety of rich menu items?

Based on my networks in the city and daily reads of local newspapers, I gather that the services provided by street food vendors have become more important as universities shift more towards cost-sharing whereby students have to pay-eat or cook. The street vendors help students save on costs and cooking time. The vendors, unlike formal establishments in the form of restaurants and hotels, tend to be affordable and providors of variety and fresh foods. The street food providers do individual research on supply and demand, and after a short period of time are able to cook just enough food for the day: they end up not wasting food while the consumer receives freshly harvested and cooked food on a daily basis. Subsequently the street food providers enhance food security of not only students, but the employed who commute to the city for work.

The street food vendors rely a lot on relationships to run their business. Good relationships with the urban, peri-urban and sometimes rural farmers means that they are assured of a supply of raw materials. The nature of the business being direct, with limited middle-men means that farmers and street food providers have a direct relationship, so is the relations between the food vendor and individual buyers. I remember while in university, the maize and fruit vendors knew their customers so well that on some evenings they would inform you that they have run out of the food when you could see the mangoes or roast maize on the stand; then they explained that whatever you see there is because the expectant women or aenamic student will be leaving class at 6;00 pm and they will need their share of the food to have a good evening and night. Therefore in large cities, where restaurant are struggling to supply "modern mass meals", the street food vendors are left to provide for individual and seasonal needs. The established social relations also ensure that the food provider supplies food of good quality - if a customer falls ill from consumption of such foods, they will have a direct conversation with the vendor without the bureaucracy of making an appointment to meet with a restaurant manager who will require time to establish who the supplier of the raw food was, etc.

At the same time, the existence of street food vendors is an indication of goverance, regulation and formal markets. Unlike what many people perceive, street food vendors are licenced operators; an indication that government recognizes their role in food security and nutrition. On the other hand, the existence of street food vendors can be an indication of the failure in formal establishments/restaurants to purchase foods from small scale farmers. For example it restaurants and hotels in urban areas rely only on large scale farmers for supplies, who will provide a market for the small-scale farmers in urban and peri-urban areas? Street vendors emerge to fill that market

gap of not only purchasing from the farmers, but supplying unique ready food items to individuals with particular food needs.

36. Lalita Bhattacharjee and Sridhar Dharmapuri, FAO, Bangladesh

Dear FSN Forum members,

Please find below a note prepared in collaboration with a colleague (Dr Sridhar Dharmapuri) from our FAO Food Safety Program. It illustrates the experience of street food vending in a peri urban location, Khulna city in Bangladesh. This initiative which is likely to be taken to scale builds on an earlier action research supported under the –NFPCSP - FAO Food Policy Program.

On linkages with urban agriculture, there is need to explore the potential, especially in schools and communities notably through gardening activities. We are also attaching some pictures.

Kind regards,

Lalita and Sridhar

The Street Food Initiative in Bangladesh – The Khulna Example

Sridhar Dharmapuri[1] and Lalita Bhattacharjee[2], FAO Bangladesh

Background

The Government of Bangladesh has recognized the role of street foods in urban food security and it has been outlined as a strategic area of intervention in the National Food Policy of Action (2008-2015) under strategy 3.5, entitled as 'Safe, quality food supply: Institutionalization of safe and hygienic street food vending as medium and long term actions'.

Street foods are noted to be low in cost and present an attractive alternate to home-cooked food. Street food vending is usually practiced as a family business and in the majority of cases; it is a source of employment for the household members. Precise numbers of street food vendors in Bangladesh are not available but estimates show that the capital Dhaka alone (population: 14 million) may have more than 2 million street vendors.

Critical issues however remain with regard to legal and commercial recognition, poor safety and hygiene and disputes over urban spaces that are occupied by the street food units. Recent evidence from FAO supported research also suggests that street foods in Bangladesh are highly contaminated with pathogens causing illnesses such as typhoid fever, hepatitis, gastroenteritis, dysentery and related infections.

Given this context, FAO under the aegis of its Food Safety Project supported by the European Union piloted a unique street food initiative in the southern city of Khulna, Bangladesh in partnership with the Khulna City Corporation (KCC). Khulna is the third-largest city in Bangladesh with a population of 1.5 million. This urban street food scheme that was initiated in 2012 is characterized by several hallmarks that underlie a successful FAO-Government partnership.

High level buy-in

The Mayor of Khulna was instrumental in the successful implementation of the scheme. From the outset, when the FAO team mooted the idea of a street food assistance program to the city, the Mayor constituted a task force that included the CEO and veterinary officers of the KCC whose remit includes food safety. This team actively liaised and held several meetings with the FAO team to plan and implement the initiative. All through the process, the Mayor monitored progress and resolved bottlenecks in the administrative procedures.

The steps to roll out

FAO procured 300 street carts based on a design by Concern Worldwide and provided them free of cost to the KCC. These three wheeler carts are based on the model of a rickshaw and are therefore mobile.

1. KCC team orientation to licensing

The FAO team initially provided the information highlighting the necessity of the street food initiative and the importance of enrolling street food vendors through a licensing system. Licensing was necessary as it rendered the vendor accountable for maintenance of the street cart and observing Good Hygienic Practices (GHP). It also facilitated monitoring as each cart has a unique number with a license book valid for a year. Failure to observe GHP and poor maintenance could lead to the cart being withdrawn and transferred to another vendor.

2. Training of vendors in GHP

The KCC task force enlisted 500 vendors for training in GHP. An initial two-day Training of Trainers (TOT) program was conducted with 15-20 participants on good hygiene practices in street food vending. The training was delivered by the FAO team using manuals and flip charts specifically developed in Bangla for this purpose. The trainers were drawn from KCC officials and other professionals. The trainers then conducted 2 day training courses in 25 batches of 20 vendors each. The course material was based primarily on the '5 Keys of Food Safety' developed by WHO. The vendors were provided with a list of do's and don'ts for safe and hygienic food vending.

3. Setting up of street food kitchens

Four street food kitchens were constructed as part of the street food vending programme in different parts of the city. The purpose of these kitchens was to provide a clean, well maintained space for cooking of street food. The street cart vendors would then collect the food items and circulate through the city. The kitchens also had a separate area where the carts could be washed and cleaned.

4. Distribution of carts and utensils

Each cart was equipped with the essentials. These included a kerosene stove, a 20 litre refillable bottle of drinking water, utensils including pans and tablespoons for cooking as well as plates, cups, glasses and tablespoons for customers. The carts were handed over at a high level ceremony by the Mayor to 300 vendors. The vendors received their license books as well as aprons and caps to be worn while cooking and serving street food.

The entire process from ordering of procurement of carts to distribution took only 4 months. This was possible because of the whole hearted commitment of the KCC to see this initiative realized in the shortest time frame possible.

Monitoring of street carts and GHP

Over the last two years, a monitoring program has been set in place by KCC and the FAO Food Safety Project supported by the Kingdom of the Netherlands. A core group of 31 food safety monitors of the KCC who visit vendors regularly has been established. The process was kicked off with a 2 day training program on the 5 keys to safe food, the role of GHP in street food vending to assure hygienic food and a field visit to observe the current level of GHP in street food vending. Checklists including questionnaires were developed and SOPs for monitoring, recording and reporting were finalized. Khulna City consists of 31 wards and the vendors in each ward are being overseen by a monitor. The vendors being visited in each ward also include those who did not receive a street food cart from FAO and use a different one. The monitors also conduct practical demonstrations of good practices and behaviors that ensure safe and hygienic food to customers.

The school program

Street food carts converge in public area and particularly around schools. Most children in these schools depend on the carts for their snacks and lunch. Through an initiative of the education

department of the KCC, FAO facilitated the establishing of a core group of 50 food safety school volunteers. 10 schools have enrolled in this pilot group. One teacher and four students from each school have been provided training as was provided to the monitoring task force. The school groups now monitor GHP in the street food vendors near and around their respective schools. Given the increasing popularity of this initiative, more schools are planning to join the volunteer force in 2015.

The outcomes

- Interviews and responses to questionnaires reportedly showed that most vendors have increase in income by 100% or more with the new hygienic street carts.
- This had a 'knock-off' effect on other vendors, many of whom have repainted or remodeled their carts to look like the FAO-provided carts.
- The licensing system provided an excellent handle for establishing a routine monitoring system.
- Good hygiene and safe food practices are beginning to take root as routine practices. This behavioral change has been gradual but noticeable over a period of two years. Customers, who are also regularly interviewed by KCC monitors, have expressed their satisfaction at the level of hygiene and the quality of food being served.
- The KCC has benefited through capacity building activities and are being uniquely placed to lead on food safety in urban areas in Bangladesh.
- The school volunteer program is emerging as a potential mass food safety education movement beginning with the youngest participants.

A caveat

The vast majority of carts find it profitable to remain in fixed locations rather than being mobile, as a consequence, there is no incentive to use the street food kitchens. Moreover, vendors prefer either to cook at home or cook on the cart. The KCC now leases them out to private parties for use as restaurants.

Lessons learnt

1. The involvement of civic authorities at the highest level is key to success of any such initiative.
2. The gradual change in behavior and the rising level of compliance with GHP indicates that constant monitoring with friendly interventions can be very effective.
3. Added dimensions can be brought into such programs such as the school volunteer line up.

Healthy recipes linked with urban nutrition and health interventions need to be integrated as part of the wider street food vending initiative. Local fruits, vegetable salads and healthy meal-in-a dish recipes need to be promoted. The potential involvement of school and community gardens in street food vending in peri urban locations needs to be explored. Nutrition training and imparting cooking skills on healthy, easy- to- cook recipes following hygienic practices will be one of the keys to addressing urban food and nutrition security.

[1] Food Safety Officer

[2] Nutritionist

37. Pradip Kumar Nath, National Institute Of Rural Development, India

1. Are you aware of actual direct links between street food vendors and local urban farmers?

It is rampant in India and more so in Tribal areas - where it is not only cultivation but also collection of food items. Collection of different fruits, tuber, medicinal plants' product which are sold rampantly in the urban areas.

There are many laws to take care of these issues - Rights of the Forest dwellers - Individual Rights and Community Rights.(Forest Rights Act -2006 - INDIA)

Let us not confine our thinking to the so called food items which are cultivated in large scale and there is visibility of Marketable transaction and a modern economy operates (with money). Let us think of those items which are part of consumption of even modern man but only collected from forest or rural areas and most recently near the urban areas.

Take the case of all medicinal plants and tubers. Is medicine a part of food items or not? The Triphala - (Harida, Bahada, Amala)

A big question really to the modern Economics.

Are these sold, as food vendors sell the tiffin's, drinks, launch or dinner pack.

Can we extend our discussion to the all the products (of Consumption) in the food basket and how these operators really function?

2. Are there examples of concrete measures promoted by local authorities to recognize and increase such kind of link?

The so called Informal Sector - as the mainstay of a large section of people's engagement talks about these vendors. And a host regulations are there in India to restrict their operations.

By the same time the local authorities also impose some guidelines for hygienic safety, provision of safe shade, polythene to cover the food items (as in Ahmedabad).

3. If so, how have these actions influenced consumers' choices towards street food?

Many a time it has a very good effect on the consumers - Restrictions on hygienic, quality of oil used, cleanliness of the utensils used for cooking etc.

These have a lot of good effects on the consumers :- washing the glass/cup used for sipping tea in hot water (as is practiced in most part of Kolkatta) -- at least on the health and hygiene of the consumers.

4. Have similar initiatives been prompted directly by street food vendors associations? How?

Yes. Some attempts have started in Pune and Mumbai, but could take shape. But the association of Dabba Bala in Mumbai has time and again emphasized upon the health and hygiene as maintained by them to be taken up seriously by the roadside venders. But it has not taken shape.

In sharp contrast to this Karnataka has strict laws at least in the city of Bangalore, Mangalore and Mysore. No vendor can go scot free without maintaining the basic minimum standard.

This has a positive effect in making the city Silicon valley of India.

5. I believe that creating a system of incentives (e.g permits to sell in areas where there are more potential customers, such as near schools, hospitals, transportation hubs; vouchers or some sort of recognition mechanism for good practices) is required for motivating the street vendors to use locally-sourced, fresh produce. Do you think that such incentives could be successful, and why? What other types of incentives might be, and why?

Rayathu Bazar, the concept of MARKET by the farmers or of the FARMERS/ CULTIVATORs as developed in Andhra Pradesh (India) has given a lot of incentives.

Long since the sale of Grapes, watermelon in Hyderabad , Maize(Corn) and now baby corn cultivated near Hyderabad city have been duly promoted by these Rhyathu Bazar.

Allotting specific locations of high sale point (based on localized customers' demand)to vendors go a long way as found in Hyderabad city (India)

6. What new mechanisms can be put in place to raise peoples' awareness on the consequences of their street eating habits? Do you know any advertising methods which have been proven effective?

In India the large scale advertisement of eating out as a symbol of status has significantly increased the habits of people eating from vendors.

Recent news of Amir Khan - the cine Star eating out from a vendor in Jharkhand has created much ripples.These are big advertisement stunt than the so called health and hygiene concern expressed by Govt of India's advertisement on Cleaning the hands before eating or the campaign for Swachha Bharat or Sanitary Toilet.

PRADIP KUMAR NATH,ADJUNCT FACULTY,

NATIONAL INSTITUTE OF RURAL DEVELOPMENT AND PANCHAYATI NRAJ,

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38. Agape Ishabakaki, University of Dar es Salaam, United Republic of Tanzania

Hello member,

Starting with apologies for late contribution.

I take another opportunity to participate in this dialogue concerning linkages between food hawking and the growing of food in cities in order to stimulate sustainable diets and increased income.

My opinion in this is that; the farmers who are involved in the production should cooperate by conducting some meetings with some representatives from the government plus educaters on the importance of these food. On that meeting they should discuss price of selling their products depending on their efforts, accessibility of markets, how to educate the customers on the product and others which benefit the producer on income side and consumers.

From these suggestions I hope when the procedures are followed benefits to both sides will be obtained.

Thanks.

Best regards,

Young farmer and Research Analysist,

Agape Ishabakaki

39. Gisèle Yasmeen, University of British Columbia, Canada

Greetings to all. Here are my contributions to the last two initial questions. I did not have time to ponder on the follow-up questions. I hope this e-dialogue yielded the results that were hoped for.

1. I believe that creating a system of incentives (e.g permits to sell in areas where there are more potential customers, such as near schools, hospitals, transportation hubs; vouchers or some sort of recognition mechanism for good practices) is required for motivating the street vendors to use

locally-sourced, fresh produce. Do you think that such incentives could be successful, and why? What other types of incentives might be, and why?

Recognition will only go so far. I suspect pricing, convenience and perceived quality are the major issues.

2. What new mechanisms can be put in place to raise peoples' awareness on the consequences of their street eating habits? Do you know any advertising methods, which have been proven effective?

I am not aware of any advertising methods nor whether such methods have been effective or not. I suspect the most issues are price, convenience and quality, as above.

However, the above answers are based on conjecture rather than systematic evidence.

40. Gisèle Yasmeen, University of British Columbia, Canada

I am also uploading documents from an FAO project I worked on in 2002 which do not appear to be on the internet. I found them on a CD-ROM that was issued by FAO. Let me know if there is anything of interest here.

The elimination of food insecurity in the Horn of Africa

http://www.fao.org/fsnforum/sites/default/files/resources/HORN%20OF%20AFRICA%20REPORT.pdf

Sub-Regional Workshop "Feeding Cities in the Horn of Africa"

http://www.fao.org/fsnforum/sites/default/files/resources/Final%20Report.pdf

41. Stefano Marras, facilitator of the discussion

Dear FSN members,

I thank you for all your valuable and interesting contributions to this discussion about the actual and potential connections between street food and urban / peri-urban farming.

Street food is result of the world urbanization as well as of structural or transitory economic recessions, both in developing and developed countries. The growth of urban dwellers and shrinking economy prevent large segments of the population (in particular vulnerable groups such as women, migrants from rural areas, foreign immigrants, ethnic minorities, elderly people, children) from accessing the formal waged labor market. For them, self-employment and micro-entrepreneurship, especially in the food trade sector – which require low start-up investment and overheads, and no formal training – become viable income-generating options.

At the end of the chain, street food responds to the increasing demand for nutritious and inexpensive food, not only (and not primarily) by the poor, but most of all by the growing middle- and lower-middle-class urban commuters. All in all, street food participates in alleviating urban poverty and ensuring food security for millions of people in urban areas around the world.

Nevertheless, criticalities (and criticisms) regarding street food safety and quality challenge the sector that is often deemed dangerous to public health as potentially contaminated by environmental pollutants and prepared in poorly sanitized conditions (this is often true in poor countries).

Within this framework, after decades of policies aimed at discouraging street food vending, local authorities in many countries, often under the aegis of FAO, recognized its great usefulness and right to exist, and started implementing policies (mostly including food handling training programs,

some technical support, little infrastructural provision) aimed at improving the hygiene standards. The focus of such interventions, nonetheless, is still stuck on safety issues. Nutritional, as well as social, cultural, culinary, economic, urban, and environmental dimensions are rather neglected by policy makers.

If we want to effectively and deeply support the development of this important and long-lasting sector, we need to broaden the policies' reach and objectives in a holistic and systemic perspective; we need not just to tackle criticalities, but also to emphasize and support the potentials of the sector itself (eg. small-scale vendors' inherent space-time flexibility should be aided, since it enables to stock up when needed, meet customers' demand just in time, minimize waste; also, it allows plug-in and pop-up events that revitalize underused urban land) and the existing and possible fruitful connections between street food and other sectors (eg. urban farming, school and community gardens, sustainable design, tourism).

Many of your contributions prove that synergic, fruitful, largely informal coalitions between street food vendors and urban farmers are already in place in many regions. There are two-way relationships based on mutual exchange of services and products.

Small-scale urban farmers' proximity to the city gives them two comparative advantages. First, shorter transportation and less refrigeration translate into fresher and more nutritious products. The use of these ingredients helps street food vendors to build a positive image of themselves, meet the consumers' growing demand, regardless of their socioeconomic level, for quality street food, that is, not just safe food but also healthy, nutritious, sustainable, slow, local, traditional, zero mile, zero waste food.

Secondly, urban farmers' proximity to the city allows street food vendors to stock up directly from them. By cutting transport, packaging and storage costs, and no need for middlemen, urban grower who can earn more, while street food vendor who can spend less to buy the ingredients, and in turn the consumer, who can have nutritious, fresh food at a fair price.

Finally, the vendors and farmers can make exchange agreement, and feed food waste back into the farmers' land or stables.

I believe that by supporting and stimulating a synergetic coalition between street food vending and urban farming we can achieve not only safer but better street food: a food that is able to ensure the immediate and long-term health of consumers, but also to meet their ethical and cultural needs, while supporting biodiversity and local economy.

Hoping that this discussion will be the basis for further reflections on this topic, I thank again all, wishing you happy holidays and a happy new year!