



Urbanization and Rural Transformation Implications for Food Security and Nutrition

Background Paper to CFS 43 Forum Discussion

This is a working draft informed by input from a first technical workshop in February 2016 and does not represent a completed document. The document will continue to be revised, refined, and elaborated based on input from the FSN Forum online consultation and a more thorough review of the literature and the second technical workshop in June. At this stage the document aims to capture the range of evidence and approaches put forward in the literature suggested by the technical workshop participants in order to outline the main issues and identify possible areas for policy attention and roles for the Committee on World Food Security.

Process to Prepare Background Document:

- Literature Review based on technical workshop input (outline of areas covered and documents to review)
- Online consultation through FSN forum to gather feedback and further input on literature to review and topics to address
- Identification of trends in both the literature and feedback
- Second version (First Draft) of background document, with preliminary identification of areas for policy attention
- Technical Workshop
- Final background document serves as the basis for the Forum discussion at CFS 43

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Introduction

Urbanization and the transformation of agriculture, food systems and rural spaces present challenges and opportunities for inclusive growth, poverty eradication, economic, environmental and social sustainability, and food security and nutrition. As a result, there is an increasing focus on rural-urban linkages and approaches which can address these issues in a holistic and integrated manner in order to fully address the challenges and maximize the opportunities. The Committee on World Food Security agreed to address these topics over the course of 2016 and 2017, in order to identify key areas for policy attention and promote policy convergence.

Objective and structure of the paper

This paper presents a brief review of the most recent literature¹ on the topics of urbanization, rural transformation, and rural-urban linkages in order to better formulate how the Committee on World Food Security can add value to existing initiatives and promote policy convergence on this topic. The overall structure and topics covered were an outcome of a technical workshop² held in February 2016. The paper first outlines existing definitions of the terms of urbanization, rural transformation, and rural-urban linkages in order to frame the key food security and nutrition challenges and opportunities related to changing rural-urban dynamics, which follow. A description of governance issues and current approaches for addressing food security and nutrition in the context of rural-urban linkages is then presented. Finally, an outline of existing initiatives and potential roles for CFS are identified.

Historical definitions of urban and rural

Each country defines 'urban' and 'rural' by using criteria which are suitable for their own national context. Criteria used include administrative criteria, economic criteria, population-related criteria and urban criteria related to the functioning of urban areasⁱ. Examples include population density, the presence of non-agricultural activity, or existence of paved streets or post offices. The variability in these criteria has a significant impact on the ability to compare 'urban' areas globally. The complex nature of cities can be better captured by combining several criteria to define urban areas and is a growing practice among countriesⁱⁱ. Cities are also extending into peri-urban and rural areas, further blurring the lines between historically 'urban' and 'rural'. Many areas previously classified as rural or peri-urban are growing rapidly, often in an unplanned manner, resulting in a mix of historically urban and rural characteristics in these areas.

On the other hand rural areas have long been defined as areas with lower population density and where agriculture and other primary activities account for a significant proportion of land use, employment, income, and economic outputⁱⁱⁱ. However, defining rural areas along these lines is not applicable in all countries, particularly when looking at developed economy rural areas where there may be a significant amount of manufacturing

¹ The literature reviewed in the preparation of this paper was the result of a call for input from technical experts and practitioners working in this field and the result of a technical workshop held in Rome in February 2016, but is by no means exhaustive. Priority was given to publications and research published after 2012.

² Results of the workshop can be found on the CFS Working Space at <http://www.fao.org/cfs/workingspace/cfs-ws-home/en/>

or other industry, and where rural populations may not rely significantly on agriculture. Similarly, so called ‘urban culture’ is found in many rural areas and many peri-urban areas are less dense than traditional rural villages^{iv}. Add to this the growth of urban agriculture and livestock keeping, and the lines between rural and urban become less and less clear.

Therefore the ability to define ‘urban’ and ‘rural’ or the significance in doing so has vastly changed particularly as many historically categorized ‘rural’ households are now working in more ‘urban’ areas and vice versa.³

What do we mean when we refer to urbanization and rural transformation?

Urbanization is defined as the shift in population from rural to urban settlements or the share of urban population versus rural population. The rate of urbanization refers to the annual growth rate of the urban share^v. However, urbanization is often used to refer to a wider degree of elements associated with population growth, land use, economic activity and culture^{vi}. This can create confusion in assessing drivers and also in determining interventions. Urbanization is largely the result of migration and can occur as a result of changing urban conditions or a result in changing rural conditions, including the expansion or reclassification of areas^{vii}.

Rural transformation has been defined in many different ways, but largely as a ‘process of comprehensive societal change driven by global and homogenizing forces that interact with localized structures, institutions, and actors to produce uneven patterns and outcomes of development’^{viii}. It has also been described as a ‘process whereby the sharp economic, social, and cultural differences between rural and urban gradually blur and bleed into each other along a continuous gradient’^{ix}. Criteria used to define a process of rural transformation include diversification of rural economies, increased dependence on more distant places to trade goods, access to services and ideas, movement to towns and small/medium cities, and cultural assimilation into large urban areas^x. The focus when talking about rural transformation has tended to be on migration of rural people to cities moving away from agriculture, when there are actually many other factors at play, which contribute to changing rural and urban realities.

What are the implications of the growing rural-urban linkages for food security and nutrition?

Inter-linkages between urban and rural areas relate to movement of people, capital, goods, employment, information and technology, and represent economic, social, and environmental dynamics^{xi}. Rural-urban linkages have been defined as ‘consisting of flows (of goods, people, information, finance, waste, information, social relations) across space, linking rural and urban areas, or the ‘functional links between sectors (agriculture, industry and services)’^{xii} with many of these linkages related directly or indirectly to food and nutrition^{xiii}.

The Habitat Agenda of 1996 urged countries to promote sustainable rural areas and to reduce rural to urban migration^{xiv}. However, over the last twenty years there is substantial

³ For the purpose of this paper, the terms urban and rural will be used as a result of the data and literature available at this time, while acknowledging that there is a lack of consensus on how the terms are defined and an interest in moving away from the dichotomy of urban vs. rural.

evidence indicating that attempting to reduce rural to urban migration can lead to a number of negative consequences for food security and nutrition and that conversely there are both challenges and opportunities presented by the dynamic rural-urban linkages.

Increased rural-urban linkages present both challenges and opportunities for achieving food security and nutrition in a variety of complex and interlinked ways throughout food systems⁴, including:

- Achieving productivity increases (or lack thereof) (in agriculture and/or a shift to more productive sectors) as a result of access to technology or greater investment;
- Employment/income generation (or lack thereof) through productivity increases, non-farm activities, and/or closer proximity to markets;
- Access (or lack thereof) to more diverse products, including nutritious and less nutritious food;
- Access (or lack thereof) to quality natural resources (safe, healthy, and productive); and
- Access (or lack thereof) to quality services and infrastructure.

It is impossible to address one of these areas without impacting one of the other areas. It is also impossible to characterize urbanization or rural transformation as good or bad. Urbanization may result in higher incomes and greater access to services, while it might also result in higher costs of living, and poorer quality water or other natural resources. However, there is general agreement that sustained economic growth is difficult to achieve without urbanization^{xv}. Similarly, the transformation of rural areas can deliver very positive impacts in terms of access to services and higher incomes, but it can also mean that certain areas are left behind, and create pockets of poverty.

Overarching and cross-cutting issues related to food security and nutrition

While the growing urban-rural dynamics present specific challenges and opportunities to achieving food security and nutrition, they are also affected by the broader challenges and trends associated with achieving food security and nutrition worldwide.

There are many human rights which are at stake when assessing rural-urban linkages including the right to food, the right to water, the right to health, the right to adequate housing, the right to education, the right to work and to social security, the right to information, and the right to take part in public affairs. Many of these rights are put at risk, particularly in informal settlements and/or for unregistered migrants. Human rights violations as a result of urbanization and rural transformation include forced evictions, lack of provision of sanitation or safe drinking water, and increased instances of violence or conflict, among many others.

Though poverty, food insecurity, and malnutrition remain concentrated in rural areas, there are growing rates of malnutrition and food insecurity in urban areas. The most inequitable outcomes of urbanization and rural transformation will occur when the same social groups

⁴ Food systems encompass the entire range of activities involved in the production, processing, marketing, retail, consumption, and disposal of goods that originate from agriculture, including food and non-food products, livestock, pastoralism, fisheries including aquaculture, forestry, and the inputs and outputs generated at each of these steps. Food systems also encompass a wide range of stakeholders, people and institutions, as well as the socio-political, economic, technological and natural environment in which these activities take place.

are excluded from both rural and urban locations – which are often the very poor. Groups or individuals that face social exclusion for reasons such as ethnicity, race, religion, or social class, will also tend to be excluded from opportunities emerging from rural-urban linkages, and will face greater challenges to achieving food security and nutrition. Vulnerable individuals in both areas often include individuals employed in informal sectors, newly established settlers (including refugees and displaced people), landless or land scarce households, female headed households, elderly, disabled, and sick, and low income and resource poor households. Each of these individuals/groups are made more vulnerable by crises including natural disasters, civil unrest, and the outbreak of disease.

Food insecurity and malnutrition challenges associated with rural-urban linkages are often more stark for women and girls, as they account for three fifths of the world's one billion poorest, but also in the challenges they face in participating in decision-making and accessing resources and services targeted to their needs^{xvi}.

Similarly, youth deserve a targeted focus when assessing food security and nutrition implications of rural-urban linkages. Over 50 percent of the world's population is made up of children and youth, with an estimated 1.8 billion young people between 10 and 24^{xvii}. Approximately 90 percent of these youth live in developing countries where food insecurity and malnutrition are also highest. The growing youth population presents an opportunity for economic and social progress, but also presents challenges. Seventy three million youth between the ages of 15 and 24 were unemployed in 2013, with the highest proportions in North Africa and Western Asia. Interventions related to employment, and access to services such as health and education will have to be targeted to this growing portion of the population.

Human rights, the specific needs of vulnerable people, and the need to focus on women and youth cut across the rural-urban dynamics outlined in the following section. These issues also highlight the importance of inclusion, equality and equity when designing interventions to manage rural-urban dynamics.

Rural-Urban Dynamics and Implications for Food Security and Nutrition

While the challenges and opportunities explored in this section have been grouped under headings pertaining to specific issues for the purposes of readability, they are intrinsically interlinked - with changes in diet affecting changes in labour demand (and vice versa), and climate change and natural resource use affecting value chains (and vice versa). This very complexity is why none of these issues can be seen as solely a challenge or opportunity, nor can they be dealt with in isolation.

Demographics and shifting settlements

More than 50 percent of the world's population, or around 3.9 billion people, now lives in cities and large towns classified⁵ as urban, and this figure is expected to rise to 66% by 2050^{xviii}. Urbanization in Africa and Asia, while currently lower than other regions of the

⁵ These classifications are based on the criteria outlined on page 3 of this paper, thus not all urban classifications are comparable along the same criteria.

world, is expected to result in an increase in the urban population from 40 to 56 percent in Africa, and from 48 to 64 percent in Asia by 2050^{xi}.

Large cities account for only 13 percent of the world's 'urban' population, and yet often receive the largest share of focus in policies and research. However, there is growing acknowledgement of 'city regions' or 'polycentric urban regions' where the focus is more on flows of goods, people, and services rather than on administrative boundaries or classifications. At the same time urban density is decreasing, with the development of peri-urban areas and 'economic hinterlands of cities' becoming more widespread^x, which presents considerable challenges in terms of economic efficiencies, land use, land rights, and resource use.

The largest share of 'urban' expansion is happening in small and medium size urban centers/areas or secondary cities^{xi}, with over half of the world's 'urban' population living in settlements under 1 million^{xii}. Conversely, approximately 3.3 billion people live in the rural areas of Africa, Asia and Latin America, and another 1.3 billion reside in towns and small and medium (or secondary) cities (under 500,000 people)^{xiii}, together totaling 75 percent of the world population. Secondary cities are projected to contribute nearly 40% of global growth by 2025, significantly more than growth projected for megacities^{xiv}.

Small and intermediate towns and cities are more accessible to rural populations in many cases, and can also present an opportunity to deliver many of the benefits associated with urban centers (income generation and access to services), without presenting as great a burden on local natural resources as megacities. Research over the last 30 years indicates that small and medium sized towns play crucial roles improving food security and nutrition through non-farm employment, income, access to markets and other services^{xv}. However, small and intermediate towns and cities can also develop into pockets of poverty as they often are less equipped in terms of infrastructure and services to deal with an influx in population^{xvi}. Urban poverty is not concentrated in the largest cities, but often dispersed in secondary cities, or small and medium towns, which now account for a larger share of the urban poor^{xvii}.

There are many factors contributing to changing rural-urban dynamics, of which rural-urban migration is one which receives a substantial amount of focus. However, from 2000 to 2010, less than half of the world's urban population growth was the result of migration^{xviii}. Increasing mobility has meant that migration may not be a long-term decision, where many rural-urban migrants return to rural areas after a short-time. Migration is often referred to in a negative way, when in many cases it also presents opportunities. For example, the remittances sent by migrants back to local areas are often key components of supporting rural livelihoods and risk diversification. The value of international remittances to developing countries in 2011 exceeded \$400 billion and in some countries accounted for as much as 20 percent of GDP.^{xix} Migrants are some of the largest investors in rural communities, even as they themselves struggle to meet their own food security and nutrition needs. However, in a 2011 survey of population policies, 82 percent of developing countries reported that they had implemented policies to curb rural-urban migration^{xx}. This has probably largely occurred as a backlash to discourse around the negatives of urbanization or 'urbanization without growth', even though more recent research has rectified these conclusions^{xxi}. Some would argue that the discourse has taken the opposite swing to favoring cities and the urban agenda, over focusing on rural issues or 'reviving' rural areas^{xxii}.

When looking at the world's poor, approximately 78 percent of those living on less than US\$2 per day live in rural areas, and 63 percent of the poor are working in agriculture^{xxxiii}. And yet an increasing share of world poverty is located in urban centers, although it is not always fully accounted for as a result of current measurement systems^{xxxiv}. UN Habitat estimates that about 45 percent of the urban population in developing countries live in slums – or households lacking adequate space, solid construction, improved water, or improved sanitation^{xxxv}. Some have argued that food security is as much of an issue in urban areas as it is for rural, although in varying ways^{xxxvi}.

These dynamics illustrate that achieving food security and nutrition will require solutions targeting both rural and urban poor, but even more so building capacity to deal with the fluidity of growing and shifting populations. There are challenges with increasing mobility and shifting populations associated with the ability to ensure adequate infrastructure and service provision to growing populations and for people who may live and work in different areas or go back and forth between areas. There are also opportunities to reach a greater portion of the population with quality services and access to income generating opportunities in a growing number of more dispersed 'hubs'. Similarly, there are challenges with understanding the dynamics and fluidity of migration and how to allocate resources to adjust services and infrastructure which can address this fluidity. But there are also opportunities to provide a greater diversity of options for the rural and urban poor to meet their food security and nutrition needs depending on their skills, needs, and desires and to adapt and respond to changing dynamics.

Consumption patterns/diets/nutrition

One of the key inter-linkages between urban and rural areas is demand for food, and as incomes rise there is also an increase in demand for fruit, vegetables, and dairy. Rising incomes are also correlated with rising demand for processed foods. The discussions around consumption and food security and nutrition have long focused on staple food crops (often grains, cereals, roots, tubers). Recent research in Sub-Saharan Africa illustrates that grains and cereals account for less than half of total food consumption in terms of economic value, though they still account for two thirds of caloric intake in some regions^{xxxvii}. Consumption of 'other' products such as vegetables, oils, pulses, nuts, sugar, fruits, and beverages, accounts for around 30-40 percent of total economic value, with animal products accounting for the remaining 15-30 percent. This means that the nutritional value of 'other' products is increasingly important given its share of household spending^{xxxviii}. Chronic malnutrition is attributed to micronutrient deficiencies (iron, vitamin A, zinc, iodine) as a result of not consuming enough food with these nutrients, even if consuming enough calories. In addition, the rise of non-communicable diseases like diabetes and cardiovascular diseases are exacerbated by malnutrition, particularly in urban areas but increasingly so in small towns and cities.

In Africa, purchased food amounts to more than 80 percent in secondary and smaller cities, and more than 90 percent in major cities. However, even in rural areas, purchased food accounts for more than 50 percent on average of the economic value of food consumed.^{xxxix} Similarly in Asia, the share of purchased food in total consumption has risen, with purchased food accounting for about 80 percent in rural Bangladesh and Indonesia, 72 percent in rural Vietnam, and 58 percent in Nepal^{xl}. Of this percentage of purchased food, a portion is processed food. In rural areas in these four countries, consumers are spending 59 percent of their total food expenditure on processed food and in urban areas this rises to 73

percent. Research from East Africa indicates a similar trend, with processed food making up 68 percent of purchased food expenditures^{xli}. The increase in the demand for processed and perishable goods is growing most rapidly among those making under US\$2 per day^{xlii}.

Food safety and health for many of the rural and urban poor is threatened largely by environmental hazards and infrastructure deficits, including lack of access to or poor quality sanitation and contaminated or inaccessible sources of water. Many markets, particularly in urban areas, are located in areas with inadequate solid waste collection and without adequate shelter and storage facilities to keep food from spoiling^{xliii}. Inadequate hygiene training may further contribute to food safety threats, particularly when vendors concerned with incurring losses resort to selling spoiled or contaminated foods. However, food vending both provides an important income stream particularly for women, and can provide a cheap and accessible food option, particularly in urban areas. Therefore, there is a trade-off in terms of food quality and safety with lower prices, accessibility, and for vendors an income generating opportunity.

This means that it's no longer possible to talk about urban consumers as net buyers and rural producers as net producers. It also means that both the urban and rural poor are vulnerable to fluctuations in food prices, both are more reliant on food markets, and thus more susceptible to food safety concerns, and nutrition becomes much more of an issue of malnutrition rather than undernutrition.

Trade/markets/value chains

Considerable attention has been focused on both the changing dynamics of agricultural value chains, but also the potential for value chains to strengthen rural-urban linkages. While there is discussion in the literature on the need for shortening value chains, and many cities and developed economies focusing on buying more local, the increasing demand of urban areas and the scarcity of land in peri-urban settings means that in many cases value chains are lengthening within a country but also within regions. The lengthening of domestic value chains and regional value chains presents opportunities for mid-stream actors and smaller and medium size urban areas^{xliv}. 'Middle' or mid-stream segments include processing, storage, wholesaling, and logistics of agricultural value chains. The opportunities are magnified when there is complementary investment in infrastructure and technology, which can reduce food loss and waste along longer value chains, reduce the seasonality of consumption, and make it easier for retailers to buy directly from rural actors – smallholders, wholesalers, traders^{xlv}. However, there are also benefits of shorter supply chains, particularly from an environmental or 'food mile' perspective, but also in terms of other factors related to health and reduced potential for loss or waste.

The shift in diets and demand from both rural and urban consumers away from grains outlined in the previous section, presents opportunities for smallholders to increase income earning potential. Fruits and vegetables can provide a higher return per labor day or hectare compared with grains – sometimes 5-10 times higher^{xlvi}. This not only translates into potentially higher income, but also more time to engage in mid-stream or non-farm employment which can increase earning potential. With even rural households purchasing a greater share of their food, food access through income generation becomes increasingly important. Similarly, food prices and overall efficiency of food systems and value chains are also growing in importance as the proportion of purchased food increases. However, smallholders are also vulnerable to changes in agricultural production systems including increased mechanization, land division and concentration.

As urban populations have increased, there has been concern that the rise of supermarkets and the increase in purchased food would mean that small retailers would be edged out of the market. Recent research indicates that the majority of urban food expenditure is still directed to small family owned shops, and that supermarkets account for roughly 20-30% of urban food spending^{xlvi}. The percentage of spending at modern retailers varies by the type of food product, with modern retail outlets accounting for more than half of the spending for processed foods, while meat, fish, and vegetables are purchased at traditional outlets. The percentage also varies by household income, with the poorest households spending just 4 percent at modern food outlets, and the richest households spending 33 percent. The role of local traders is key and often not sufficiently recognized. These traders are often able to buy the entirety of the harvest of smallholder farmers, while supermarkets and multi-nationals might only be able or willing to purchase a proportion of it related to relatively strict quality, grading and food safety requirements.^{xlvi}

Concerns regarding food imports and the rise of international trade have fueled discussions related to rural-urban linkages and the impact that trade will have on domestic markets. Recent research indicates that meeting domestic market demand in Africa has been shown to be more lucrative than exporting food products, even for agricultural exporting economies^{xli}. Other research indicates, that domestic food production constitutes 90-95 percent of the food economy, and international trade in food constitutes only about 5-10 percent^l. This is largely due to the fact that domestic markets generate additional activities, providing greater employment and income generation possibilities through processing, storage, distribution, packaging, energy, etc. However, there are also many cases of cheap imports undercutting local producers, for example in West Africa where it is cheaper to import rice in many cases than buy from local producers.

Recent research has attempted to address the role of food vendors, their participation in value chains, and the impact that they can have on food security and nutrition^{li}. Street food from vendors plays a role in food security and nutrition in a variety of ways, and often makes up a large portion of non-home prepared meals, particularly for the urban poor^{lii}. While food vending provides an income generating opportunity, there are considerable constraints in terms of poor physical infrastructure, environmental hazards and spatial conflicts. In Asian and African cities, food vendors are predominantly female, with women involved in 90 percent of Filipino street food businesses, 81 percent in Zimbabwe, 67 percent in Nigeria, and 53 percent in Senegal^{liii}.

Employment/labour

The concentration of employment in urban areas is one of the main drivers of urbanization and rural-urban migration. Discussions around rural transformation also often focus on the labor/employment element, and the shift away from agriculture and what this means for the considerable portion of the population which may be shifting from part-time farming into more full-time non-farm work^{liv}.

Changing diets and increasing demand for non-staples also impact employment opportunities, as the production of horticulture, aquaculture, and dairy typically have higher labour/output ratios than grains^{lv}. In addition, 50-70 percent of the value added in non-grains is post-farmgate which means further employment opportunities in value added activities such as marketing, packing, cold storage and transport^{lvi}.

The rise of small towns and cities and their increasing urbanization means that rural areas are not just inhabited by farmers, but include a growing number of people working in processing, repair and maintenance, trade, transport, education, health services, and other areas. The people working in these areas are buying their food at markets, and even those still active in primary production often have another income, which may be their primary income or a secondary source such as remittances.

It is important to note the differences among regions when analyzing employment by sector, with South Asia and Sub-Saharan Africa being far more reliant on agriculture (48 percent and 61 percent respectively), compared with Latin America where agriculture accounts for only 16 percent of employment^{lvii}. Data from the 1990s and 2000s indicates that non-farm income in rural areas is estimated at 37 percent for Africa, 51 percent for Asia, and 47 percent for Latin America^{lviii}. However, figures on percentage of non-farm employment and income vary widely within regions and include many different factors. Some studies focus on percentage of household income from non-farm activities – meaning including farmers who engage in part-time activities or seasonal activities, while others focus on percentage of total households engaged in non-farm activities^{lix}.

Employment data often may only focus on primary employment and may not capture the range of income earning activities that many households are engaged in. More recent data seems to indicate that farm households are increasingly engaging in non-farm income earning activities^{lx}. However, these activities may still be in food systems, with other research in East Africa indicating percentages as high as 80 percent of all jobs affiliated with food systems, and 90 percent for all rural jobs, and even 60 percent for all urban jobs^{lxi}. Income diversification can reduce the risks associated with relying solely on farm-based income.

Research analyses ‘push’ and ‘pull’ factors for why households may engage in non-farm income generating activities, in that typically lower income households may be ‘pushed’ into non-farm activities out of necessity, whereas higher income households may be ‘pulled’ into non-farm activities out of the opportunity to engage in higher productivity sectors/activities^{lxii}. Other factors at play include agricultural productivity and proximity to urban areas. Where agricultural productivity has increased, less labour is required and thus ‘released’ into non-farm activities. Similarly, rising incomes as a result of greater productivity may lead to greater investment in non-farm activities, thus creating new demand for labour and a greater number of people involved in associated services and manufacturing. This may also mean that people relocate to respond to labour demands or may result in an increase in commuting between places of residence and places of work^{lxiii}. Labourers may commute to small or intermediate cities, and rural labourers may cover a wide area of smaller towns in seasonal positions.

Conversely, households pushed into non-farm income generating activities may be a result of the difficulty of sustaining a livelihood from farming or primary production. This may mean that they relocate to more productive areas (often closer to cities) or that they engage in low productivity non-farm activities^{lxiv}. This scenario may lead to more diversified activities, but still result in low income and high poverty areas. Data indicates that this scenario is more prevalent for vulnerable households including indigenous people, ethnic minorities, pastoralists, disabled people, and migrant workers^{lxv}.

As non-farm income becomes increasingly important with urbanization and rural transformation, employment opportunities and challenges deserve greater focus, particularly with extremely young populations in many developing countries. In Africa, 300 million youth are expected to enter the labor market over the next 15 years and over 700 million in the next three decades^{lxvi}.

Land Use

A large percentage of agricultural production can be found in urban and peri-urban areas, with a recent study indicating that approximately 60 percent of all irrigated cropland and 35 percent of all rainfed cropland is within 20 kilometers of city boundaries^{lxvii}. There is also an increasing focus on urban agriculture and ‘greening’ urban spaces, referred to by some as ‘ruralising’ urban settlements^{lxviii}. Some estimates indicate that 1 billion people are farming in cities contributing to 15-20 percent of the world’s food supply coming from urban areas^{lxix}.

Land surrounding urban areas is often in high demand for both rural and urban land uses. More than 50 square kilometers of mostly rural land is converted to urban use every day. There may be a combination of agriculture, environment and city functions in these areas. Land governance systems in some countries treat rural land differently than urban land in terms of administration, and they may not be coordinated, or previously rural classified land areas may have actually burgeoned into small cities, without a change in the type of land use administration. As cities expand, or urban sprawl occurs, land previously used for agriculture, is often turned into real estate or dwellings, thereby reducing the amount of available land for agriculture^{lxx}. According to a United Nations report, if land conversion into urban use continues at current rates, every new urban resident in developing countries will convert on average 160 kilometers of non-urban land to urban land by 2025^{lxxi}.

As urban areas grow and land is converted into other uses, or as land prices rise close to urban areas, in some cases agricultural production is shifting into hinterland areas where land is cheaper. This presents challenges for land governance and the rights of landowners and users, but may also present an opportunity where formerly hard to access or more distant regions left out of focus for investment may now be attracting increasing attention. The challenge will be to ensure that investment in these areas occurs in a way in line with the aspirations of communities living in these areas and delivers benefits to them in achieving food security and nutrition.

Natural resource use/flows

Cities are often located in areas with access to natural resources such as water and soil, and yet when cities expand rapidly the very resources identified to make the city tenable are put at risk. Resource consumption by urban and rural dwellers differs greatly, and there is a wide range of thought and literature on which is more ‘sustainable’. Some research indicates that ‘smart cities’ are the way of the future and will reduce pressure on natural resources, whereas other research indicates that greater urbanization will lead to a further aggravation of the environment and natural resources^{lxxii}. In fact in many cases, urban areas may have become cleaner and greener by displacing environmental burdens and resource needs to more distant rural areas where they receive less attention. For example, in Asia, urban productivity is more than 5.5 times that of rural areas but the same cities also consume 85 percent of energy and 67 percent of Asian cities fail to meet EU air quality standards^{lxxiii}.

Natural resource use and contribution to environmental damage often pose and exacerbate inequities, and it is estimated that 40 percent of all violent conflicts in the last 60 years have been linked to natural resources^{lxxiv}. Poor urban populations in developing countries tend to have the worst environmental health conditions around the areas in which they live, and yet also emit the lowest greenhouse gas emissions per person. Whereas richer populations in cities have some of the cleanest living environments, while contributing the highest per capita contributions to climate change^{lxxv}.

Urban areas have historically depended on rural areas for agriculture and natural resources and the products and services that are derived from them. Wood fuel is one example, particularly in Africa, where cities depend on rural areas for more than 80 percent of their domestic energy consumption^{lxxvi}. However, there is an increasing focus on greening cities to leverage density, while investing in urban forestry, urban agriculture, horticulture, biodiverse gardens and parks, public space, bioengineering, bio filters, phytoremediation, and other options, which reduce the environmental footprint of cities^{lxxvii}.

Climate change

The food system as a whole is responsible for 19-29 percent of total global greenhouse gas emissions, with a about 50 percent coming from agriculture and the remainder from there elements of the value chain including packaging, processing, transport, storage, retail and waste disposal^{lxxviii}. In addition to serving as a source of emissions, food systems are also affected by climate change. Climate change impacts all aspects of food security and nutrition for people living in rural and urban areas, although distributed unevenly geographically. Changing climatic conditions affect the availability of water, ecosystem service functioning, and crop and livestock productivity, and will affect regions that depend on rainfed irrigation more dramatically. Some projections predict an average of 2 percent decline in productivity over the coming decades with more significant impacts in areas of high population growth.^{lxxix} Climate change will also affect infrastructure such as energy sources and transport infrastructure used to transport goods and services between rural and urban areas as a result of more extreme weather events and higher temperatures^{lxxx}.

Globally, the poorest people, in rural and urban areas, who are contributing the least to climate change, are increasingly those most at risk, due to heavier reliance on natural resources, access to services and location of settlements. Many low income and informal settlements are located in areas exposed to floods and landslides, and where there may be very little or no provision for sanitation, surface water drainage and waste collection^{lxxxi}. For example, approximately 410 million Asians are at risk of coastal flooding by 2025, and another 350 million are at risk of inland flooding^{lxxxii}.

Food loss and waste

Food loss and waste occur across agricultural value chains in rural and urban areas from production to consumption. The value of food lost or wasted at the global level is estimated at US\$1 trillion^{lxxxiii}. Approaching food loss and waste in an integrated way throughout the value chain means assessing the impacts of actions in each part of the chain in order to address the causes of food loss and waste. This will require greater coordination and sharing of information among actors, but also specific actions to address improved production planning aligned with markets: promotion of resource efficient production and processing practices; improved preservation and packing technologies; improved transportation and logistics management; and enhanced consciousness of purchasing and consumption habits.^{lxxxiv}

Food loss and waste is highly correlated with infrastructure along the value chain, but also with climate change. Storage facilities or cooling systems may be increasingly affected by extreme weather including flooding and droughts. Climate change may also increase the number of pests and diseases, thereby further impacting potential spoilage and loss.^{lxxxv}

Access to infrastructure and services

Provision of services, in terms of capital costs per person, may be higher in smaller settlements and rural areas as a result of remote locations and economies of scale. This has contributed to the lower provision of services in some rural areas versus urban areas, and greater provision of services in larger agglomerations. At the same time, many rural areas increasingly have access to services and technology similar to areas characterized as urban such as access to education, mobile phones, and health services.

The condition of infrastructure and quality of services are not always measured when assessing access. Though access to services is often assumed to be better in urban centers, an estimated one billion urban dwellers live in crowded tenements, informal settlements, or temporary camps, where there is no access to public infrastructure such as piped water, sewer connections or health and education services^{lxxxvi}. These individuals may be left out of poverty analysis which only addresses income and cost of food, even though the conditions they live in drastically affect their ability to achieve food security and adequate nutrition.

In some cases, cities and towns in rural areas have expanded rapidly into small cities, but without access to urban services or administration. Without access to services, these areas can quickly degrade into areas of concentrated poverty^{lxxxvii}. It is difficult to add services after settlements have been established as costs are often much higher than if planned from the outset^{lxxxviii}. Investment in infrastructure such as roads and electrification can have a considerable influence on transitioning previously poorer areas into productive zones^{lxxxix}, and zones that are left out of these investments risk further decline into pockets of poverty. Very rural, or hinterland zones, may have the highest needs in terms of infrastructure and investment, but also present lower employment generating potential, and higher costs in terms of building infrastructure and service provision, resulting in them these areas dropping in priority in resource allocation^{xc}.

Governance Issues with Increasing Rural-Urban Linkages

As illustrated through outlining the rural-urban dynamics and challenges and opportunities associated with achieving food security and nutrition, more integrated approaches are necessary to address the interrelated nature and evolving dynamics. However, the idea of addressing urban and rural linkages in an integrated way is not a new one. Over the last forty years, there has been greater acknowledgement of the need for addressing inter-sectoral linkages and to analyze interacting systems and the implications for rural and urban areas. In fact, the ideas surrounding community participation in development, or territorial development have been around for decades with many cases and experience to draw from in order to adapt these approaches to addressing the current challenges and opportunities in achieving food security and nutrition in the context of urbanization and rural transformation^{xc}.

And while there is a greater acknowledgement of greater inter-linkages and a need for more integrated development, there is a considerable variety in what the specific interventions should look like, with some proposing strategies which ‘manage’ urbanization so that urban areas are more sustainable and equitable and can accept higher influxes of people from rural areas; while others talk about making rural areas ‘more vibrant’ so that rural people don’t ‘need’ to move to cities. Given the increasing links between urban and rural areas, one can not succeed without the other, and it is likely that mutually reinforcing approaches which address food security and nutrition in urban, peri-urban and rural areas will all be required^{xcii}.

Evidence for Context Specific Interventions

There is general agreement that each rural and urban space is unique and that solutions need to be context specific in order to account for the local political structure, the relationship between rural and urban areas, and the local food security situation and food system structure, with the associated challenges and opportunities. Recent case studies have highlighted the need to address geographic disparities within national borders in terms of food security and nutrition outcomes^{xciii}. While productivity growth, including in agriculture, has led to poverty reduction and improved food security and nutrition in many countries at the national level, acute areas of malnutrition and poverty still exist and are not always captured or adequately addressed.^{xciv}

One of the key challenges with identifying which interventions are warranted to address each specific context, is the lack of data. Censuses are conducted on an average of every 10 years and often ‘miss’ those living in informal or illegal living conditions. Local governments rarely receive census data which they can use in decision-making, as by the time it reaches them it is often already out of date or missing key areas. ^{xcv} Local organizations are playing an increasing role in collecting and providing this information to local governments^{xcvi}.

Similarly, data on rural and urban poor and that of migrants, may not include many factors such as the motivations for migration, or the point of departure (in many cases another urban area rather than a rural area). Temporary migrants which make up a large portion of rural-urban and urban-urban migrants, are often not accounted as they are left out of any formal system which may be based on a ‘permanent’ address^{xcvii}. This further limits their ability to access benefits and safety nets which could contribute to greater levels of food and nutrition security.

There is no published global index of food security which differentiates between urban and rural conditions or is disaggregated to account for the differing impacts of those conditions. The establishment of the poverty line and the relationship with urban food prices is just one example of this gap.

There is growing attention on the potential for ‘spatially enabled governance’ through spatial data infrastructure, GIS, and information and communication technologies^{xcviii}. This would entail collecting community level/highly localized data to use as the basis for GIS and SDI for a wide range of applications including land use planning, targeting social protection programs, and natural resource management among many others.

Participation of Urban and Rural Poor

While there is an overall focus on multi-sector and multi-stakeholder engagement in order to incorporate the wide range of actors from both rural and urban areas into policy design

and interventions, the involvement of those most vulnerable to food insecurity and malnutrition is highlighted as a key element to ensure that policies and interventions are inclusive and equitable. Inclusion and equity are stressed as key qualifiers to add to urbanization and rural transformation discourse, though they remain illusive in practice.

Recent research has illustrated that involving communities or residents in planning, can address sustainability and land management issues, while also making residents and communities happier with the outcomes^{xcix}. Low income households in both rural and urban areas are often left out of planning and policy development, which has implications for the level of infrastructure and service provision targeted to meet their needs^c. As a result, many residents of informal settlements have joined together and are filling some of the gaps by conducting settlement profiling, vacant land surveys, mapping of infrastructure, housing and services, and conducting extensive household level demographic data collection^{ci}. This community mapping and enumeration of data has facilitated greater understanding of specific local challenges and the ability for communities to identify and work on solutions^{cii}. This is one way to address data gaps and to empower and engage community members in equipping themselves with information to bring to policymakers.

Vertical and Horizontal Collaboration and Coordination

One of the challenges with governance in the context of urbanization and rural transformation, is increasing difficulty in determining boundaries and roles as areas expand or are reclassified. Seven gaps that challenge multi-level governance relationships have been identified as i) Information gaps, ii) capacity gaps, iii) funding gaps, iv) administrative gaps, v) policy gaps, vi) accountability gaps, and vii) objective gaps^{ciii}. These gaps affect service delivery (e.g. public transport, drainage, sewage, waste), planning, and budgeting. The blurring of lines between urban and rural areas, and the growth of peri/urban and secondary cities means that there are often many local government authorities involved, whose decisions may effect nearby areas but there may not be coordination or overall oversight at a more 'territorial' level. This can lead to inequity in terms of service provision, as areas with higher incomes provide local institutions with a higher tax base on which to draw for the provision of services^{civ}. The alternate case may be where there are regional problems (e.g. air pollution) or interrelated issues where management impacts another area (e.g. maintenance of storm drains affecting flooding), all requiring greater coordination among local authorities across jurisdictional boundaries and across sectors – vertical and horizontal collaboration.

More vertical coordination across different levels of government is widely called for in the literature^{cv}. Better policy integration at the national or higher levels of government can help to facilitate better coordination, but will also require a measure of decentralized policymaking. This involves an element of decentralization of authority to the more local levels, but also capacity building for local authorities in order to take on greater responsibility in some cases. City planners and managers, together with local rural authorities, often have a much greater influence on public policy decisions affecting food security and nutrition than national level figures. Local government institutions and authorities are often those tasked with implementing national level policy decisions in ways which affectively address local stakeholder concerns and issues. However, decentralization alone will not address the rural-urban complexities if it is not accompanied with more horizontal multi-sectoral thinking and approaches to data collection and implementation at the local level^{cvi}.

Recent case studies have indicated that while there is growing incorporation of food security and nutrition in national policymaking, including cross-sectoral policies and strategies, this is not always translating to cross-sectoral collaboration in implementation^{cvi}. Widening horizontal coordination across Ministries and sectoral actors is widely supported as a necessary step to addressing the complexity of increasing rural-urban linkages. With livelihoods being less easily classified as ‘urban’ or ‘rural’ and an increase in income diversification across different activities, addressing food security and nutrition will require a combination of policies and programs from a variety of areas of expertise. This means that the main entry point on addressing food security and nutrition issues in a particular context may not only be the Ministry of Agriculture but may need to include the Ministry of Land, Ministry of Commerce, Ministry of Public Works, and many others.

There is a growing body of evidence of vertical and horizontal coordination^{cvi} on specific issues such as disaster risk management, climate change, and watershed management among others which could provide lessons for approaching food security and nutrition. Some of the lessons highlight the need to establish clear lines of authority, adequate financial resources, and enduring commitment from all parties^{cix}.

Non-State Actors

Coordination and collaboration extends beyond government, particularly as non-state actors are playing important roles in addressing challenges and opportunities associated with urbanization and rural transformation. For example, the private sector plays an integral role in housing provision and upgrading in rural and urban areas. While many civil society organizations are playing key roles in upskilling and facilitating access to information for smallholders to access markets in rural and urban areas.

Vertical and horizontal coordination also apply to non-state actors particularly in relation to value chains and the need to identify inclusive solutions that respond to rural-urban dependencies.

Integrated Rural-Urban Approaches to FSN

With the greater call for approaches which address the interrelated challenges of achieving food security and nutrition across rural and urban areas, an effort has been made to describe key elements to these approaches and what has worked and what hasn’t in different context specific cases. Efforts have also been aimed at what is intended by an ‘integrated’ approach. The OECD has put forth the idea that ‘actions and policies are considered integrated when they are complementary to and interact with each other as part of a coherent and organic strategy designed to achieve a common set of objectives’^{cx}. Each of the approaches outlined below aims to address ways to achieve this integration.

Territorial approaches

Territorial approaches are defined as ‘public interventions which build on local capabilities and promote innovative ideas through the interaction of local and general knowledge and of endogenous and exogenous actors’^{cx}. By embracing both urban centres and rural areas in an area, territorial approaches are described as providing valuable opportunities to bring the rural dimension into debates surrounding urbanization and promoting a more sustainable urbanization^{cxii}. Territorial approaches are also characterized by the

development of a territory (including both more rural and more urban areas in a defined space), at the same time as addressing the development of multiple sectors, implemented by a range of stakeholders and structured by multi-level governance – or governance that involves coordination between local, regional and national level authorities and stakeholders. ^{cxiii}

Examples of territorial approaches include:

- **Mozambique** has decentralized in recent years and in this process has developed territorial plans, including local stakeholders in planning. The government has strengthened local authorities' jurisdiction, thereby empowering them to address food security and nutrition at the local level.
- **Tungurahua, Ecuador** is a small but densely populated province which has created its own framework and agenda for addressing food security and nutrition at the province level. This has allowed the design of FSN interventions to be very site specific and tailored to populations needs. ^{cxiv}

Smart Systems

Another concept which is aiming to address urban-rural linkages has been dubbed by the Asian Development Bank as 'smart systems'. The ADB describes this approach as one that 'envisions urban challenges from a holistic perspective by integrating the rural issues as part of the urban system' and goes further to state that smart systems are 'management platforms using information technology and institutional coordination for effective implementation of programs through enabling synergistic inter-linkages in five thematic areas:

- Integrated Planning and Management;
- Urban-Rural Linked Policies;
- Smart Governance;
- Innovative Financing; and
- Strengthening Institutional Structures and Capacity. ^{cxv}

City Region Food Systems

City region food systems are defined as

'a complex network of actors, processes and relationships to do with food production, processing, marketing, and consumption that exist in a given geographical region that includes a more or less concentrated urban center and its surrounding peri-urban and rural hinterland; a regional landscape across which flows of people, goods and ecosystem services are managed' ^{cxvi}

City region is not intended to only refer to large urban centers and the surrounding rural areas, but also to small and medium sized towns which link more remote rural areas and the people living and producing in them to urban centers and markets of different types. ^{cxvii}

There are many examples of cities which have instituted policies aimed at improving rural-urban linkages, particularly related to food systems:

- **Belo Horizonte, Curitiba and Sao Paulo** have instituted policies aimed at integrating the needs of poor rural households engaged in smallholder agriculture by establishing a stable market and income in providing healthy and affordable food to poor urban consumer households;

- **Melbourne, Montpellier and Paris** have established networks of local authorities across urban and rural areas to establish joint food policies and planning;
- **Vancouver, Milan, Barcelona and Toronto** have established 'land banks' for food security in order to protect identified areas of land; and
- **New York and Paris** have invested in infrastructure for processing and distribution in order to shorten supply chains and integrate greater supply of goods from local rural areas.^{cxviii}

Rural-Urban Partnerships

The European Metropolitan Regions and Areas (METREX) refers to rural-urban partnerships as 'a new approach to cohesion politics by creating new and possibly lasting networks of co-operation, in order to develop and implement projects that help the extended region better cope with current and future challenges'.^{cxix} This concept is then further built upon in other studies, stating that 'rural-urban partnerships aim for balanced development by bringing economically strong and weak places together'^{cxx}. The criteria defined by the authors for rural-urban partnerships included that they should be i) voluntary, ii) long term and sustainable, iii) on the same eye level, iii) and mutually beneficial for both parties. The OECD has outlined and differentiated four types of rural-urban partnerships in order to identify issues to support policy development. The four types are characterized as explicit or implicit, in order to address the objectives of the partnership, and whether there is delegated authority, in order to assess division of authority and degrees of decentralization. A review of the different models through case studies in OECD countries illustrated that there are advantages and disadvantages of each model and will depend largely on the motives and aspirations which bring various actors together in partnership.

Initiatives Addressing Rural-Urban Linkages

As a result of the growing awareness of the need to address rural-urban linkages in a more integrated and holistic way, there are a number of initiatives which are covering this topic in different ways. However, while there are a growing number of initiatives addressing rural-urban linkages, the majority of initiatives may still be approaching the issue from one 'side' or the other. For example, there are a number of initiatives which focus on supplying or producing food for cities and what that relationship might look like among both rural and urban producers. There are far fewer initiatives which take on both rural and urban perspectives and changing flows equally.

- 10 Year Framework Programme on Global Action Towards Sustainable Consumption and Production (<http://www.unep.org/10yfp/>)
- City Region Food Systems Collaborative Platform (www.cityregionfoodsystems.org)
- HABITAT III, Urban-rural linkages, www.unhabitat.org
- IIED, 2015. Reframing the debate on urbanization, rural transformation and food security, IIED briefing paper, <http://pubs.iied.org/17281IIED.html>
- ICLEI City Food Network, www.iclei.org/our-activities/our-agendas/resource-efficient-city/cityfood.html
- Food for the Cities Network, www.fao.org/fcit/fcit-home/en/
- Milan Urban Food Policy Pact,
- United Cities and Local Governments Global Agenda, <http://www.uclg.org/en/agenda>

- CITYFOOD Initiative sponsored by ICLEI-RUAF (International Network of Resource Centers on Urban Agriculture and Food Security)
- Communitas Coalition, Rural-Urban Linkages, <http://communitascoalition.org/urban-rural/>

Points Emerging from the Literature

- It's no longer possible to talk about urban consumers and rural producers, with an increasing amount of food grown/produced in urban areas and a growing number of rural net-buyers of food;
- Both the urban and rural poor are more vulnerable to fluctuations in food prices as purchased food takes up a higher share of consumption;
- Malnutrition has become more of an issue than undernutrition;
- The increase in net-buyers means income generation, and therefore access to food, has grown in importance compared to focusing on increasing production or availability of food;
- Income generation opportunities associated with higher value crops (horticulture) or higher value segments of value chains (processing, packaging) could provide greater benefits to smallholders rather than focusing on improving productivity in staple crops;
- Increasing mobility (in and out migration and short term moves) creates challenges in allocating resources, particularly to service provision and infrastructure;
- As resources grow increasingly scarce and are further impacted by climate change, both rural and urban areas will need to define how to improve efficiency and to prioritize resource use in equitable ways;
- As non-farm income becomes increasingly important with urbanization and rural transformation, employment opportunities and challenges deserve greater focus, particularly with extremely young populations in many developing countries.
- Small and medium sized cities are important hubs to focus service delivery and improve infrastructure;
- Informal markets and vendors are growing in both rural and urban areas and require greater focus in terms of the benefits they provide to FSN and the risks they present;
- It may be more applicable to achieving food security and nutrition to move away from rural/urban and shift to consumption/production and how to ensure inclusion and equity across all geographical spaces;
- While there are a number of different names for the approaches addressing rural-urban linkages they all call for i) more horizontal and vertical coordination across

geographical spaces, sectors, and stakeholders; ii) more inclusive decision-making through ensuring that the most vulnerable and local actors are part of planning and implementation; and iii) addressing budget and capacity building needs of local actors;

- While there are a wide range of initiatives addressing rural-urban linkages, there are still very few national governments with specific policy support or reference to such linkages.

Potential Roles for CFS

Based on the areas outlined in this document and the feedback received through the online consultation and technical workshop, CFS needs to determine, within its function as a global policy convergence body, what role it can play to add value to existing initiatives.

Possible options include:

- Knowledge sharing on practices and models which have worked and those that haven't with a focus on integrated rural-urban approaches to food security and nutrition;
- Identification of lessons learned on the basis of the above mentioned knowledge sharing;
- Development of a policy convergence product (international strategy, voluntary guidelines, principles, action plan or other policy framework) on a specific topic. In narrowing down the topic, the following criteria should apply:
 - ✓ The proposed topic responds to a perceived need for the development of global guidance to generate a policy shift;
 - ✓ The perceived need for a policy shift is supported by a strong knowledge and evidence base;
 - ✓ CFS is the best placed to deal with the topic given its ability to generate multi-stakeholder global agreement and its core mandate to look at global issues from a food security and nutrition lens.

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