A City Region Food System Indicator Framework
A new resource for cities

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Background

RUAF and FAO have developed a City Region Food System (CRFS) indicator framework in the context of their joint programme on CRFS assessment and planning. This framework is a practical tool designed to help cities to:

- assess, following a whole-system approach, the current status and performance of a city region food system;
- identify priority areas for action with clear desired outcomes and ways of measuring change;
- plan strategy and action to achieving desired outcomes; and
- establish baselines and monitor changes resulting from (future) policy and programme implementation.

Development process

The indicator framework has been developed around 21 key "desired direction of travel" areas that characterise a more sustainable and resilient CRFS ("A Vision for City Region Food Systems", FAO & RUAF). Following initial work at two expert meetings organised in Rome (March 2015 and April 2016), a set of 210 indicators/measures was compiled to help measure both baseline data and ongoing progress towards these desired food system sustainability and resilience changes. The framework further builds on experiences from its application by local teams in seven cities on different continents.

Taking a "whole food system" approach, the indicators are based on a matrix of food system dimensions:

- those sustainability areas that reflect the multifunctional nature of the food system; and
- food system outcomes for the different components of the whole food system (from production through to waste, and also food system policy and planning).

The indicator framework connects policy priorities to outcomes that cities may want to see in the future (i.e., changes that characterise a more resilient and sustainable CRFS) and defines possible indicators for each outcome. For each of the six food system sustainability areas, overarching objectives, outcomes and impact areas have been defined (see Table 1 for one example of the first area: social sustainability and equity).

The 210 possible indicators included in the full CRFS indicator framework correspond to the different impact areas. The purpose of the indicators is to help measure the extent to

Synergies between food policies and sustainability goals

In the last decades, many local food systems strategies have been developed by city and regional administrations concerned with food policies. With these strategies, administrators try to organise the food system in a sustainable way and at the same time pursue objectives related to public health, landscape preservation, urban resilience and economic vitality. They also try to link to goals included in urban agendas and international programmes of sustainable development.

To understand the real contribution of food systems and food chains to global challenges, synergies between food policy objectives and those related to international sustainability programmes were identified. The University of Molise, Italy analysed several experiences with assessment of the sustainability of food systems, internationally and at different scales, drawing up a list of ten urban food policy goals and 54 objectives. The list has been compared with the SDGs and the United Nations New Urban Agenda. The results show, on the one hand, that the positive effects of a well-constructed food strategy are manifold and are synergic with other important sustainability programmes and, on the other hand, that an evaluation framework is needed to verify their effectiveness in achieving the objectives.

For further information about the complete list of connections between food policy objectives and SDGs and the New Urban Agenda goals, please write to gia.mazzocchi@gmail.com.

which the desired changes are actually happening. Each city will need to identify the most appropriate indicators for their own priority impact areas. Indicators can also be used to establish a baseline from which to measure on-going progress/change over time. The full framework can be accessed here.

There are two important points to note:

1. Most of the indicators relate to the whole city region; they therefore include both rural and urban situations rather than specify them separately.
2. Many of the indicators are in fact multiple indicators and will need to be disaggregated. The more the data can be disaggregated – e.g., by geographic location, income group, age category, gender – the better.

A number of indicators will require very specific data and may need breaking down into sections to calculate final figures; one example is, "(Decrease in) number and type of people requiring emergency food aid". This process should be informative, even if a final figure proves too difficult to establish. Identifying where data is missing is in itself an important finding.

The indicator framework also includes a column with corresponding Sustainable Development Goals (SDGs) indicators that could be adapted to suit the local situation. This might be useful if a city is making use of SDGs in its own strategic plans. It also sets out suggested data sources, either secondary or primary, from which indicator information could be extracted or collected. This list is not comprehensive.

How to use the framework

1. **Getting started:** As every city is different, the first step will be to identify food system change *priorities* that are informed by a deeper understanding of the local city and city-region context. The indicator framework sets out ideas for "desired direction of travel" and each city will have to decide on (more) specific objectives for attaining sustainable and resilient city region food systems, which may need to align with already set policy objectives.
2. **Using the indicators:** Indicators need to be selected according to priorities and modified to suit the local situation. They can be used to help guide and build initial baseline data. The indicators are only numbers and ultimately need to be connected to their relevant "impact area" and "desired direction of travel" through (early stage) analytical narrative. It should also be noted that the extent to which local organisations/researchers in cities can collect/analyse corresponding data is largely dependent on data availability (secondary and primary data) and on the complexity of the indicators. Challenges will include agreeing on what to measure; finding inexpensive ways to collect data and gaining insights into what it means;

City Region Food System Objectives, Outcomes and Impact Areas

Objectives	Outcomes: desired direction of travel *This will not be achieved quickly but is the kind of change that the city wants to achieve in the longer term*	Impact Areas: key issues to be measured *It is important to clarify the focus of the assessment; the city may need to select from these suggestions as appropriate*
1. Improve health and well-being and increase access to food and nutrition	All rural and urban residents have access to affordable, sufficient, nutritious, safe, adequate and diversified food that contributes to healthy diets and meets dietary needs	Accessibility: Degree of ease with which vulnerable/low-income groups in the city region can buy and prepare fresh, nutritionally balanced food
		Affordability: Trends in food consumption and expenditure for different types of consumers in the city region (including vulnerable groups)
		Health, well-being & nutrition utilisation: Incidence of diet-related diseases and status of diet-related physical and mental health in specific communities
		Nutritional standards & legislation: Extent to which good-quality nutritious food is provided by the processing, retail and catering sectors (including public food procurement) and consumed by customers
		Education and awareness: Extent to which residents of the city region are equipped with knowledge and skills on safe, diversified and nutritious food and healthy diet
		Food safety: Extent to which processing, retail and catering sectors comply with sanitation and food safety regulations
2. Improve social conditions for workers	All workers in the food system work under healthy and safe conditions	Workforce conditions: Extent to which all city region food system businesses provide good-quality health and safety working conditions and risk assessment/reduction for their workforce
3. Build local food culture & heritage	The city region is known for its food culture, food heritage and sense of identity	Food culture and identity: Extent to which food businesses located in the city region are actually connected to food produced/processed in the city region and make the provenance of food visible to customers
4. Ensure acceptability of food provision for all city residents	The city is known for a readily available diversity of food provision to meet the wide range of preferred dietary habits of its citizens	Food choices: Extent to which food provision meets the needs of a diversity of customers

engaging decision/policy makers or budget holders in prioritising this work; and aligning this work with available resources: money, time, expertise, commitment.

3. **Data collection:** Collection and analysis of data on selected CRFS indicators can be accomplished using a variety of methods, including:
   - qualitative and quantitative data collection by means of household, government and business surveys;
   - further stakeholder and expert consultations (focus group discussions, interviews, etc.);
   - quantitative food flow mapping; and
   - use of representative case studies to illustrate specific issues, highlight (potential) innovations and provide more specific inputs /ideas for policy and action planning.

Where data is too costly or difficult to collect but an issue is important to include, there may be other approaches. For example, greenhouse gas emission assessments will be too costly and time-consuming to fall within the scope of this project. However there may be existing studies that could be used, e.g., transport emission data. Or there may be no data on food waste, but instead successful initiatives could be described as case studies and further analysis done to explore opportunities for improvements and changes. In this case it will be important to view this exercise as a "rapid appraisal" rather than a robust scientific study and therefore to make use of interviews and focus groups to gather data.

4. **Spatial location of data:** It will be important to be able to geographically link specific indicator data collection and analysis to specific areas in the city as a basis for further territorial planning.

5. **Gender dimension:** The further development of CRFS indicators should take into account different sustainability dimensions including gender, urban resilience and youth employment. With support of the CGIAR Water, Land and Ecosystems Research Program (WLE), RUAF, IWMI and CIAT will apply a specific gender lens to further development of the framework and the development of methodological guidelines on data collection and analysis.

Conclusion

The final goal of a CRFS analysis and indicator/data collection is to advance CRFS policy design or strategy planning. Collection of baseline indicators may act as a useful trigger for improved action and policy; the "neutral" appearance of data and research presented provides an entry point for food to be considered on the policy agenda. As well, indicators can play a useful role in order to allow for monitoring and improving performance and progress in terms of programme and policy implementation.

For example, from the Utrecht region (the Netherlands) perspective, there is a gap in the production of regional vegetables, meat and eggs. Fruit and dairy production is more locally present and provides opportunities for a regional market. One of the policy recommendations is to better match local supply and demand. This requires enhancing demand for local food, support to regional production, processing and marketing, and improved coordination between urban food demand and supply of regional food products from farm businesses located in surrounding municipalities. Relevant indicators include:

- number of farm businesses in the Utrecht region, by type, that produce explicitly for the Utrecht region;
- number of farmers' markets in the Utrecht region;
- percentage of the population in Utrecht that always/often buys regional food products; and
- proportion of food procurement expenditure by public institutions on food from shorter (local/regional) supply chains.

In Quito (Ecuador), targets were set for the different envisaged outcomes of the territorial food strategy. (Baseline) indicators were defined for each of the targets, including:

- types of food products and volumes imported (from outside the city region) compared with similar types of product volumes produced in the city region;
- total surface area of current and potentially available currently vacant land within the Metropolitan District of Quito used for urban and periurban and rural agriculture land;
- number and percentage of children suffering from chronic malnutrition (per income group);
- presence of an active multi-stakeholder food policy and planning structure;
- existence of a food supply emergency/food resilience management plan for the municipality (in response to disasters; vulnerabilities in food production, transport, access; socio-economic shocks, etc.) based on vulnerability assessment;
- costs of a nutritious food basket at city/community level; and
- number of jobs in the food sector.

For policy outreach and planning purposes, it is important to consider the presentation and visualisation of data collected and how these findings are communicated with policymakers. In Colombo (Sri Lanka), Kitwe and Lusaka (Zambia), data collected in the assessments were georeferenced and mapped to better visualise and understand the CRFS and its spatial distribution and dynamics. In Utrecht and in Toronto (Canada), key data and figures were summarised and visualised for different parts of the food system, for example to bring to the forefront key food system contributions to job creation, GHG emissions or health impacts.

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Note

This CRFS Indicator Framework is part of the CRFS toolkit to assess and plan sustainable city region food systems. The toolkit has been developed by FAO, RUAF Foundation and Wilfrid Laurier University with the financial support of the German Federal Ministry of Food and Agriculture and the Daniel and Nina Carasso Foundation.