



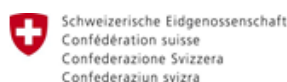
Swiss Programme for Research  
on Global Issues for Development

# Towards food sustainability: Reshaping the coexistence of different food systems in South America and Africa

Working paper No 3: Contents and Indicators of the Food Sustainability Assessment Framework (FoodSAF)



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**Citation:**

Rist, S., Jacobi J. 2016. Towards Food Sustainability: Reshaping the coexistence of different food systems in South America and Africa. Working paper No. 3: Contents and Indicators of the Food Sustainability Assessment Framework (FoodSAF). R4d programme and Centre for Development and Environment (CDE), University of Bern.

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**Publisher:**

CDE, University of Bern

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This project is funded through the Swiss Programme for Global Issues on Development (r4d programme) funded by the Swiss Agency for Development and Cooperation and the Swiss National Science Foundation [Grant number 400540\_152033] with additional support from CDE (Centre for Development and Environment), Bern, Switzerland

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In light of global challenges the Swiss Agency for Development and Cooperation (SDC) and the Swiss National Science Foundation (SNSF) launched in 2012 the joint «Swiss Programme for Research on Global Issues for Development» (r4d programme). The main goal of the r4d Programme is the generation of new knowledge and the application of research results that contribute to solving global problems and securing public goods in low- and middle income countries within the framework of global sustainable development. The r4d programme consists of six modules, five with thematic priorities and one for thematically open calls.



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## Contents and indicators of the Food Sustainability Assessment Framework (FoodSAF)

### Background

This report provides “a detailed outline of the content of the Food Sustainability Assessment Framework (FoodSAF) and the specific indicators to be used”. It presents an ex ante rationale and structure for the FoodSAF, including proposed indicators of the tool.

### Structure, contents, and indicators of the FoodSAF

The FoodSAF will be a major project output that synthesizes the main conceptual, methodological, and empirical results of the first three years and translates them into an instrument for use by practitioners (see pages 2 and 13 of the full proposal). The FoodSAF will be arranged in six chapters. It will enable users to design a sustainability assessment of individual and/or coexisting food systems and explains the “why, who, what, which, where, and how” of this process (see Figure 1).

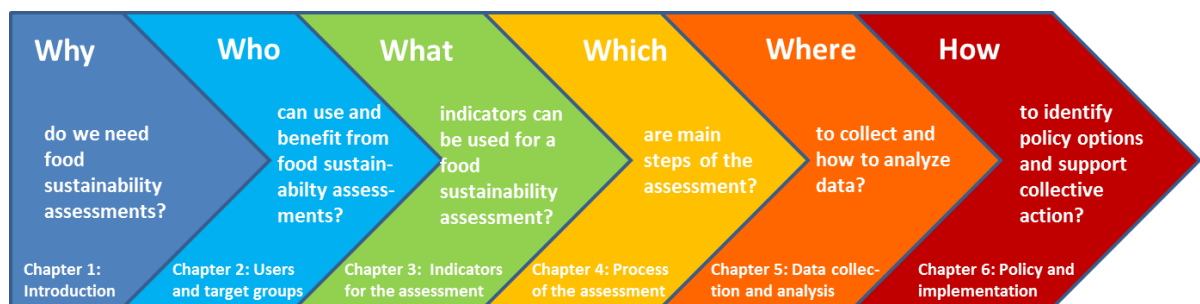


Figure 1: Structure and basic questions addressed by the FoodSAF.

We define food systems as networks of stakeholders (e.g. companies, financial institutions, farmers, public and private organizations) that shape flows of goods and services related to the nutrition needs of one or more groups of consumers in a given geographical area<sup>1</sup>. The assessment of food systems is operationalized by looking at the four subsystems concerning value chains, the natural resource base, information and services, as well as public and private policies<sup>2</sup>.

We further examine how food systems coexist. Food systems may interact and coexist for example by sharing the same natural resource base in a given area (e.g. land used by both pastoralists and farmers); by sharing required information or credits; by benefitting from the same private or public

1 Rastoin JL, Ghersi G. 2010. Le système alimentaire mondial: concepts et méthodes, analyses et dynamiques. Collection Synthèses. 2010, Editeur Quae, Paris (we refer to pp. 19).

2 For details, see: p. 3 of Working Paper No 2

policy incentives; by sharing aspects of their value chains (e.g. use of mills, lorries); or by selling food from different food systems (e.g. organic versus conventional) in the same supermarkets.

## Chapters of the FoodSAF

**Chapter 1 - Introduction:** This chapter explains the need for evaluation of food systems in the context of sustainable development. It includes:

- An explanation of the key concepts, in particular food sustainability, food systems, and related subsystems.
- An overview of general principles and aspects that one must consider when carrying out a sustainability assessment. This includes being aware of the strengths and weaknesses of specific conceptual and methodological choices; ensuring proactive, transparent communication on the intentions, scope, and limits of the assessment; and securing broad participation among all concerned actors<sup>3</sup>.
- A review of other tools for assessing the sustainability of food systems and detailed explanation of what makes the FoodSAF distinct and innovative; this includes highlighting that the FoodSAF looks at entire food systems rather than focussing solely on individual parts (e.g. food value chains, specific forms of production or processing such as organic or fair trade, voluntary standards, or food quality issues; (2) examines interactions between different food systems; (3) ensures the applicability of the framework for practitioners; and (4) includes actors with different (even conflicting) interests when formulating and promoting policy options on the transformation of food systems towards sustainability.

**Chapter 2 - Users and target groups:** The main intended users of the FoodSAF are practitioners, e.g. public administrators, consultants, members of non-governmental organizations, and staff of private or public companies. It will provide them with information about how to carry out a hands-on assessment of the sustainability of food systems. This includes:

- Describing how the practitioners can use the framework and how they or other actors can benefit from it. This part also includes information about the types of basic **knowledge, skills, materials and financial resources, and time required** to adequately apply the FoodSAF.
- Proposing possible target groups that could benefit as active partners of a food sustainability assessment. This includes indication of the **principles and practices that users of the FoodSAF should consider in their interaction and communication with potentially conflicting actors in a food system** (e.g. landless people, smallholders, and large-scale landowners). Recommendations are provided regarding how to apply the FoodSAF in order to support social learning processes and collective action based on principles of openness, transparency, consultation, consent, participation, and proactive communication.

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<sup>3</sup> Pintér L, Hardi P, Martinuzzi A, Hall J. 2012. Bellagio STAMP: Principles for sustainability assessment and measurement. *Ecological Indicators* 17: 20-28.

**Chapter 3 - Indicators for the assessment of food systems:** The chapter introduces the following working definition of food sustainability indicators: *Food sustainability indicators provide specific information on how the conditions and interactions of the four subsystems of a food system (value chains, political context, natural resource base, information and service provision) translate into realization of the five principles used for defining food sustainability.*

This is followed with descriptions of the key indicators used by the FoodSAF, taken from the list of Working Paper 2 “Selection of food systems and methods of analysis in Bolivia and Kenya”<sup>4</sup>. In the section below, each of the text segments written in italics refers to a “principal indicator”, which is an aggregate indicator, expressed in ordinal values in the overall assessment. The information in brackets refers to sub-indicators and provides additional information about the types of qualitative and/or quantitative data that are used to determine the ordinal value of each principal indicator. The proposed indicators for evaluating the sustainability of individual food systems are as follows:

- **Food security:** Share of food secure food system actors (including sub-indicators for access, availability, utilization or stability of food). This principal indicator solely refers to those food system actors whose livelihood systems are directly related to the main value chains of the food systems under analysis.
- **Right to food:** Share of food system actors benefitting from the fulfilment of the state’s obligation to protect the right to food (including sub-indicators for people’s ability to claim the right to food, e.g. by peasant organizations, trade unions, consumer associations etc.; constitutional and legal context with regard to local authorities, programmes in place, etc.).
- **Poverty and inequality:** Share of food system actors living above relative poverty lines (including sub-indicators for the economic status of other members of the local society, equality of incomes, land tenure, access to productive resources, labour conditions and wages). This indicator refers only to those food system actors whose livelihood systems are directly related to the main value chains of the food systems under analysis.
- **Environmental performance:** Effects of food systems on the quality of the resource base of food systems and the wider environment (including sub-indicators relating to soil and water, biodiversity, as well as greenhouse gas emissions and waste, with information on use of agrochemicals, machinery, transport, diversity of landscapes and agrobiodiversity).
- **Social-ecological resilience:** Resilience of the food system (including sub-indicators referring to buffer capacity, self-organization, capacity for learning and adaptation, containing also information on the diversity of landscapes, crops, and foods produced and consumed; aspects of economic organization such as self-employment, cooperatives, wage labour, diversity of income sources; knowledge and access to information about short-, medium-, and long-term dynamics of the environmental, economic, and political context in which food systems operate).

**Chapter 4 - The process of a food system assessment:** This chapter presents the main steps of a food sustainability assessment based on the indicators presented in chapter 3. These steps include:

- **Step 1 – Food system mapping.** Users are guided through a qualitative description of relevant food systems. This is done on the basis of participatory mappings, which capture

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<sup>4</sup> Rist, S., Jacobi J. 2016. Towards Food Sustainability: Reshaping the coexistence of different food systems in South America and Africa. Working paper No. 2: Selection of food systems in Bolivia and Kenya and methods of analysis. R4d programme and Centre for Development and Environment (CDE), University of Bern.

key features of the four subsystems of food systems and possible interactions between them.

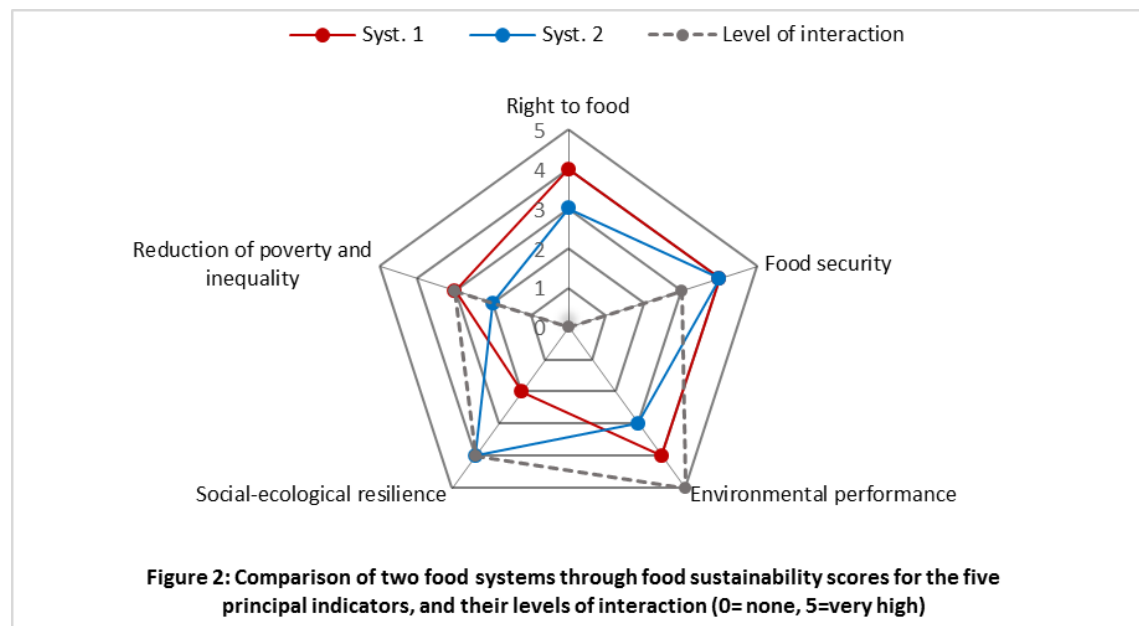
- **Step 2 – Analysis of main features of individual systems.** Users are guided through a process of further deepening and verifying information gathered in the mapping exercises, employing methods found relevant in the research phase of our project. This will enable FoodSAF users to determine the main features of the four subsystems of the food systems, namely: key food value chains, the natural resource base, information and services, and the most important public and private policies affecting the food systems.
- **Step 3 – Selection of food sustainability indicators.** Based on the list of indicators presented in chapter 3, FoodSAF users are guided through a process of reviewing the relevance of each of the proposed indicators. This serves to confirm use of existing indicators and/or to derive complementary indicators based on the specificities of the food systems under assessment.
- **Step 4 – Assessment of interacting (coexisting) food systems.** After assessing the individual food systems via the above indicators, the next step concerns the interactions between coexisting food systems. FoodSAF users are guided through a procedure to determine the degree to which relevant food systems interact, including: use of the same natural resource base in a given geographical area (e.g. upstream versus downstream water use, use of common forest or pasture); use of the same labour pool (e.g. contract farmers, wage workers); shared input supply chains (e.g. seeds, pesticides, information, extension services, credits); shared processing facilities (e.g. mills, silo facilities, oil-producing factories) or marketing channels. The assessment will enable users to rank the level of interaction on an ordinal scale (from zero to very high) for each of the five dimensions of food sustainability.
- **Step 5 – Identification of existing information and knowledge gaps.** In this step, FoodSAF users are given guidance in striking a balance between using existing data and filling critical information gaps. An included checklist enables users to identify the human, financial, and temporal requirements for a successful food sustainability assessment. This provides a basis for organizing data collection based on primary (fieldwork and individual data gathering) and secondary (literature-based) sources.

**Chapter 5 - Data collection and analysis.** This chapter concerns the procedure for collecting and interpreting information. This includes:

- **Data collection.** Based on the results of chapters 3 and 4, FoodSAF users are guided through the selection of the most appropriate data-collection methods. This includes guidance on how to implement case studies or small surveys in order to obtain necessary information regarding the four subsystems of food systems: value chains, the natural resource base, information and services, and public and private policies. It covers description of methods for use in collecting the information required to determine the food sustainability indicators outlined in chapter 3.
- **Interpretation of data.** This part describes a procedure for interpreting data from primary and secondary sources (fieldwork and review of existing documentation). Based on the selected indicators, we show how quantitative and qualitative data can be combined to assess the five dimensions of food sustainability. This includes demonstrating how qualitative-narrative and quantitative-numerical data can be brought together and given ordinal values, making it possible to rank and compare food systems according to the five dimensions of food sustainability. The results of the sustainability assessment of individual food systems may be illustrated in spider diagrams (see Figure 2). These diagrams provide an overall

picture of sustainability performance, enabling discussion and identification of priorities in the effort to make food systems more sustainable.

In the case of interacting (coexisting) food systems, the following procedure is used: For each of the five principal food sustainability indicators of individual food systems, we estimate to what degree it is influenced by interactions with other food systems (outlined in chapter 4, step 4). The results of this analysis of interaction (coexistence) between food systems can be displayed in the same spider diagram showing the food sustainability indicators of individual food systems. The levels of interaction are also ranked using ordinal numbers ranging from “no interaction (rank 0)” to “very high interaction (rank 5)”; these ranks are specified and displayed for each principal food sustainability indicator (see Figure 2).



## Chapter 6 - Policy and implementation

This chapter supports FoodSAF users and target groups, arranged into focus groups, in jointly analysing key governance problems behind food sustainability scores seen as in need of improvement. It provides a basis for identifying, discussing, and agreeing upon leverage points to make food systems more sustainable. These may include institutional, financial, technical, or socio-cultural innovations. Guidance will be provided on ways of organizing collective action to promote and implement identified policy options, illustrating results from the research phase of the project.



