CLIMATE-RESILIENT VALUE CHAINS AND FOOD SYSTEMS

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Using Process-Based Indicators to Help Design Effective Policies on Food Security in the Context of Climate Change

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This **Briefing Note** is targeted at policy-makers that are engaged in designing and implementing policies to improve food security. It provides a series of indicators that policy-makers can use to assess the key features of their policies so they maximize their benefits in improving food security. The indicators are based on relevant policies in Guatemala, Honduras and Nicaragua.

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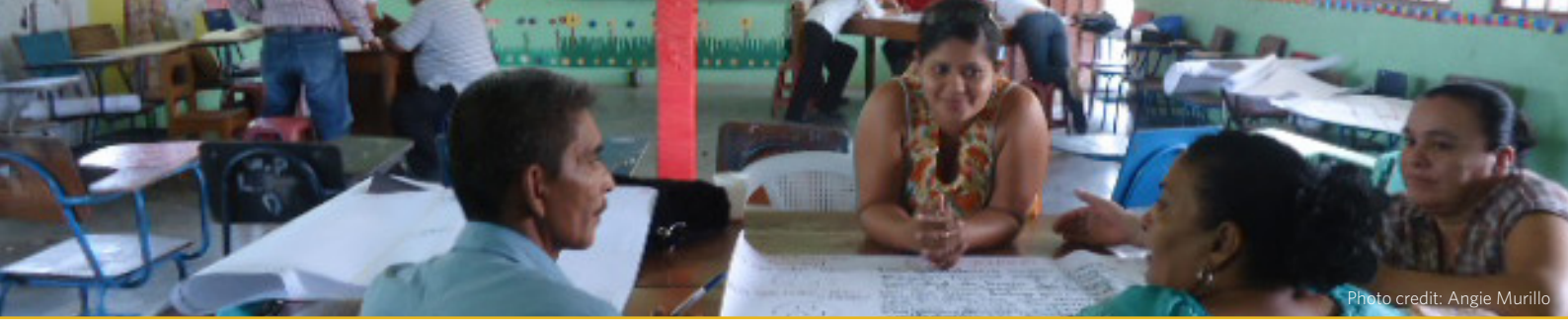
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Key Messages

There are a number of key characteristics that help to ensure that policy support for food security in Central America is effective. These characteristics are presented here as a series of process-based indicators that can be used as a checklist to guide policy development. The following key areas have to be monitored by indicators to ensure policies support food security in the context of climate change:

- Creating participatory processes that are inclusive and effective to inform policy design and evaluation instead of ad hoc participation that often leads to further distrust toward government agencies.
- Empowering local decision-makers by providing them with decision-making powers, as well as technical and financial capacities to implement policies on food security, as they are the best equipped to shape policies to local needs.
- Changes in the institutional cultures of departments and government agencies at all levels are necessary to ensure that policy reviews are part of the policy development and implementation cycle.
- Policy assessments and reviews can be formalized by using tools such as the Food Security Indicator and Policy Analysis Tool (FIPAT) to help policy-makers work through a series of steps in a structured manner.

Introduction

Climate variability and change threaten food security both directly—for example by reducing crop yields—and indirectly—by disrupting the systems and infrastructure that people use to access food. To develop a better understanding of the complex linkages between food security and climate change, it is important to look at the whole food system. Core elements of the food system include how people access and process food, the quality of their diet—described as food utilization—and food availability. However, it is important to not only focus on these core elements but also to include specific contexts, such as available environmental resources, infrastructure, social interactions, political leadership and governance systems. We used a framework that brings together supportive and core elements of the food system visualized in spinwheels that expand the focus outside the core elements and look at supporting natural systems, infrastructure and supporting policies. Once the key elements of the food system are identified, a series of questions is used to assess the level of their resilience (Figure 1).

When designing policies to improve food security, it is crucial that they aim at strengthening different aspects of the food systems—from access to the food community to ensuring the development of the proper infrastructure needed to grow, store, process and distribute food at larger scales. Finally, policies aiming to improve food security have a crucial role in ensuring that the capacities and institutional factors are in place to enable organizations and people to operate effectively to facilitate food system resilience.

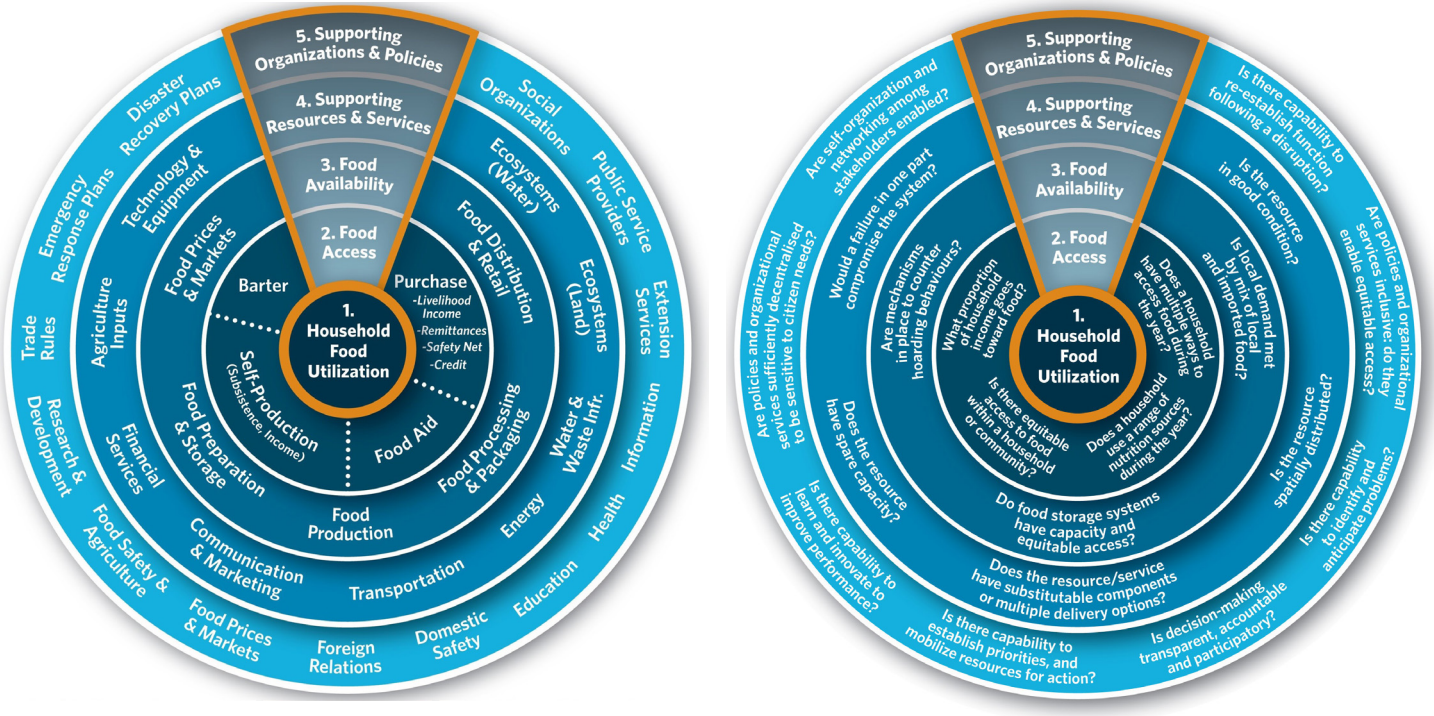

FIGURE 1. FOOD SYSTEM AND RESILIENCE ANALYSIS

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Monitoring Indicators of Food Security and the Resilience of Food Systems

The monitoring of food security has long been a priority of international and national agencies,[1] and the focus is often on food security at the household and community levels. This process includes:

- A focus on the prevalence of undernourishment by collecting data and estimating the food intake adequacy with reference to the dietary energy requirement.[2]
- Measuring living standards through household surveys (de Haen, Klassen, & Qaim, 2011).
- Using anthropogenic measures to assess food insecurity based on to the height and weight of individuals (de Haen et al., 2011).
- A combination of indicators, such as the Household Food Insecurity Access Scale (HFIAS) with its three domains: (1) perceptions of insufficient quantity of food, (2) perceptions of inadequate quality of food and (3) anxiety or uncertainty about whether the food budget or supply is adequate to meet basic requirements (Swindale & Bilinsky, 2006, cited in Maxwell, Caldwell & Langworthy, 2008).
- Using the Core Food Security Module (CFSM) to identify the extent and severity of household food insecurity over a one-year period (Derrickson & Rown, 2002).

These monitoring efforts provide insights into key indicators of food utilization and access that help design measures aimed at improving food security at the local level. However, with the suggested system perspective of food security introduced by the spinwheels, other aspects such as the availability and status of natural resources and built infrastructure and the effectiveness and relevance of developed supporting policies and institutions become important to monitor.

Monitoring indicators can range from input indicators to process, output and outcome indicators. Development agencies have traditionally focused primarily on outputs (e.g., the number of cook stoves installed) since they have less control over outcomes. The outcome indicators are often difficult to attribute to actions, as there could be a number of contributing factors leading up to the outcome. This is particularly true for resilience because, as an intrinsic property of systems, it is not really visible until a disaster occurs. Covering the gap between outcome and output indicators, process-based indicators have been proposed to serve as proxies for potential outcomes of implemented actions and policies. Process-based indicators aim to describe decision-making processes, institutional capacities, knowledge management, integration of information (including scientific and traditional) and approaches to inclusion and representation. In other words, these indicators look at key characteristics needed to make sure that decisions are implemented well to ensure the desired outcomes

[1] Among these agencies are the World Food Programme (http://www.wfp.org/food-security/assessments/food-security-monitoring-system) and the Famine Early Warning Systems Network (http://www.fews.net/).
[2] For a food security methodology, see http://www.fao.org/economic/ess/ess-fs/fs-methods/fs-methods1/en/


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The Food Security Indicator & Policy Analysis Tool (FIPAT)

To identify a set of output- and process-based indicators focused directly on the policy performance, a standardized Excel-based Food Security Indicator & Policy Analyses Tool (FIPAT) was developed and applied at subnational levels in Guatemala, Honduras and Nicaragua (see Box 1).

Through the implementation of the FIPAT tool, several indicators were designed to help monitor the resilience of food systems and track the extent to which public policies support that resilience and the capacity of actors to build it.

The tool was successfully implemented in the three focus countries, and the following policies were assessed:

- Guatemala: National Capacity in Development and Technology Transfer; Reducing Vulnerability, Enhancing Adaptation and Risk Management; and Mitigating Greenhouse Gases (plans under the National Climate Change Strategy)
- Honduras: National Strategy on Climate Change
- Nicaragua: Forestry Development Strategy; Food Security and Nutrition Act. No. 693

BOX 1. DEVELOPING INDICATORS WITH THE FIPAT TOOL

FIPAT provides users with a structured guide to measure the resilience of a national or subnational food system to climate shocks and stresses, and to evaluate a suite of public policies and programs on their ability to contribute toward the resilience of food systems and key actors within such systems. In a participatory manner, FIPAT produces specific indicators that help monitor the resilience of food systems along with recommendations for improving the resilience impact of key policies. The tool is based on IISD's ADAPTool,[a] which provides an assessment process that compares existing policies and programs set out through previous research.

Specifically, FIPAT provides a logical sequence of analytical steps that help users to:

- Identify key elements within a food system and their vulnerability to climate shocks and stresses.
- Identify relevant resilience actions to strengthen these vulnerable elements.
- Select indicators to monitor changes in food system resilience over time.
- Assess the extent to which public policies support the implementation of required resilience actions, the capacity of actors to reduce risk and promote resilience, and the creation and maintenance of food system resilience.

[a] See the ADAPTool at http://www.iisd.org/foresightgroup/adaptool.aspx/


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Process-Based Indicators to Measure Key Aspects of Policies and Programs Supportive of Resilient Food Systems

The applications of the FIPAT tool generated a set of indicators focusing on the characteristics of relevant government policies, programs and processes used in policy development crucial for designing a good policy that ensures food security. The involved policy-makers and other stakeholders recognized the importance of process-based indicators to deliver useful information on the design and implementation of policies and programs (Box 2) for food security.

BOX 2.OVERVIEW OF IDENTIFIED PROCESS-BASED INDICATORS

Vulnerability of policy against climate hazards

- Number and types of meetings and capacity-building sessions to ensure that the relevant government officials have a good level of comprehension and knowledge about the regulations and policies relevant for food security.
- Number and types of policies/strategies in which the mainstreaming of policy on food security was completed.

Build resilience to specific parts of the system (resource/service)

- Number of policies whose priority is ensuring universal access.
- Number of objectives complementary to relevant policies to ensure an integrated approach to resource management (e.g., to water resource management, land management).

Transparent and responsible decision making

- Number of publicly available policy assessment reports.
- Number and types of physical or virtual portals to access information on policy decisions and reviews.
- Number and types of mechanisms in place for actors to provide regular inputs or opinions on the implementation and usefulness of the policy.
- Number and types of annual forums to discuss and evaluate the policy's progress with stakeholders.
- Number and accessibility of social audits; audits (modes of dissemination by local office, online, mail).

Multistakeholder participation in design and implementation

- Number of targeted participants from different social groups to ensure well-represented participation of stakeholders in consultations for design and implementation of policy.
- Number and types of regular consultations bringing together sectoral representatives (e.g., agriculture, rural development, trade, forestry, infrastructure development).

Ability to apply lessons learned and avoid repeating failures and support best practices

- Number of capacity-building workshops on prevention, mitigation and risk management and how to access necessary resources.
- Ability of the early warning systems and meteorological stations to cover the focus area and provide timely information.
- Number of forums and networks that promote the share of best practices.

Decentralization to the most effective level

- Number and types of resources (including budget) available to regional offices/governments to use for local needs.
- Types and location of regional committees that feed local information/needs to central office (frequency and type of information provided to the local level).

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Lessons Learned and Conclusions

Based on the collected indicators, there are a number of key characteristics that policies and planning and decision-making processes need to have in place in order to ensure that policy contributes effectively to food security. Stakeholders recognize the importance of measuring efforts to use transparent and participatory planning and policy review processes to ensure that relevant stakeholders' groups are consulted. Specifically, stakeholders are able to see how their participation has influenced decision making through publicly accessed information, including reports, and general socialization of policies. These measures, however, need to be congruent with policy-level efforts to be proactive in managing risks and building resilience—for example, by integrating best practices on resource management, risk mitigation and effective ways of participation, and by focusing on strengthening the local systems instead of being reactive by focusing on disaster mitigation and addressing emergencies through food aid. In order to be proactive, the use of forecasts and other information to adjust policies and the use of integrated management systems to water and land resources were seen as key contributions of policies to building resilient local and regional systems that ultimately create resilient food systems.

Other key characteristics that need to be measured and monitored with indicators are the nature of decision-making approaches and institutional capacities that contribute to the successful implementation of key plans and strategies at the local level. The listed indicators highlight the importance of creating decentralized decision-making systems that allow local policy-makers to implement actions when and how they are needed, as they have the best knowledge of the local situation. Similarly, consultation processes need to ensure the participation of local actors. Finally, local policy-makers need to have access to monitoring data and systems, available financial resources and technical capacity to implement actions. The importance of financial resources was stressed in general but also in the context of implementing a climate change adaptation project to reduce the negative impacts of climate change on food security.

A substantial share of the identified indicators focused on looking into the involvement of vulnerable groups in capacity-building sessions and into consultation processes on key plans and strategies, especially those dealing with emergency management. For example, some indicators include: a number of targeted participants from different social groups to ensure thorough representation of stakeholders; a number of capacity-building workshops on how to access prevention, mitigation and risk management and how to access necessary resources; and a number of forums and networks that promote the sharing of best practices. Participants felt that unless there are efforts made to include vulnerable groups, they are often left out. As a result, their needs and challenges, which differ from the rest of the community members, are ignored.

Finally, the policy assessment using the FIPAT tool in Central America showed that involved policy-makers see the policies as dynamic instruments that have to change as needs, systems and other supporting policies change. They feel that an effective and transparent policy review is necessary to ensure that the policy appropriately addresses the needs of local communities. During the application of the tool, policy-makers often felt threatened, expressing that negative outcomes of the assessment could lead to negative performance reviews, budget cuts and, ultimately, even job loss. It is critical to change such institutional cultures, as an openness to sharing reviews and working with diverse stakeholder groups is essential (or should be essential) to the policy-making process, to ensure that policies are resilient in the face of climate change and other challenges.


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Key Recommendations

Finally, we would like to conclude with a few characteristics that our research demonstrated to be crucial to creating effective policies to ensure food security in the context of climate variability and change:

- **Create an open and inclusive environment in policy-making processes** to effectively inform policy design and evaluation instead of ad hoc participation that often leads to further distrust toward government agencies. During these processes, it is important to ensure that vulnerable groups take part in the design and implementation of many food security policies, specifically those that seek to target the poor and marginal groups. These groups are often already marginalized in government and other agencies' participatory processes.
- **Increase participation and knowledge of vulnerable groups by using monitoring indicators that focus on involvement in, participation in and access to support services**. For example, stakeholders' participation in capacity building on land management and consultation in emergency preparedness planning are crucial as they often have limited access to decision making and services.
- **Empower local decision-makers** by providing them with decision-making powers, as well as technical and financial capacities to implement policies on food security, as they are the best equipped to shape policies as local needs are changing. Local decision-makers are key to guiding consultation processes to ensure the involvement of local groups that are vulnerable to food insecurity.
- **Changes in the institutional cultures of departments and government agencies at all levels are necessary** to ensure that policy reviews are part of the policy development and implementation cycle. This will ensure that policies are adjusted when circumstances, such as climate change impacts and/or other challenges, change.
- **Finally, policy assessments and reviews can be formalized by using tools such as FIPAT**. This tool can help policy-makers to work through a series of steps in a structured manner. The FIPAT tool can be applied by other countries and regions; however, it would require up-front capacity building to make sure that all the involved policy-makers know how to use the tool and understand the terminology.

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