

# From Famine Relief to Resilient Food Systems

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Resilience has become a key concept in recent years greatly contributing to breaking the ‘silo thinking’ between development and humanitarian work. Today, there is a growing trend towards policies to address vulnerabilities of people to natural and manmade food crisis by a more systemic, multi-sector approach and joint programming. This article presents the experience of HELVETAS Swiss Intercooperation in Wag-Himera, Ethiopia, in fostering community resilience to the impacts of climate change and food crisis. The example illustrates how even in vulnerable contexts, resilience can be addressed through a set of measures that complement each other, linking relief, rehabilitation and development.

## What are resilient food systems?

Resilience has been embraced as an overarching theme by both the international humanitarian and development communities in recent years. It is based on the recognition that people are part of larger systems such as ecosystems, markets, and social networks that are constantly in flux with feedback loops between them. Resilience is understood as the ability of individuals, communities or systems to

- 1) cope with and absorb the impacts of shocks (events) and trends (stresses) without sustaining permanent harm or damage (absorptive capacity),
- 2) adjust and adapt to trends and events while still functioning in broadly the same way (adaptive capacity), and
- 3) change the system fundamentally when its current modus operandi are no longer viable (transformative capacity).

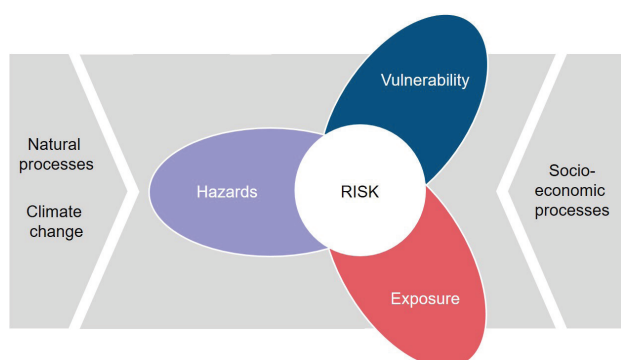


Figure 1: The three dimensions of risk (adapted from IPCC)

Resilience is thus the ability to deal with risks. Risks are the outcome of three factors: the hazard, the exposure to it and the nature and degree of vulnerability (Figure 1). Uncertain rainfall for example is a hazard to which rainfed farmers are particularly exposed. Families who only engage in rainfed farming, with no diversified income source, are most vulnerable to the hazard. People’s assets and capabilities are decisive in building resilience and reducing their vulnerability to shocks and trends. For example, households who have access to wells for protective irrigation can bridge dry spells (i.e. have absorptive capacity). Families who learn to grow drought tolerant crops or who invest in non-farm activities can enhance their adaptive capacity and reduce their vulnerability to erratic rainfall in future years while families that have members working in urban centres or abroad can transform their livelihoods with wise investments of the remittances. Resilience can thus be built through measures that modify the hazard, such as land-use practices that may trigger hazards, by reducing exposure and the vulnerability to a hazard as also by building assets and capabilities of people and communities.

Food and nutrition security is the outcome of several processes related to production, processing, distribution, preparation and consumption of food that are in turn influenced by factors such as environment, people, inputs, processes, infrastructures and institutions. It is important to recognise that food systems are complex, with interdependent elements and feedback loops. Resilient food systems would be

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those that have the ability to provide sufficient, accessible and nutritious food to all today and in the future in spite of various, unforeseen disturbances and trends. They are able to recover quickly and flexibly and to adapt themselves to changing environments. Figure 2 below shows the climate and non-climate related drivers of change that food systems face and the possible areas of response.

The following chapters will illustrate concrete approaches towards resilience building at the interface between humanitarian aid and development, drawing upon the work of HELVETAS in Ethiopia.

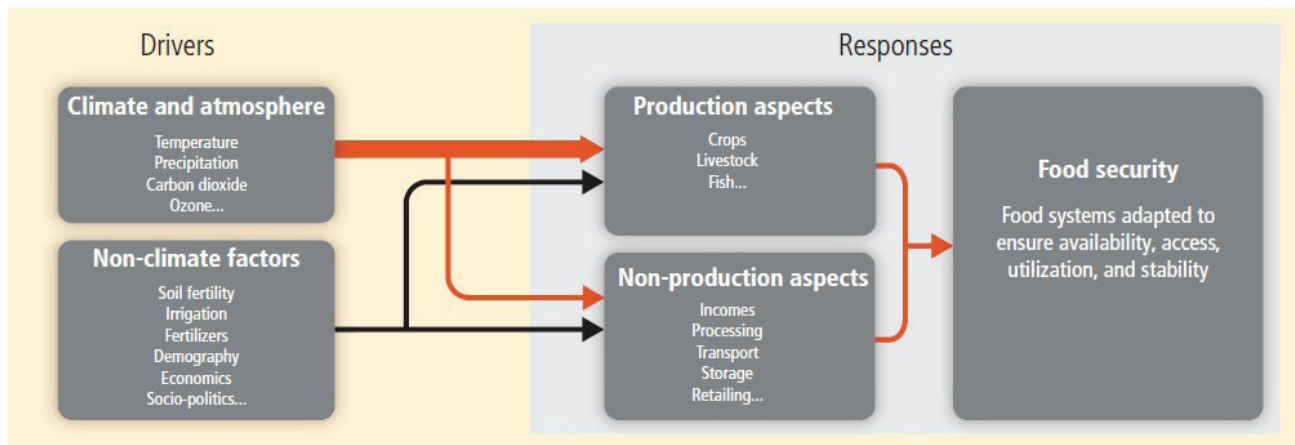


Figure 2: Climate and non-climate related drivers of change in Food Systems (IPCC, 2014)

## Resilience of food systems in the context of food crisis and recovery – what and how?

Food crises are not only nature-induced but are often anthropogenic and are thus more complex. They are often a combination of low food system productivity, fragmented markets, weak government institutions, inadequate policies, the lack of basic infrastructure and services, and political conflicts that can exacerbate the effects of climatic events such as droughts or floods. Babu et al. (2017)<sup>3</sup> further point to the lack of institutional memory and learning that would be crucial for resilience building: “When the threat of famine subsides, many (...) governments, NGOs and development partners return to whatever they were doing before famine struck – running projects, fighting local political adversaries, etc. – instead of doing the work needed to avert or mitigate the next famine threat.”

Over the past years, the concept of resilience has greatly contributed to breaking the silos between humanitarian and development actions and to foster policies that address the complex causes of vulnerabilities and food crisis by a systemic, multi-sector approach and joint programming. The Rome based agencies for example developed a joint approach towards resilience building in food and nutrition security<sup>4</sup>. A lot remains to be done though to put such policies into action. Discussions at the recent Alliance 2015 Round Table on Resilience, Hunger and Poverty in Dublin<sup>5</sup> showed again that despite the recognized need for integrated and flexible programming, implementation often fails due to the de-facto persisting procedural and administrative barriers in donor and implementing agencies. It is also broadly agreed that a long-term investment in resilience-building “across the silos” greatly increases the cost-effectiveness of interventions related to recurrent crisis, since they reduce the financial, administrative and resource burdens of responses. In the Grand Bargain report 2016<sup>6</sup> recommendations were formulated how to address these issues. Some donors have made ef-

forts since to develop innovative, flexible funding mechanisms. SDC’s project Sustainable Natural Resources Management for Enhanced Pastoralist Food Security in the Borana Zone (Ethiopia), for example, integrates a contingency fund for humanitarian aid. In times of crises, the project can activate this fund and engage in emergency work through a close nexus to its general development work.

During a crisis, humanitarian measures such as food distribution or cash transfers are valuable means to support the absorptive capacities of communities and to avoid negative coping strategies such as reducing the number of meals or selling cattle. Beyond this, responses to food crises and famine are beginning to incorporate resilience-building measures and long-term development efforts into relief actions. Many NGOs and UN agencies’ cash transfer programmes today combine provision of food or cash for work on the rehabilitation of assets and infrastructures such as restoration of degraded land, reforestation or the rebuilding of wells. Such approaches have the potential to meaningfully contribute to resilience building of local communities during food crisis, but only if they are based on 1) thorough analysis of vulnerabilities before a shock, 2) consideration of disaster risk reduction aspects, and 3) ownership and institutional capacities of local and national governments to programme and support such action and to embed it into wider development plans. The current practice however shows that in many emergencies, most recovery activities are programmed short notice and rather detached from integrated development plans.

Finally, while the provision of food or seed is an uncontested relief intervention to save lives in acute crisis, more attention is needed to ensure that such actions help foster food system resilience in the long run rather than undermining it. For example, the distribution of food through parallel structures established by aid interventions, instead of operating through existing market actors, can disrupt local food markets. They may cause a slump in local grain prices and the crowding out of existing food traders. This is particularly true for persistent relief aid. Dorosh and Chabot (2007) for example found that in Afghanistan, temporary food aid imports of relief programs did not have major price disincentive effects on domestic production, however continued

3 [www.ifpri.org/blog/strategies-preventing-recurring-famines-and-building-resilient-food-systems](http://www.ifpri.org/blog/strategies-preventing-recurring-famines-and-building-resilient-food-systems)

4 WFP 2015: Policy on Building Resilience for Food Security and Nutrition: [www.wfp.org/content/policy-building-resilience-food-security-and-nutrition](http://www.wfp.org/content/policy-building-resilience-food-security-and-nutrition)

5 [alliance2015.org](http://alliance2015.org); [spark.adobe.com/video/x56bPecJucUVm](http://spark.adobe.com/video/x56bPecJucUVm)

6 Too important to fail – addressing the humanitarian financing gap. High-Level Panel on humanitarian Financing – Report to the Secretary-General, January 2016.

food aid inflows proved to depress producer prices by 15%<sup>7</sup>.

IFPRI<sup>8</sup> highlights that national response systems need to promote resilience to respond to natural and manmade shocks. This is required to avoid repeated absorption of economic resources and institutional capacities for “fire-fighting” of recurrent crisis to rebuild national food systems, while losing ground on long-term developments. They propose to seize current emergencies to strengthen national capacities to protect vulnerable populations both in the immediate and the long term, addressing resilience in the triangle of food systems, policy systems and institutions.

### History of food crisis in Wag-Himera, Ethiopia

Ethiopia has shown over the past 30 years that with the right combination of investments and policies, the threat of famine can be significantly reduced. HELVETAS continues to support this development towards enhanced food systems resilience in Ethiopia.

Wag-Himera Zone in Amhara National Regional State in the Northern Ethiopian highlands covers six Woredas (districts) and one town administration with an area of 9,039 km<sup>2</sup> and a total population of 520,000. The altitude ranges from 3'715 metres to below 1'200 metres in the Tekeze Valley. The climate is predominantly semi-arid, with mean annual rainfalls ranging from 350 to 800 mm and a high variability of rainfall during the single rainy season (Keremt). Wag-Himera is characterized by very limited arable land (only about 17% of the land is suitable for crop production), fragmented land holding size with the majority of smallholders having less than 1 ha, and low productivity due to poor soil fertility. A mixed crop-livestock farming system prevails in the zone with the share of livestock increasing with decreasing altitude, since lowlands receive less rainfall and hence are less suitable for crop production.

Through the famines of 1973 and 1984, Wag-Himera Zone became well-known as an area of chronic food insecurity, high rate of malnutrition and severe environmental degradation. The 2011 East Africa

drought also left its deep impact on human and livestock wellbeing, and the 2015/16 drought, triggered by El Nino, was one of the worst faced by the zone in decades.

In general, the 2015/16 drought and food security crisis represents a sharp break in the mostly positive trends of Ethiopia's agricultural development and food security since the 80ies, when the country started to mitigate the risk of famines substantially. Between the 90ies and 2010, the Ethiopian government followed an Agricultural Development-Led Industrialization (ADLI) strategy, investing heavily in agricultural production and rural infrastructure<sup>9</sup>. The public investments in agricultural technology, expansion of road networks and infrastructures, better information flows and a functioning early warning system helped shorten the response time for emergency relief.

Moreover, the Government of Ethiopia created the Productive Safety Net Programme (PSNP) in 2005 which embraces food and cash transfers to the poorest and most food insecure households. Between 43 to 46 percent of the people in Wag-Himera are categorized as poor or poorest households and are eligible for support under PSNP.

Since 2013, HELVETAS, in close collaboration with the government of Ethiopia and other NGOs has been contributing to building capacities of the communities in the zone for enhanced resilience against climate change induced shocks and trends, with a key emphasis on enhancing food system resilience.

7 Chabot, Ph. and P. A. Dorosh (2007): Wheat Markets, Food Aid and Food Security in Afghanistan, *Food Policy* 32:334–53.

8 From Famine to Food Security, Policy Paper, IFPRI / April 2017.

9 International Food Policy Research Institute: [reliefweb.int/report/ethiopia/ethiopia-s-2015-drought-no-reason-famine](http://reliefweb.int/report/ethiopia/ethiopia-s-2015-drought-no-reason-famine)

## **Building food system resilience in Wag-Himera**

The natural resources base of the Wag-Himera zone has been severely deteriorated. The combination of the rugged topography, uncontrolled open access grazing and ploughing or hoe tilling in extremely steep slopes have led to severe degradation of soils, vegetation and watersheds. This has left the zone highly vulnerable to the impacts of climate change, in particular droughts and extreme rains.

With the objective to overcome the chronic food insecurity and repeated relief aid in the area, HELVETAS launched the Wag-Himera Rural Future Initiative project in 2013, founded on a strong partnership with the local government of Wag-Himera zone and community based institutions. The project was launched in all six districts of the zone, followed by a series of other projects, namely Disaster Risk Management through Improved Agriculture Solution project, the Drought Recovery and Climate Resilience project and the Wag-Himera Climate Adaptation and Rural Development project. Through this series or contiguity of projects, HELVETAS aimed to strengthen the capacity of local administrations, extension services, community based organizations and the private sector in order to develop and implement a coherent long-term strategy for resilience building based on environmental rehabilitation, adaptation to climate change and rural development. Key intervention strategies of the projects are 1) rehabilitation of severely degraded watersheds, 2) enhancing food security and agricultural productivity through improved farming and household asset building and 3) development of improved rural urban linkages and the establishment of value chains.

HELVETAS' experience in the zone shows that linking relief, rehabilitation and development or the LRRD approach enables multiple projects, working at different stages of the disaster cycle, to reinforce and complement their actions contributing to the resilience of highly fragile ecosystems and livelihoods such as in Wag-Himera. This approach is described in further detail below.

Since the start of its interventions in the zone, HELVETAS has built on its long standing experience of sustainable integrated rural development and combined it with relief elements as demanded by the context. HELVETAS' key entry point for enhancing food system resilience in Wag-Himera is sustainable

natural resources management combined with locally adapted improved agriculture solutions:

**Intensive hillside farming through bench terraces:** Since 2013, HELVETAS successfully initiated and promoted bench terraces as an effective soil and water conservation measure to repair and control the damaging impacts of ploughing in extremely steep slopes of Wag-Himera. Since 2014, bench terracing has been widely accepted and institutionalized by the zonal government as an effective measure to increase productivity and enhance food security. The Zonal authorities have incorporated bench terraces in their regular programme and are committed to mobilize other local and international partners to adopt and scale up the technology.

**Moisture conservation tillage:** Land tilling influences rainwater runoff, its infiltration and soil moisture conservation and is thus crucial in Wag-Himera where severe moisture stress is one of the major factors for low agricultural productivity. Contour ploughing, broad furrowing and tied ridging are effective means of conserving soil moisture and controlling soil erosion. HELVETAS, in collaboration with the Zone Department of Agriculture, introduced the Devean moisture conservation tilling device. Compared to conventional tilling, the new practice enhanced farmer's yields by 33 to 47 percent.

**Promotion of controlled grazing and fodder production:** Uncontrolled grazing is an important factor of soil deterioration. At the same time, availability of fodder is a key constraint for families to maintain their livestock through dry periods. HELVETAS, in collaboration with local partners, has promoted controlled grazing and cut and carry practices, through skill development and awareness raising and the provision of supportive grazing tools such as peg and rope for livestock tethering. A total area of 6,650 ha was protected from uncontrolled grazing by these measures. Further, more than 3 million multi-purpose tree seedlings were planted to boost the fodder sources and biologically stabilize the watersheds.

**Roof water-harvesting system:** In the absence of safe ground-water or springs, many families rely on unsafe surface water, endangering the health of entire communities. HELVETAS has developed the Kalamino Cistern as an innovative solution to overcome the severe drinking-water constraints. It is a reliable and affordable roof-water harvesting system, providing households with safe drinking water also during dry periods. The system is now promoted by the Government and other NGOs, and community members have come forward to adopt it themselves paying a considerable part of the costs.

**Effective homestead gardens:** Through the promotion of in-situ water harvesting structures, mainly ring basin infiltration pits and perma-gardening, vegetable and fruit production is boosted in homesteads. The horticulture produce not only generates additional income from marketable surpluses, but also enriches the diets of the families and enables consumption of diverse, nutritious food. This intervention is positively discriminated in favour of women, who are supported to develop homestead gardens, resilience using run-off water from their homes.

**Promotion of diversified livelihood options:** A set of carefully selected high value, nutritious and drought tolerant crops were identified and introduced to the beneficiary households. In addition, backyard poultry and beekeeping were strengthened – a valuable contribution to the families’ nutrition as well as a source of income to purchase supplementary food during periods of shortage. During the 2015/16 drought, as a part of recovery measures, HELVETAS promoted the Madagascar bean, a drought resistant, nutrient rich and high yielding crop. Within two months of planting, farmers could harvest their first crop. The bean is a significant contribution to the household nutrition. Due to its high market value, it has the potential to create alternative incomes through development of a value chain, thus fostering the transformative capacities of the communities in the mid and long-run. In 2018, the project will start promoting local seed production and seed banks of key food crops as an additional resilience building measure for local food production systems.



Figure 3: A woman accessing water at the homestead form kalamon-Cistern, Dehana, Wag-Himera Zone / Photo: HELVETAS / Patrick Rohr-2017



Figure 4: A couple working on the ring basin infiltration pit during dry season, Wag Himera Zone / Photo: HELVETAS / Patrick Rohr-2017



Figure 5: Ring basin infiltration pit, Dehana Woreda, Gaqiew village. Photo: HELVETAS / Firiehiwot Yibeltal-2016

**Emergency relief to absorb 2015/16 shock:** In order to meet the immediate needs of the target communities in Wag-Himera during the drought, HELVETAS launched a short-term emergency response project. The project provided families with drinking water, livestock feed and seed. The intervention aimed to sustain the absorptive capacities of the families helping them bridge the emergency situation without damaging the local resource base. This prevented people from slipping into extreme poverty and allowed them to continue on their development pathway soon after the crisis.

**Social and economic empowerment of women:** Across all projects, HELVETAS put an emphasis on the access of women to resilience building capacities and assets. The projects foster access of women to extension services for improved agronomic practices, effective low cost technologies and alternative options for income generation. This not only helped fostering women in their key role in household food and nutrition security, it also contributes to enhancing women's confidence to challenge traditional gender roles related to local food systems.

#### **What did we learn?**

The integrated approach across different thematic fields, at the interface between relief, rehabilitation and development, is based on strong partnerships with local governments and community based organisations. This helps ensure ownership, complementarity in our actions and long term sustainability. The programmatic approach enables multiple projects, operating at different stages of the disaster cycle, to reinforce and complement their actions contributing to enhancing food system resilience in the region at different levels.

Through soil and moisture conservation measures and drought tolerant varieties the projects enhanced the capacity of the communities to produce diverse foods locally and sustain production, to increase productivity and reduce harvest losses during dry spells. Measures against soil erosion combined with controlled grazing and fodder production helped in preserving and restoring soils, biodiversity and water resources – a precondition for resilience. In-situ water harvesting, perma-gardening, poultry and beekeeping contributed to a more diverse food basket and thus a better nutritional base for the families. At the same time, they created additional income

sources that help bridging lean seasons and mitigating future food crisis. The better access to safe drinking water from roof water harvesting and cistern systems reduces the risks of waterborne diseases, thus enhancing the nutritional uptake of the food consumed by children, women and men. Overall, more than 17'000 households have improved their access to food, hence reaching a total of roughly 100'000 people which is nearly 20 percent of the population living in the zone. Most importantly however, the projects successfully engaged the entire zone's administrative establishment, extension services, the civil society and local small enterprises to invest in resilience building. The adoption and replication of the knowhow, technologies and methodologies developed by these actors is the most essential guarantee that food system and climate change resilience building will continue to be pursued in the future.

At the same time, different challenges lie ahead. Given its multi-dimensional nature, measuring resilience is complex. So far, there are no widely accepted tools to measure resilience comprehensively. For food system resilience, measuring nutrition outcomes and their interlinkage with agriculture, water and sanitation will need more thorough attention in future. Furthermore, seeing the trend towards a dryer climate with erratic rainfalls and extreme weather events forecasted for Northern Ethiopia, the transformative capacities of communities in Wag-Himera and neighbouring zones should become a priority in the coming years. Not only do farmer communities need the capacity to further adapt their agricultural practices to a dryer climate, they also need alternatives for livelihoods that are less dependent on farming to generate income and ensure food security.