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# Food Security as a Policy Goal in the Complex Emergencies Context and Links between Information, Analysis and Programming with particular reference to the Horn of Africa Region

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**Abstract**

*As food security refers to people's ability to access food, it is rooted in the economy of the country and should be considered as integral to the national development agenda. This is more so for the developing countries, which also manifest high levels of food insecurity, particularly in Africa. Paradoxically it is these low-income, food deficit countries (LIFDCs) that also experience high levels of conflict, resulting in complex emergencies. These countries need to adopt well-planned short-, medium- and long-term measures to improve their food security situation. The food security policy should cover all sectors of the food chain including increasing food availability through production and importation, improving food marketing efficiency, increasing people's purchasing power and setting up effective early warning and food information systems (EWFIS). To be effective, the EWFIS should use data spanning the entire food chain, i.e. meteorological data, remote sensing imageries, agricultural statistics, commodity prices, nutritional anthropometry and food balance sheets. EWFIS is useful, not only for monitoring the food security situation to detect areas and segments of the population that are facing deteriorating food security, but also for providing relevant data (e.g. baseline data, vulnerability maps, etc.) needed for longer-term planning to move the affected populations from vulnerability to sustainable development.*

## Introduction

### When food insecurity turns into an emergency

The World Food Summit of 1996 asserted that "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life." Two key components of food security are physical availability of the food and adequate personal income to secure the food. Food security has to be guaranteed at all levels: individual, household, national, regional and global. Food security is thus a super-goal of socio-economic development that all countries, developing and developed, strive to achieve and maintain.

Three forms of food insecurity are identifiable: chronic, creeping and current or transitory. Chronic food insecurity tends to be confined to certain geographical areas as a result of adverse ecological conditions which do not allow the affected communities sustainably to

produce their own food and their economic conditions cannot allow sustained purchase of food from other areas. Desertification, degraded lands, poor infrastructure, high population growth rates, illiteracy and abject poverty in general are some of the causes of chronic food insecurity. Baseline vulnerability to chronic food insecurity is easily observable directly from the vulnerable communities, as they do not have adequate daily calorie intake and the rates of stunting and child mortality are noticeably high. Fighting chronic food insecurity requires long-term planning to address the underlying ecological and socio-economic causes.

Creeping food insecurity is the unfortunate situation in which a community faces slowly but surely deteriorating ecological and/or socio-economic conditions resulting in rising incidence of under nourishment and malnutrition. Examples of such adverse ecological conditions include soil erosion, loss of soil fertility, build-up of crop/livestock pests, declining water tables, deforestation, acid rain and pollution. Declining socio-economic conditions that lead to creeping food insecurity include persistent, high inflation, rising unemployment, collapsing agricultural markets, a population growth rate rising above the food production growth rate and human diseases (malaria and HIV/AIDS in particular). Some studies have measured cases of creeping food insecurity in terms of numbers of surveyed households that were unable, due to financial reasons, to access a sufficient diet over a period of 12 months (Nord *et al.*, 2002).

The most commonly visible food insecurity is transitory and caused by temporal short-term shocks, mostly climatic including droughts and floods, and less commonly migratory pests, especially locusts. When a large number of people are affected by transitory food insecurity, the situation assumes disaster proportions and is usually accompanied by displacement of populations internally and cross-border. If the disaster is so severe that it requires external/international assistance it is dubbed an emergency. Because of the immediacy and in order to save lives, international assistance involves distribution of food aid to the affected populations. Unfortunately, many countries that have experienced transitory food insecurity are those that are already vulnerable to chronic food insecurity.

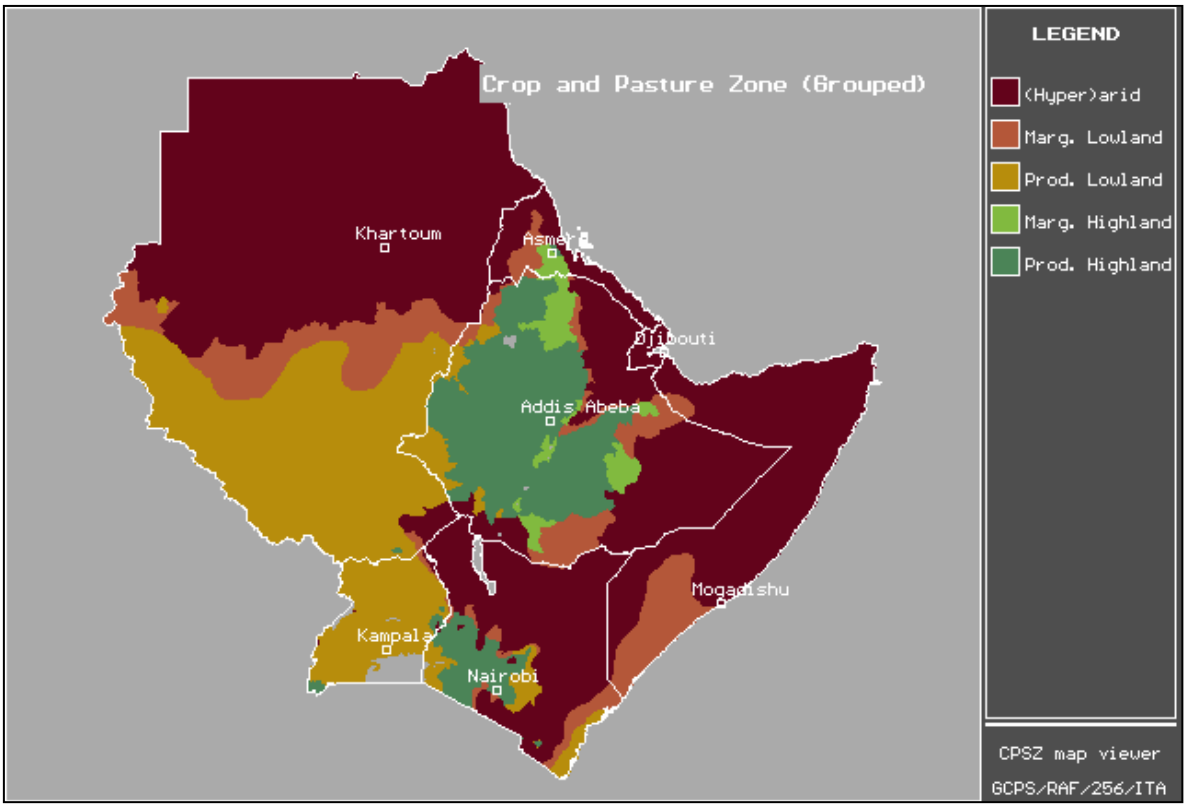
The Horn of Africa region experiences all the three forms of food insecurity. At least 60 percent of the land is classified as arid or semi-arid, receiving less than 600 mm of rainfall a year, and is threatened by severe land degradation and desertification. It is in the hyper-arid, agriculturally marginal lowlands and uplands that food emergencies have tended to occur (see map in Figure 1). The region has one of the highest population growth rates and per capita food production is declining. Most countries of the region rank among the poorest in the world. These have made the region a fertile ground for rampant food insecurity emergencies. At least 20 million people out of a total population of 160 million face one form of food insecurity or another and over five million normally require food assistance.

**When food insecurity becomes a complex emergency**

This is a situation when a food security emergency becomes complicated by another disaster, in particular an outbreak of conflict in the affected areas. Conflicts make the identification of vulnerable populations and delivery of external relief very difficult and hazardous. Once started, conflicts tend to persist for five to ten years and beyond.

It is paradoxical that the areas that face severe food insecurity have also tended to become embroiled in protracted conflicts. The Horn of Africa is not only one of the most food insecure regions of the world, it is also fraught with conflicts of all sorts: tribal, insurgency, cross-border, cattle rustling, etc. This has prompted IGAD (the Intergovernmental Authority on Development) to establish a formal mechanism for conflict early warning and response (IGAD, 2001) to complement existing early warning and food information systems.

**Figure 1: Arid and semi-arid lands of the IGAD Region**




*Source*: IGAD Crop Production System Zones (CVIEW)

## Food security policy

All countries of the world have expressed their commitment to substantially reducing food insecurity, as stated in the Declarations of the 1996 and 2002 World Food Summits and the Millennium Summit of 2000. The food security policy goal is to reduce by half the number of people facing food insecurity by the year 2015. There is a whole range of options as to how to achieve this goal, and each country would choose according to its specific circumstances. In the Horn of Africa region, particular emphasis has been placed on poverty reduction, considering that food insecurity in the region is inextricably linked to poverty. Countries are in the process of preparing and refining their Poverty Reduction Strategy Papers (PRSPs) as it is a major requirement for mobilizing donor funding. Unfortunately, many PRSPs are still weak on food security. There is need for a holistic approach to addressing food insecurity in the region. The strategies should cover the entire food chain from production, marketing to consumption.

More than 80 percent of the population of the Horn of Africa live in rural areas and are dependent on rain-fed agriculture. Thus there is the general belief that agriculture must be the engine of economic growth. Most countries in the region still view food security as being synonymous with food self-sufficiency. It is important, while addressing the availability issues of food security, to consider not only local production for self-sufficiency, but also buying from elsewhere, depending on among other things the cost effectiveness.

In the Horn, food insecurity is highest in the arid and semi-arid areas, where rainfall is low and unreliable for crop and livestock production. While technologies exist for dryland crop production, including water harvesting, small-scale irrigation, and drought-resistant crop varieties, they have not been effectively applied. As far as possible these technologies

should be promoted through appropriate research and extension strategies and programmes. Drought insurance is another innovative measure that some countries in the Horn of Africa are trying out (Hazell *et al.*, 2002).

Post-harvest losses range between 15 and 30 percent of production. This is another area that has been largely neglected in national food security policies. Considering that the Horn of Africa region has a food gap of the same magnitude, investing in technologies that reduce post-harvest losses would be a smart way of increasing food availability. On-farm food storage is one such technology, which is also crucial in curtailing the usual price collapse that follows the harvest season. Provision of credit facilities soon after harvest would help farmers keep their produce longer and not rush out to sell, pushing prices even lower.

The importance of efficient marketing in ensuring food security is generally recognized as most food security related strategies emphasize the need for trade liberalization and the provision of rural marketing infrastructure and of marketing information. However for regional food security, there is still a lot to do to improve cross-border trade in food commodities. Regional communications/transport systems are largely inadequate and tariff and non-tariff barriers to regional trade abound. Beyond marketing information, there is a need to promote market intelligence to encourage new entrants join regional food trade.

Food security policy should not only consider the supply side of production and marketing (availability), as the demand side (access) is equally important. The key issue on the demand side is implementing strategies that will increase people's real incomes to enable them purchase food if they are not able to produce it on their own. Income generating schemes have to be implemented. These usually include food-for-work projects. One problem with food-aid-based income generating activities is that they fail to provide an exit strategy when a food emergency is over. There is a need for a deliberate strategy gradually to withdraw food assistance and promote longer-term sustainable development. Devereux (2000) cautions against using food aid for addressing chronic food insecurity. There is a growing call for cash as a more dignified form of assistance to those facing food insecurity. This arrangement enables the poor households to re-enter the national cash economy without disrupting local food markets. The same should apply to school feeding projects *mutatis mutandis*. When cash assistance is used to support local or triangular food purchase it also helps to boost local production as farmers respond to the upward shift in effective demand.

At the national level, most governments in the IGAD region have a policy of keeping considerable amounts of emergency reserve food stocks for free distribution during food emergencies. Targeting those who should benefit from free food distributions has to be carefully done so as not to upset the local food markets. This requires collection, analysis and interpretation of data provided by early warning and food information systems.

## Food security monitoring and vulnerability assessment

It is essential for every country continuously to monitor its food security status, in order to uncover any hidden hunger, particularly creeping food insecurity, which may not be readily noticeable. As for transitory food insecurity, especially in countries that have a history of drought-induced famines like in the Horn of Africa, national meteorological services have been improved and equipped to monitor weather conditions and make seasonal forecasts which are refined as the season progresses. The Nairobi-based Drought Monitoring Centre assists the countries of the region in this regard. Improvements in the capture, analysis and interpretation of remote sensing data means that meteorological services are able to monitor and make short-term predictions of crop and pasture conditions during the growing season. The JRC-EC project is using meteorological and remote sensing data against the background of the IGAD Crop Production Systems Zones mini-GIS (CVIEW) to make localized crop production forecasts (JRC and FAO, 2003).

An effective food security monitoring system should not only focus on meteorological aspects of food production alone, rather it should cover the entire food chain, i.e. production, marketing and consumption. Although food insecurity can be measured directly through consumption surveys, it is a laborious and costly exercise that would not be possible to undertake regularly and covering all areas of the country. In any case, it is necessary to detect food insecurity before it occurs or gets worse. Thus early warning systems do not only make vulnerability assessments to determine the changes in numbers of people needing food assistance, but also monitor the markets and production environment to detect signs of possible deterioration in food security. These are not direct measures of food security; they are rough indicators of food insecurity trends. By comparing the current level of the indicator against the normal level for the particular area and period, one gets an indication whether the food security situation could be worsening or getting better. Confirmation of the current vulnerability requires a multidisciplinary on-the-spot assessment. It would not be necessary for all the indicators to converge in order to trigger action, any one indicator could justify intervention, but always after verification.

There are dozens of indicators to monitor and it is prudent to choose a few most pertinent ones. An early warning system that does not carefully balance its costs *vis à vis* the information products it generates cannot be sustainable, more so when it is externally funded and the project comes to an end. From experience with regional food security monitoring, the IGAD Early Warning and Food Information System (EWFIS) proposed the following minimum data set for continuous monitoring of current vulnerability indicators at the local level:

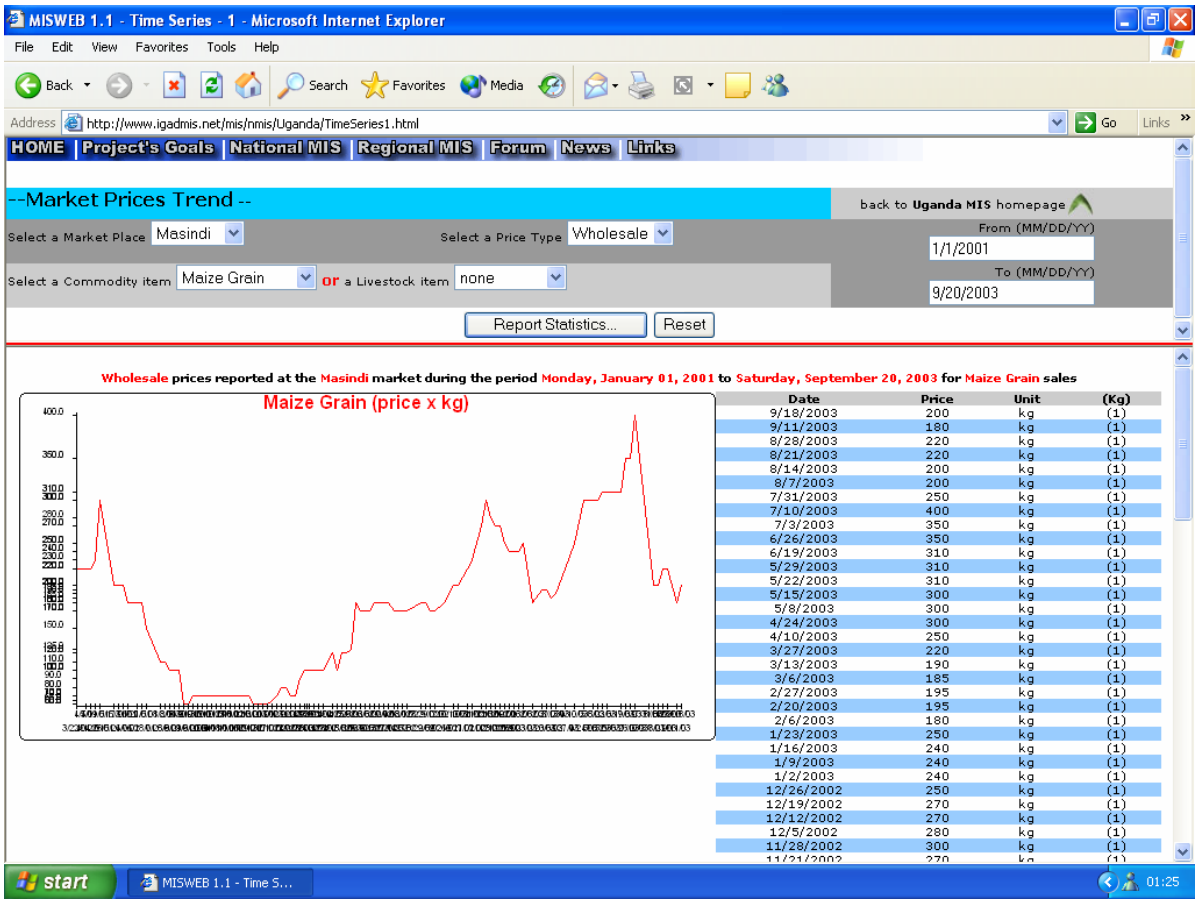
- meteorological data (rainfall, soil moisture, Water Satisfaction Index)
- remote sensing imageries (vegetation cover, rainfall estimates)
- agricultural statistics/forecasts (planted area, yields, expected production)
- wholesale commodity prices (food crops, livestock, non-food inflation)
- clinical child nutritional anthropometry (age, weight, height).

Unlike meteorological and remote sensing data, which are readily available every ten days covering wide areas of the region, marketing and nutritional data are not easy to collect on a regular basis. IGAD working with FAO have developed an Internet-based marketing information system (see Figure 2), whereby national marketing agencies update every Thursday the price data of the main food staples in major towns. Arrangements are underway to strengthen the livestock component.

Using the price data, one can compute the terms of trade between staple crops and livestock to determine the status of the purchasing power of pastoral households in the very remote areas. Also, clinical anthropometric data collected on children under the age of five would be useful in detecting deteriorating food security in remote areas served by the particular clinic. There is a need for support to refine and systematize clinical anthropometric data for use in generating local-level trends of nutritional and health status which can be monitored on a continuous basis for early warning.

At the aggregated national level, cereal food balance sheets are computed to determine the country's food needs and how much to import or export during the marketing year. Individual entries in the national food balance sheets tend to be imprecise, but the overall analysis gives an authoritative global picture of the national food supply situation. Food balance sheet analysis can be rendered dynamic if seasonal crop forecasts are available so that updates are plugged into the computations, say on a monthly basis. Forecast balances can be compared with long-term (10-year) predicted food production and predicted national food demand (annual percentage increase in food demand = population growth rate plus income elasticity of demand for the food commodity times income growth rate: Tweeten *et al.*, 1990).

**Figure 2: Sample output from IGAD MIS website (http://www.igadmis.net) – weekly wholesale price trend for maize grain in Masindi, Uganda, 2001-2003**




At the global level, there are several early warning systems that effectively serve the Horn of Africa region. These include FAO's GIEWS (Global Information and Early Warning System), WFP's VAM (Vulnerability Analysis and Mapping), and USAID's FEWS (Famine Early Warning System). Perhaps the most critical of these are the FAO's inter-agency crop and food needs assessment missions carried out at the end of the main growing season in most countries of the Horn of Africa. The assessments provide a basis for appeals for food aid for countries that are predicted to face severe food shortages.

The unfolding global information revolution has greatly facilitated the collection, analysis and dissemination of early warning data and information. The proliferation of mobile phones, FM radio stations, satellites, the Internet and the increasing personal computing capacity are making early warning work much easier than it was a decade ago. There is a need to increase the level of automation in the collection, processing and transmission of early warning data/information. This calls for intensification of research in the application of information technology to improve food security early warning.

## Food information for development planning

Generally, it is difficult to talk of development for an area facing a complex emergency. Insecurity makes even the provision of relief in conflict zones a highly risky operation. Luckily, in most food insecure areas of Africa, there already exists some baseline information, which can benefit development programming in the aftermath of a complex emergency. Such information includes:

- Resource situation (e.g. arable land and tenure systems, water, pasture, seeds and credit facilities)

- environmental carrying capacity (e.g. GIS on land use and on crop zones and yields)
- accessibility/infrastructure (e.g. rural water, food storage, access roads, schools and social solidarity arrangements)
- purchasing power/market potential
- household surveys (income, expenditure, consumption)
- relief targeting assessments (nutrition, health)

Arrangements should be built into the relief programmes to facilitate the recovery of the affected population by providing the basic resources like seeds, farm tools and farm storage facilities. Encamped, displaced persons could be the initial target beneficiaries of long-term, innovative, developmental packages (such as agricultural extension messages, education/literacy and health care campaigns), which they can carry back with them once peace returns to their areas.

Where it may be difficult to return to agriculture immediately (e.g. due to mined fields), arrangements for creation of alternative employment should be put in place. These would include income-generating activities appropriate for the area, e.g. fish farming, vegetable gardening, poultry, small-scale irrigation, as well as cash-for-work infrastructure development projects.

The catastrophic episode could be used to change people's ways of life for the better. For instance new crops and foods could be introduced in the wake of the disaster. In Uganda, for example, prior to the 1978/79 Liberation War, rice was an insignificant food, but due to distribution of the commodity for relief following the famine resulting from drought and war, rice became an accepted component of most people's diets. Rice growing has also taken root, a potential that could be exploited by introducing the cultivation of the NERICA upland rice variety.

For areas like the Horn of Africa that are prone to complex emergencies, there is a need to put in place not only effective food security early warning systems, but also to establish conflict early warning systems that can warn of nascent hostilities and prompt action to tackle them before they turn violent. Above all, while violence continues to rage during a complex emergency, deliberate efforts should be made systematically to collect as much information as possible from the displaced persons (who know their area best), as well as from formal national, regional and international sources with view to making informed policies, plans and programmes to address recovery and sustainable development issues when the conflict comes to an end.

## Conclusions and recommendations

Information gathering and analysis are key functions of food security management not only for disaster mitigation and response, but also for long-term planning. With improving information technology, the potential for increasing the timeliness and effectiveness of the early warning systems is enormous. Additional research is required to improve the operational methodologies of early warning systems.

As food insecurity occurs in different degrees in different parts of the world and at different times, all countries should endeavour to plan for and put in place sustainable and credible early warning systems for continuous monitoring of the food security situation. Early warning systems in themselves will not solve the food insecurity problems of the world, rather concurrent efforts are must be made to increase the incomes of the poor people and eradicate poverty in general.

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