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# **Food Security A Strategic Interface in the Human Dimension of Climate Change**

Ian Christoplos

Glemminge Development Research

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E-mail: [info@ccdcommission.org](mailto:info@ccdcommission.org)

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# **Food Security**

## **A Strategic Interface in the Human Dimension of Climate Change**

A discussion paper prepared for the Commission on Climate Change and Development

Ian Christoplos<sup>1</sup>

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<sup>1</sup> Ian Christoplos is a researcher and consultant working with issues related to disaster risk, food security and rural development. He can be contacted at [ian@glemdev.com](mailto:ian@glemdev.com)

Ensuring food security in the context of climate change and growing disaster risk is one of the greatest adaptation challenges. It is a profound illustration of what the human dimensions of climate change adaptation mean for national and local policy choices. Attention to the diversity of how people are managing their food security risks is in many respects the most visible and fundamental indicator of whether or not local perspectives on climate change are being respected and supported. The many failures in the past to apply package solutions to “ending hunger,” and the new hazards that have arisen due to the interplay of climate change and other factors, highlight the importance of locally tailored and innovative approaches to bridging the institutional gaps that undermine resilience and result in human suffering.

### ***From measuring yields to focusing on interfaces***

The issue of food security attracted considerable attention during the late 1980s due to the impacts of droughts in Africa and concerns about the nature of famine. At that time food availability and consumption were being compromised by many of the factors that may have been early forms of climate change.

Yet at the same time the focus was shifting away from increasing yields to understanding the complex nature of hunger and famines. Researchers such as Nobel laureate Amartya Sen and Alex de Waal drew attention to how famine resulted, not from a lack of food in a given region, but rather from political decisions and the structures of vulnerability that led to a lack of “entitlements” by marginalized populations to gain access to the food they need.

Such entitlements could consist of income, access to social protection or smallholder production. Sen showed that food exports always increase from famine affected areas, largely because poor people cannot afford to buy food. He concluded that increasing global food supply is not a panacea for famine. The broader “freedom” to buy food, as influenced by local/national/international policies, markets and trends, was recognized as more important than household or even national production levels.

Partly as an outcome of these new perspectives, during the 1990s the broader concept of *livelihoods* came to largely displace earlier attention to food security. The complex struggles of poor people to survive in increasingly diverse and complex economies were recognized as a more appropriate starting point for preventing hunger than a narrow food production perspective. The livelihoods framework emphasizes the policies, institutions and processes that determine how well poor people are able to deal with the context of vulnerability in which they live.

Recent events have swung the pendulum partially back toward food security and increasing yields. Food prices that skyrocketed during 2007-2008 and which are likely to remain volatile have underlined how the bottom line in the livelihoods of the poor is being able to afford enough to eat. Climate change is seen as a major (but not the only) factor in determining whether or not the livelihoods of the poor are viable in terms of preventing famine.

The global forces that determine the nature of today’s agrifood systems are clashing with the expectations of the poor, and food is the most incendiary factor. International security is reliant on how states manage this interface. Food security is a determinant of whether or not the state is viewed as living up to its most basic responsibilities. In

many Asian countries, the most fundamental indicator of the social compact between the state and its population is perceived as being whether or not there is enough rice available at an affordable price. In Mexico, increases in the price of tortillas have led to riots. In other countries different staples have become a symbol of access to a minimum level of well-being. Evidence indicates that people perceive that they have a right to food, especially a right to have enough food for their children, which in many respects transcends the livelihoods concept. The violent reactions to the food crisis have shown that food security is not just an indicator of the sustainability of livelihoods; it is even a determinant of social and political stability. Thus, food security is a strategic interface between international efforts to address geo-political and human insecurity and the struggles of individuals, households and communities to survive.

Food security considerations have four main dimensions: food availability, access to food, stability of supply and safe and healthy use of food.<sup>2</sup> The situation is deteriorating for the chronically poor in all four dimensions, due in part to climate change:

- *Availability* of food is decreasing due to scarcity arising from global population increase, worsening climatic conditions, changing food demands (for meat and dairy rather than grain) and shifts from food to biofuel production.
- Poor people's *access* (entitlements) to food is declining due to worsening terms of trade between wages and food costs.
- *Stability* is threatened due to increasing prevalence of disasters, erratic climate conditions, uncertainty regarding food prices and national protectionism
- Safe and healthy *use* of food is deteriorating as the poor switch to more monotonous diets, which lack essential micronutrients and as hazards such as flooding increase the prevalence of diarrheal diseases and malaria, which in turn affects food use.

### ***Markets: the livelihoods and food security link***

Despite huge growth in the global economy and significant progress in poverty reduction, food security has deteriorated since 1995. Even before the recent increase in the price of food, growing yields had not diminished high levels of hunger in much of the world.<sup>3</sup> Inequitable power structures and narrow visions of economic development have often led to new forms of impoverishment in areas that were considered green revolution models. Misdirected policies have led to a failure in the local, national and international market institutions that govern food entitlements. Even more importantly, ongoing processes within national and global markets that

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<sup>2</sup> Cohen, M.J., C. Tirado, N-L. Aberman and B. Thompson (2008) Impact of Climate Change and Bioenergy on Nutrition, IFRI and FAO

<sup>3</sup> von Braun, J (2008) High Food Prices: The what, who and how of proposed policy actions, Policy Brief, IFPRI, May 2008

impact on access to food have led to worsening malnutrition. Food prices are volatile; 50-80% of the wages of the poor go to purchasing food, but this in many cases is not enough to overcome hunger.<sup>4</sup>

Prevailing markets for food and for labor are the main obstacle for achieving food security, but they are also where solutions must be found. There is little evidence that increasing production will lead to reduced hunger. A dynamic agricultural economy is a precondition for dynamic rural development, upon which even the landless poor depend for their livelihoods and food security. Particularly in sub-Saharan Africa, climate change will increasingly limit such dynamism over the next few decades. Due to climate change, the window of opportunity to use agriculture as the driving force to overcome rural poverty, and thereby improve food security, is closing fast.<sup>5</sup>

Higher oil prices have made fertilizer and irrigation even more expensive<sup>6</sup> (though they were already unaffordable for most poor farmers). The rush to take advantage of higher commodity prices has multiplied inflationary pressures on fertilizer, creating an even greater gap between those who can and cannot afford it. Meanwhile, climate change is increasing dependence on more capital-intensive production due to climate variability's effects on traditional rainfed production and other low external input farming.

The shift from food to biofuel production is also affecting food access and availability. Food security is thus related to energy security, but at national and local levels it has proven difficult to overcome institutional approaches that lead to food and energy security being treated as if they were two entirely separate issues. The tendency to define climate change as an "environmental issue" also tends to put it in a sort of institutional ghetto removed from the institutions managing agriculture, energy and finance.<sup>7</sup> Local, national and international agencies active in environmental issues are often ignorant regarding the drivers behind market trends.

The extent to which volatile global food prices have affected local food prices varies enormously<sup>8</sup>, but the message is clear that food prices are the greatest determinant of whether people are food secure. Livelihoods analyses focusing on markets for food and labor have led to more complex views of food security. In the past there was a tendency to assume that the chronically poor were almost always small-scale, subsistence or semi-subsistence farmers. Improving food security was synonymous with increasing their production, an assumption that has been referred to as the

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<sup>4</sup> Oxfam (2008) The Time is Now: How world leaders should respond to the food price crisis, Oxfam Briefing Note, 3 June 2008

<sup>5</sup> CPRC (2008) Chronic Poverty Report 2008-2009: Escaping Poverty Traps, Manchester

<sup>6</sup> Evans, A. (2009) The Feeding of the Nine Billion: Global Food Security for the 21<sup>st</sup> Century, A Chatham House Report, London

<sup>7</sup> Evans, A. (2008) Rising Food Prices: Implications for development, Chatham House Briefing Paper, Chatham House Food Supply Project, April 2008

<sup>8</sup> von Braun, J (2008) High Food Prices: The what, who and how of proposed policy actions, Policy Brief, IFPRI, May 2008

“yeoman farmer fallacy” and which is still present in much post-disaster agricultural rehabilitation programs.<sup>9</sup>

Whereas crop losses among small producers do create much food insecurity globally, it is not the only or even the largest factor. Most of the chronically poor are landless or near landless, and an increasing proportion live in urban areas, with the latter a new focus of attention with regard to food security.<sup>10</sup> The chronically poor generally rely on day-labor (often on the farms of their wealthier neighbors), petty commercial enterprises and social protection. Food scarcity affects their food security, but mainly indirectly, in the form of higher prices and social conflict. Given that they rely on efficient markets for food and labor, infrastructural investment is one of the most important factors in ensuring food security in the face of climatic variability since roads enable food to be transported from surplus to deficit areas and reduce the costs of travel to jobs.<sup>11</sup>

Poor people in rural areas use a variety of commercial and subsistence production activities to obtain food in the face of uncertain and variable climatic and market conditions. Maintaining agro-biodiversity and ecosystem services are not new climate change adaptation tools. Farmers have long understood the importance of planting a range of different varieties and crops to protect themselves against climatic variability and to spread their market risk. Efforts to maintain biodiversity can prevent land degradation, since planting of trees and other perennial crops are ways of dealing with erratic rainfall. Trees can prevent wind damage.

Managing ecosystems and biodiversity – for agriculture and other purposes – can create synergies between climate change adaptation and mitigation measures, but attention must be paid to who controls these natural resources, who is able to access new markets for carbon sequestration, how they affect access and availability of food, and how these (potentially) radical changes in national policies for resource use actually impact on the livelihoods and food entitlements of the poor. Historically, it has rarely been the poor who have been able to benefit from new markets, and there is no reason to assume that these new markets are inherently different.

### ***Social protection as a solution to market failures and as a basis for security***

For the chronically poor, there is no quick pathway to self-reliance. The uncertainties and variability inherent in climate change and the increasing levels of conflict over entitlements to food are reinforcing awareness that markets will indeed fail at times. Well-functioning markets are reliant on a modicum of institutional and political stability, and the interplay of climate change with other risks has meant that volatility in production, access and availability of food is likely to be the norm. Many of the coping strategies that in the past cushioned the effects of droughts, floods and market

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<sup>9</sup> Longley, C., I. Christoplos, T. Slaymaker and S. Meseke, 2007, Rural Recovery in Fragile States: Agricultural support in countries emerging from conflict, Natural Resource Perspectives 105, February 2007, ODI, London

<sup>10</sup> Evans, A. (2009) The Feeding of the Nine Billion: Global Food Security for the 21<sup>st</sup> Century, A Chatham House Report, London

<sup>11</sup> CPRC (2008) Chronic Poverty Report 2008-2009: Escaping Poverty Traps, Manchester

swings will no longer be sufficient for maintaining food security when these events are more frequent and when increasing chronic livelihood stress reduces resilience.

Safety nets, in the form of risk transfer products, social protection or other publicly supported mechanisms will be required if an acceptable level of food security is to be maintained. These are needed both to stabilize consumption levels and to keep farmers from having to sell off productive assets such as plows or oxen. Such sales can turn acute food security crises into longer-term, chronic declines in food security and livelihood prospects.<sup>12</sup> Furthermore, the existence of social protection measures can rebuild the legitimacy of state institutions and thereby help to re-establish confidence in governance in the wake of disasters and chronic conflict.

For many years the solution to market failures leading to food insecurity was food aid. In recent years this has been questioned. Cash-based responses are a flexible and cheaper alternative and can provide positive incentives for local food production since they put cash – rather than imported food - into the pockets of the poor.<sup>13</sup> Imported food can damage markets for the food that is available locally.

However, the food crisis and the rapidly diminishing value of cash for food purchases have drawn attention to food aid again. More efforts are now being made to purchase food locally, since there are no longer pressures to dispose of northern grain surpluses and the procurement efforts of an agency like the World Food Program may be able to contribute to both smoothing and stimulating demand and calming markets.<sup>14</sup> It is still uncertain if or how this can be managed given the logistical constraints and intense competition from commercial buyers. Thus food security crises resulting from market failures can only be managed through a deeper understanding of markets.

In addition to disaster response, in the past food aid was also used within development programming, partially as a form of social protection for the chronically poor. As food reserves shrunk, this form of food aid gradually diminished to a rather insignificant component of the social protection toolbox. Yet the need to manage chronic food insecurity has increased. While food for work, school lunch programs and similar initiatives are still important in managing chronic food security needs in some countries (e.g., Laos), the range and scope of these and other social protection programs must increase as part of climate change adaptation. There are signs that the private sector is prepared to support such programs as an aspect of their corporate social responsibilities, but questions remain about the predictability of these donations amid financial turmoil and the willingness of these donors to target the most food

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<sup>12</sup> Barrett, C.B., Barry J. Barnett, Michael R. Carter, Sommarat Chantarat, James W. Hansen, Andrew G. Mude, Daniel E. Osgood, Jerry R. Skees, Calum G. Turvey and M. Neil Ward, (2007) Poverty Traps and Climate Risk: Limitations and Opportunities of Index-Based Risk Financing, Prepared for the Policy Roundtable on Climate Risk, Poverty Traps and Index-Based Financing, hosted by the International Research Institute for Climate and Society, Columbia University, October 19, 2007

<sup>13</sup> FAO (2006) The State of Food and Agriculture 2006: Food aid for food security? FAO, Rome

Harvey, P. (2007) Cash Based Responses in Emergencies, HPG Report 24, ODI, London, February 2007

<sup>14</sup> WFP (2008) Purchase for Progress: Innovations to connect low-income African farmers to markets, Rome

insecure when the need for returns on these investments in the form of publicity steers priorities toward better-off, logistically accessible and photogenic beneficiaries.

Even if one is optimistic about new resource flows from the private sector and indications of some increased commitments from national budgets, the need for social protection is likely to far outstrip supply and access for the foreseeable future. Even in countries with relatively well-established and organized social protection systems, such as Ethiopia and Bangladesh, only a small minority of the chronically poor has access to social protection.<sup>15</sup>

### ***Reaching the hungry***

Food security is a topic that sits poorly within the architecture of international institutions. Coordination among the three UN food-related agencies in Rome has long been poor, with WFP integrated into the humanitarian system and FAO and IFAD having a significant degree of independence as “specialized agencies” with a focus on production rather than consumption. UNICEF devotes a significant proportion of its work to nutrition. UNDP and WHO also have food security elements.

The World Bank is by far the largest investor in agriculture, and is rapidly expanding its portfolio, but given its orientation toward economic growth, in the past it paid relatively little attention to food security. This may be changing with World Bank President Robert Zoellick’s calls for a “new deal for global food policy.”

Yet the World Development Report 2008, on Agriculture and Development, makes virtually no mention of links between climate change and food security, nor has the climate-food nexus been a theme in Robert Zoellick’s more recent calls for a “vulnerability fund” to be established with 0.7% of funds allocated for economic stimulus packages.<sup>16</sup>

Philanthropists, such as the Bill and Melinda Gates Foundation, are increasingly important actors in support to African agriculture, but it is as yet unclear where their ultimate focus and impact will lie and the predictability of support in initiatives based on corporate profits is uncertain.

The ambiguities in the links between agriculture and food security objectives may be changing. The UN Secretary General’s Task Force on the Food Security Crisis and its Comprehensive Framework for Action (CFA) comprise new structures for joined-up response within and beyond the UN system. If the Task Force can mobilize the intended broad buy-in from different actors it could catalyze and coordinate actions that have been fragmented in the past. The CFA is designed to address both policy and operational factors and echoes many of the intentions embodied in the Paris Declaration on Aid Effectiveness. A strong link with the new climate change adaptation architecture, which is emerging simultaneously, would be essential. However, there are already indications that this may not happen. For example, the FAO hosted High Level Conference on World Food Security: The Challenges of

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<sup>15</sup> von Braun, J (2008) High Food Prices: The what, who and how of proposed policy actions, Policy Brief, IFPRI, May 2008

<sup>16</sup> Even more disturbing, there is no mention of climate related vulnerability at all in plans for this fund.

Climate Change and Bioenergy, held in June 2008, paid little attention to adaptation issues.

Global coordination challenges are in many respects mirrored at national and local levels, where responsibility for nutrition is usually placed with ministries of health, food with ministries of agriculture and social protection with ministries of social welfare. Emergency response institutions manage acute food insecurity, but other organizations deal with chronic insecurity. Food security is too often the responsibility of everyone and no one.

Meanwhile, climate change is mainly the reserve of environmental authorities, with little contact and less influence on any of the institutions dealing with food security. Civil society organizations advocate for action among all of these parties, but can do little to bring them together. NGOs may themselves be struggling with internal conflicts between humanitarian and development divisions.

The current food crisis could act as a wake-up call to bring different organizations together at international, national and local level to address the link between food security and climate change. Declarations have been made to this effect and financing is being sought, but as yet it is too early to determine whether or not a 'new' food security agenda is going to be put into place among those who need to act in order to reach the food insecure and whether this agenda will reflect the new range of risks stemming from climate change.

### ***What is to be done?***

#### *'Doing things that people want'*

Food insecure people are by nature concerned about having enough to eat. They are more likely to worry about their entitlements to food today than about uncertain production threats in the future. A food security agenda that puts vulnerability at center stage would recognize that efforts must address their immediate concerns along with the longer-term need for aggregate production and productivity increase. This has implications for local ownership of both agriculture and climate change efforts. One of the driving factors in locally-owned climate change adaptation is likely to be that of addressing risks to food security. Awareness of this overarching concern is a precondition for joint dialogue at the interface among national/international actors and local populations about priorities for climate change adaptation.

#### *'Doing more of the same'*

Most of the actions required to ensure food security and to promote sustainable livelihoods in the face of climate change are not new. The main task is to better apply what is known about availability, access, supply stability and use of food within the development agenda in a more coherent and risk aware manner at local, national, and international levels. Food security is a concrete and widely accepted starting point from which to build local and national ownership for more abstract and ambitious goals of dealing with climate uncertainty, variability, stress and shocks. Climate change is primarily a multiplier of known risk factors that have in the past rarely received sufficient attention or funding because they have fallen into the gap between relief and development. Climate change adaptation for enhanced food security is

above all a matter of making better use of existing knowledge and skills in addressing this gap.

*'Doing things differently, with due caution in pursuit of development objectives*

The uncertainty inherent in climatic variability suggests that support to agriculture and livelihoods must provide a menu of options, rather than set piece packages for increasing food production or livelihood support. Territorial development programs, post-disaster agricultural rehabilitation efforts and social protection mechanisms have been important vehicles to promote food security, but they have often been driven by assumptions that played down the extent to which variability and uncertainty about weather and markets are at the core of how chronically poor and vulnerable populations maintain their livelihoods.

The CFA presents a powerful call for renewed attention to agricultural production. However, it too may fail to address household level risk in the pursuit of aggregate increase in national and global food stocks. Attention must shift to the structural nature of vulnerability, control over resources and access to food if the poor and food insecure are to benefit from increased production. It is furthermore essential that climate change mitigation programming does not reduce their access to resources and livelihood opportunities.

Better integration is needed between the goals and methods of programming for agricultural extension and other services in terms of food production and ecosystem services so as to emphasize impacts on the livelihoods of food insecure households. Actors promoting production increase need to pay far more attention to risk and how to avoid maladaptation. Those working with ecosystem services need to critically reflect on the wider impacts of their schemes on the nutritional status of affected populations and on how structures of poverty may inappropriately skew the benefits of payments for these services to powerful actors, rather than to the food insecure.