Seasonality Revisited

International Conference
Institute of Development Studies, UK
8-10 July, 2009

An Integrated Intervention Framework for Fighting Seasonal Hunger

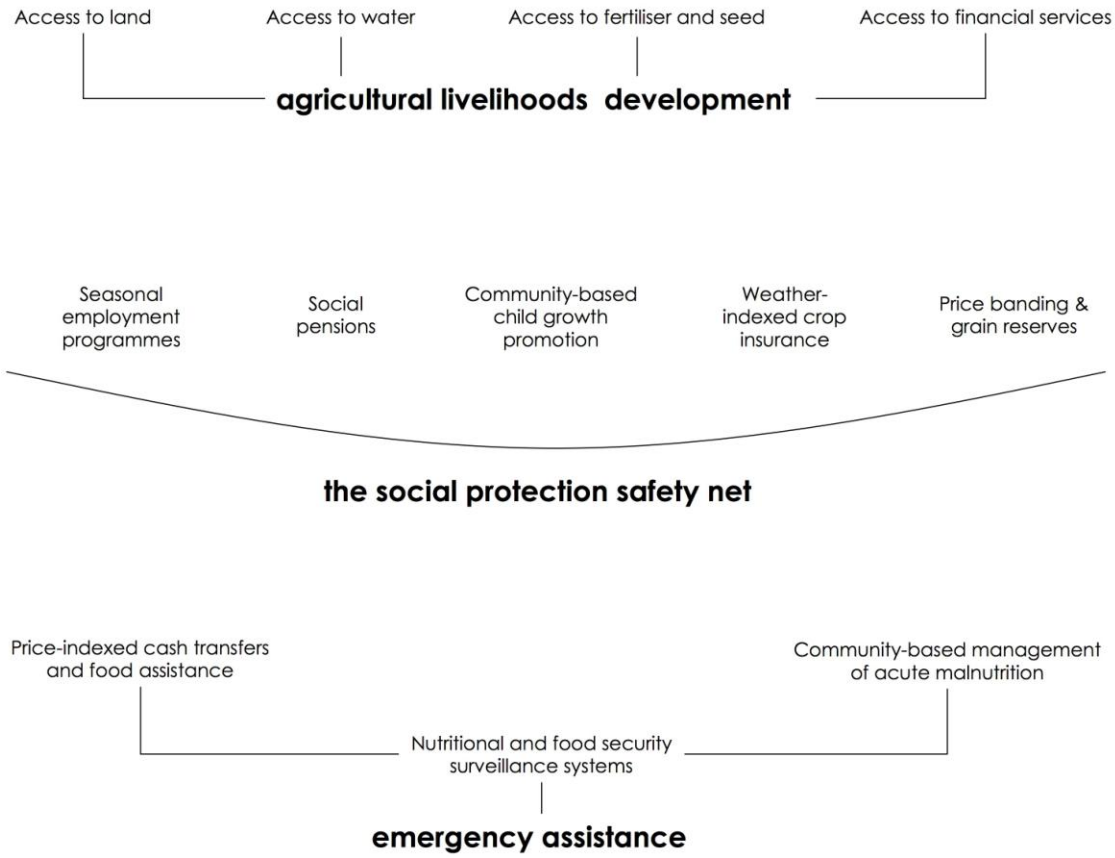
Samuel Hauenstein Swan
Bapu Vaitla
Stephen Devereux

An Integrated Intervention Framework for Fighting Seasonal Hunger

Samuel Hauenstein Swan, Bapu Vaitla and Stephen Devereux

Many policies have proved to be successful in fighting seasonal hunger. In this paper, we review what we regard as the most important of these policy ideas and give examples of their application in various countries, focusing particularly on Malawi. The diagram below arranges anti-seasonal hunger interventions into a single integrated framework, divided into categories of 'emergency assistance', 'the social protection safety net', and 'agricultural livelihoods development'.

Figure 1. Intervention framework for fighting seasonal hunger



Emergency assistance measures are targeted at people who are suffering from seasonal hunger and need immediate help. The social protection safety net attempts to prevent families from falling into hunger in the first place, through a mix

of employment, nutrition, price control and other policies. Agricultural livelihoods development initiatives focus on improving productivity through better access to key inputs, and thus try to work towards a future where rural households have high enough (and stable enough) incomes that the social protection safety net will rarely need to be accessed.[i]

Emergency Assistance

Nutrition and food security surveillance systems, cash/food transfers, and community-based management (CBM) of child malnutrition can work synergistically in emergency assistance efforts. Surveillance systems can identify who requires help and what interventions are needed; in the ideal scenario, these systems will be able to detect a deteriorating food security situation before malnutrition has become widespread. Early detection would then enable assistance in the form of cash and/or food transfers at the household level to help prevent malnutrition. If, however, the situation has already worsened to the point where severe acute malnutrition is at high levels, then CBM efforts can provide broad and effective nutritional treatment coverage.

Nutritional and Food Security Surveillance

Historically, the vast majority of people affected by seasonal hunger have gone unnoticed by their national health systems and international agencies alike. In recent years, however, new surveillance system approaches have improved our understanding of when and where seasonal hunger and malnutrition occur. In Malawi, a surveillance system run by the government and supported by Action Against Hunger provides month-by-month information from every region of the country.

The Malawi surveillance system has nutritional and food security components. The nutritional component monitors weight and height trends in a sample of pre-school children attending government growth monitoring clinics. Each group of children is followed for twelve consecutive months to assess seasonal changes in their nutritional status. Although the system follows only a small sample of children, the results are indicative of nutritional trends in all parts of the country.

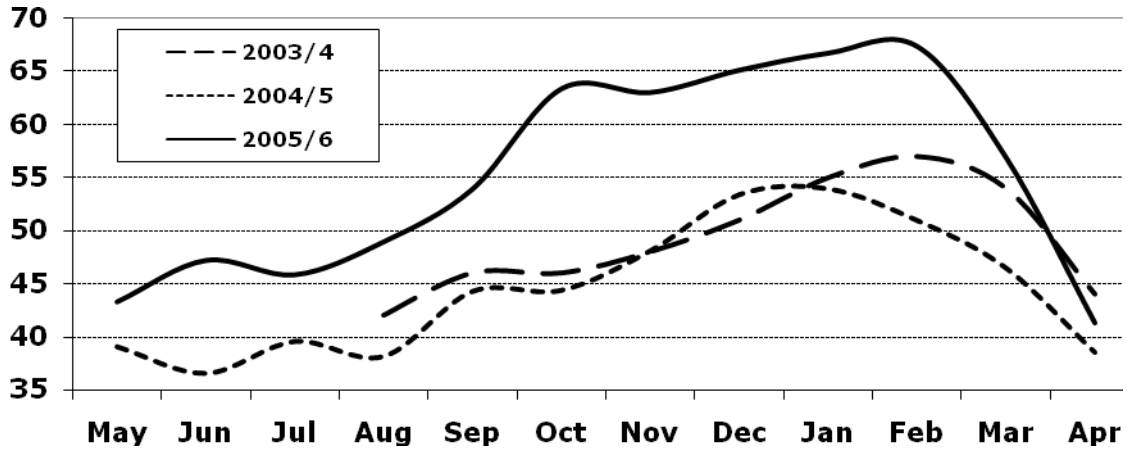
From this group of children, the system selects a further sub-sample to survey their family's food security status. A baseline survey gathers basic information: demographic data, assets owned, types of agricultural system, sources of income, access to water and sanitation, and so on. Monthly repeat surveys then assess changes in cash income and food consumption flows and combine the information into a composite 'Food Stress Index' (FSI; see Box 1 for the eight variables included in the index). The FSI ranges on a scale between 0 and 100, with 100 being the worst score possible.[ii]

Box 1. Variables Measured in the Food Stress Index

1. The percentage of households that have very low supplies of starch staple food: less than 20 kg of maize, dry cassava or other cereal, and no cassava or sweet potato ready for harvest.
2. The percentage of households that have a potential shortage in the longer term: less than 50kg of maize, dry cassava or other cereal, and no cassava or sweet potato ready for harvest in the next two months.
3. The percentage of households with income less than MK1000 (£3.66) per month.
4. The percentage of households having difficulty finding casual labor employment.
5. The percentage of households eating three meals a day.
6. The percentage of households not eating groundnuts or legumes on the previous day.
7. The percentage of households reporting they did not have enough food at some time in the month.
8. The percentage of households going whole days without eating a staple food.

The FSI for Malawi as a whole for the 2003-2006 period is given below in Figure 2. One can see clear seasonal 'humps' in food stress in each of the three years, and also that the seasonal hunger of 2005/06 was far worse than in the preceding years.

Figure 2. Food Stress Index, Malawi, 2003/04 to 2005/06 seasons



Source: Compiled from Action Against Hunger-Malawi

The purpose of the surveillance system is to inform policymakers when and to what degree the food situation is deteriorating. Evidence of an impending serious situation will compel a more detailed nutritional and food security investigation, followed by assistance response. Although the surveillance system covers only a small sample of children and families, it is a vast improvement over current

nutritional and food security assessments that characterise situations at only one given point of time. If that chosen point of time happens to be inaccurate – and we can see from Figure 2 above that while the existence of a hunger season is predictable, the exact timing of the peak of the season varies from year to year, depending on trends in rainfall and prices – then policy and programme responses will also be faulty and families may go hungry when more accurate information could have led to preventative interventions. In short, current methods of nutritional and food security assessment are like a snapshot, whereas a surveillance system is like a motion picture. Warning signs of impending crisis are more easily noticed in the latter.

Price-Indexed Cash Transfers and Food Assistance

Food aid has traditionally been the dominant form of assistance to people suffering from hunger. In the past decade, however, assistance in the form of cash transfers has become increasingly popular as an alternative to food aid, especially in Africa. The advantages of cash are many. Cash gives people more choices than food, enabling them to meet a range of food and non-food needs, including health expenses, clothing, and – even in emergency situations – the purchase of livestock and other key assets needed to build livelihoods.[iii] Cash also has 'multiplier effects' in the economy: spending cash transfers will generate income and employment for others. Cash can help farmers invest in their production systems and thus stimulate local food economies, whereas food aid can put local traders out of business and undermine incentives for farmers to produce more food.

However, there are particular concerns with the use of cash. Perhaps the most serious problems occur when seasonal price spikes reduce the amount of food that a given amount of cash can buy, or when market supplies of food are inadequate to meet the demand generated by cash transfers. In Malawi, the 'Food and Cash Transfers' project (FACT) and 'Dowa Emergency Cash Transfers' project (DECT), implemented by the NGO Concern Worldwide as assistance to thousands of drought-affected farmers in 2006 and 2007, tried to respond to these problems. The FACT project provided a monthly food package (maize, beans and oil), plus enough cash to buy the same package again in local markets, for four months during the 2005/06 hunger season, a year when bad weather caused a national maize shortage and the President of Malawi declared a 'State of Disaster'. The food package was provided in case lack of supplies in local markets left people unable to buy food with their cash transfers. The DECT project, meanwhile, delivered only cash transfers during the 2007 hungry season, in a year when there was a bumper harvest at national level – so there was no problem with food supplies – but erratic rainfall caused localised crop failure in two districts.

An innovative feature of both FACT and DECT was that local food markets were monitored continuously throughout the hungry season and the amount of cash transferred to families was adjusted as food prices rose or fell, to ensure that people had access to adequate quantities of maize, beans, and cooking oil at whatever price prevailed. This meant that people were fully compensated for seasonal price rises, which were significant – for example, the retail price of maize doubled between

January and March 2006 – but the cost of this price seasonality was underwritten by the project implementers, rather than by poor families themselves.

As long as markets are able to supply adequate amounts of food in response to greater demand, this strategy of 'indexing' the amount of cash transferred to food prices can be very effective. If food markets are not functioning well, external infusions of food should be considered in conjunction with price-indexed cash transfers. Even in the latter case, however, food used in assistance efforts should be procured from as nearby as possible. Usually, surplus food can be purchased from national or regional markets, saving considerably on the time and monetary cost of transporting food across oceans from donor countries; the price of transport presently comprises a significant portion of total food aid budgets.[iv] Food aid from rich countries should only be used in the rare situations when it is the quickest and most cost-effective way to deliver assistance.

Community-Based Management of Acute Malnutrition

The community-based management (CBM) approach is revolutionising the treatment of malnutrition. Traditionally, children suffering from severe acute malnutrition are treated in hospital-type inpatient settings. Per-patient costs and staffing needs for this approach, however, are very high; as a result, only a limited number of malnourished children are fortunate enough to receive treatment. The CBM approach addresses these issues by mobilising communities themselves to treat the 80% or so of malnourished children who do not have other illnesses or complications.[v] The use of easy to administer therapeutic foods and the periodic support of health professionals makes this community-based strategy viable. Meanwhile, inpatient care in Therapeutic Feeding Centres (TFCs) can concentrate on the remaining 20% of malnourished children who do have complications.

The first step in CBM is to identify sick children through 'active case finding', wherein health workers or the community itself screen children for malnutrition on a regular basis. Case finding is facilitated by easy-to-use malnutrition diagnosis approaches such as measuring mid-upper arm circumference. Active case-finding not only leads to more malnourished children in the community being identified, but also earlier diagnosis of symptoms, which will increase the recovery rate during treatment.

After case finding, health professionals determine whether a child has complications. If the child does have complications, he or she is referred to an inpatient facility for closely managed therapeutic feeding. However, if the child has no complications, families themselves treat malnourished children at home, with the support of a weekly check-up by trained health staff. The use of nutrient-dense Ready-to-Use Foods (RUFs), a recent innovation in nutritional treatment technology, is the key to this home-based approach. The peanut and milk-based RUFs do not require preparation, store well, are not prone to bacterial contamination, and are easy to feed to children above six months old.[vi] In addition, RUFs can often be produced locally at a low cost, providing a boost to the community economy.

Finally, the CBM approach is simple enough that the strategy can be applied not only for emergency treatment, but also for preventative purposes in an at-risk

population – for example, among children who have been identified as moderately malnourished in the early hunger season period but have not yet become severely malnourished. The CBM approach may even allow blanket coverage for all children in a community just prior to the hunger season[vii]; in this way, RUFs can be integrated into child growth promotion efforts, a key part of the social protection safety net that we discuss later.

Thus, in its ideal form, the CBM approach rests on five pillars: community and frontline health worker case-finding of malnutrition using rapid diagnosis approaches; inpatient therapeutic feeding centres for malnourished children *with* complications; home-based therapeutic programmes for malnourished children *without* complications; local production of RUFs; and supplementary feeding for prevention of severe acute malnutrition.

Although CBM approaches have been tested on a large scale for only a few years, the results have thus far been impressive. In a survey of 21 CBM programmes in Malawi, Ethiopia and Sudan between 2001 and 2005, coverage (the percentage of the total child population screened and treated for malnutrition) increased almost fivefold over traditional treatment approaches; overall, nearly three-quarters of all children in the project areas were included in the screening. Four out of five children who were treated through CBM recovered, a rate that compares favourably to inpatient care.[viii] There is reason to be optimistic that the coverage and recovery rates will improve even more as CBM methods are refined.

The Social Protection Safety Net

Although effective implementation of emergency programmes is critical to save lives in the hunger season, a preventative social protection safety net can reduce the need for those emergency interventions in the first place. For people who are able to work, seasonal employment programmes that pay wages indexed to food prices are the best way for this safety net to deliver resources to families. For people who are restricted in their ability to work, particularly the elderly, cash transfers could be provided in the form of 'social pensions'. Since this latter group is unable to work at any time of the year, pensions should be provided year-round, but again should be indexed to food prices so that pensioners can afford an adequate diet in all seasons.

In addition to assisting households and pensioners, there should be a social protection safety net component that focuses directly on mothers and children. We suggest that community-based growth promotion initiatives, which offer an integrated set of health and nutrition services rooted at the village level, are the best approach to protecting these groups. Again, although the growth promotion services should be available year-round, benefits – particularly the supplementary feeding component – should increase during the hunger season, in response to lower household food availability and higher food prices.

The section below also discusses the idea of weather-indexed agricultural insurance, a way to protect farmers against the weather shocks that can severely damage farm livelihoods. Finally, price banding policies – setting a 'floor' price for farmers selling food crops and 'ceiling' prices for food buyers – are also valuable

components of a social protection safety net, and can be linked to national grain reserves.

Seasonal Employment Programmes

Seasonal employment programmes have their roots in the massive public works initiatives of the Great Depression in the United States. Since that time, both rich and poor countries have periodically provided temporary publicly funded employment as a means of both easing poverty and creating needed infrastructure. India, China, and Bangladesh all have large long-standing seasonal employment programmes, and many African countries have implemented sizeable programmes of their own in the past two decades.[ix] Ethiopia's Productive Safety Net Programme (PSNP) is currently the largest seasonal employment initiative in Africa, reaching seven eight million people during the hunger season every year.

Seasonal employment programmes meet several needs. Labour power is often the only resource controlled by poor families. Employment programmes allow these families the opportunity to convert labour into cash and food during times of year when jobs are scarce. In addition, the assets created by seasonal employment labour often directly address the problems of seasonality: for example, drainage systems decrease the threat of malaria and diarrhoea, all-weather roads allow access to markets and health care facilities in the rainy season, and soil conservation structures help to increase agricultural and land resource productivity.

The choice of wage type – cash or food – is a critical decision when designing employment programmes. Indexing cash wages to food prices in the manner of the FACT and DECT programmes in Malawi described earlier, as well as injecting food as needed to increase supplies in local markets, are two ways to address this issue. A complementary strategy is to provide, season by season, a menu of choices for participants themselves to choose how they would like to be paid. The food-for-work option, which protects against food price volatility, is often preferred during the hunger season, while cash-for-work around harvest time allows families more flexibility in their consumption decisions. At planting time, families may be inclined towards inputs-for-work, wherein wages are paid in the form of fertiliser and seed. As far as we know, this type of seasonally differentiated payment schedule for employment programmes has not been implemented anywhere in the world, but it merits a deeper look, not only for its ability to provide the 'right' type of wage, but also because of its participatory nature: it puts the people directly served by the intervention in control of its design.

India's National Rural Employment Guarantee Scheme (NREGS) is the newest major employment initiative. NREGS is unlike its predecessors in one critical way: it guarantees households a legal right to request one hundred days of employment a year at the minimum wage from the government. These one hundred days can be demanded during any time of the year, depending on when households experience a shortfall in job opportunities and income.[x] If employment is not provided promptly by the state, families are entitled to an employment allowance. NREGS thus transforms public sector employment from a 'discretionary benefit' to a 'legal entitlement', a subtle but revolutionary change.

Social Pensions

A particular form of cash transfer is spreading across southern Africa: 'social pensions', or regular cash transfers to elderly citizens. South Africa first implemented social pensions in the 1920s, but it was not until the 1970s that they were adopted by Namibia, and even more recently by Botswana (in 1996), Lesotho (in 2004) and Swaziland (in 2005). Although the pensions are not solely intended to address seasonal hunger, their impact on all forms of poverty and food insecurity is enormous, and they offer many lessons for the design and implementation of effective anti-hunger programmes elsewhere.

Social pensions are not the same as standard pensions. Public or private pensions are usually paid to workers when they retire from formal employment and are funded by contributions, linked to pre-retirement income, made by both employers and employees. Social pensions, in contrast, are given by the state as an unconditional cash transfer to all elderly citizens (or in some cases only to poor elderly citizens), with 60 or 65 years old being the most common age threshold. A key feature of social pensions is that they are a legal right that can be claimed by all elderly citizens, not 'discretionary' or targeted assistance that is given to some but not others and can be withdrawn at any time. This 'legal entitlement' aspect of social pensions provides a basis for political mobilisation when the right is violated. For example, in November 2006, when delays and errors in pension lists caused thousands of social pensioners at risk of hunger in Swaziland to return home empty-handed after queuing all day, Members of Parliament representing their affected constituents stridently took up the issue. The MPs' action resulted in swift governmental response to resolve the problem.[xi] In standard development programmes not based on legal entitlements, examples of such rapid governmental response to problems are rare.

The social pension becomes especially crucial in the hungry season and bad years. During the southern African drought of 1992, social pensions in Namibia saved numerous lives. At the onset of the emergency, the government included elderly people on its list of 'vulnerable groups' eligible for food aid, but then recognised that recipients of the monthly social pension were actually among the least vulnerable of rural Namibians. Pensioners were in fact overwhelmed with requests for assistance from relatives and neighbours, and most tried to help as much as they could. For the duration of the food crisis, many children were sent to stay with older relatives who were receiving the social pension; in fact, pensioners became the sole source of access to food in many poor communities, often to the point of overstretching their resources.

Like cash and food transfer programmes, social pensions should also be indexed to price changes. Most social pensions currently in operation are adjusted occasionally (e.g. annually) to keep up with inflation, but none that we are aware of takes into account seasonal or other fluctuations in food prices. So the real value of the pension might well be lowest when it is needed most – during a food crisis or hunger season. We argue that social pensions should instead be indexed to reflect rising prices of basic goods, including seasonal fluctuations in food prices.

Finally, it should be noted that pensions could extend beyond the elderly to encompass other groups unable to work – people with disabilities,[xii] the labour-constrained (e.g. widows looking after young children), and so on.

Community-Based Child Growth Promotion

Community-based child growth promotion programmes protect pre-school children and pregnant/lactating mothers from hunger by integrating a wide variety of health and nutrition services at the village level. The overall objective of growth promotion programmes is to assure optimal nutrition during the most important child growth periods – during pregnancy and in the first years of life. Seasonal patterns of food deficit or disease that interrupt these critical periods can have permanent developmental consequences. The services commonly found in growth promotion programmes include: child growth monitoring; antenatal care; breastfeeding promotion; health, hygiene, and nutrition education; and supplementary feeding of pregnant women, lactating mothers and preschool children.

Child growth monitoring takes nutritional surveillance a step further by putting into place systems that measure the growth of every child, not just a sub-sample. Village-level workers, who can establish personal relationships with local families in a way that outsiders cannot, are critical to making such a universal coverage strategy work.

The health of women during pregnancy is an especially important determinant of a child's future nutritional status. This is starkly illustrated by the case of India: despite the country's relatively lower levels of income poverty, India has very high child malnutrition rates compared to sub-Saharan Africa, and the difference is thought to be primarily a result of maternal nutritional deficiency. In India, over one-third of women have a below-normal Body Mass Index (BMI: weight in relation to height) and nearly three-fifths are anaemic. Largely as a result of poor maternal nutritional status, over 40% of Indian children are born underweight.[xiii] Providing supplementary food to pregnant women, and increasing the amount provided during the hunger season, will help to reduce this 'inter-generational' malnutrition, and thus have positive consequences that last for a child's lifetime.

Given the importance of breast-milk as a source of food during the first two years of a child's life, protecting the nutritional status of lactating mothers is also critical to child health. Energy and nutrient requirements during pregnancy are elevated, and deficits that occur during the hunger season – worsened by the fact that many poor pregnant women have to continue working in these months to earn income and buy food – can have damaging consequences on maternal and child health. Again, supplementary feeding programmes should adjust the amount of food given to lactating mothers depending on the season.

After six months of age, supplementary feeding programmes can also target children themselves. While many programmes in the past have focused on feeding children in schools as an incentive to increase enrolment and improve academic performance, for nutritional purposes it is even more important to concentrate programmes on the 0-2 year age group. The first two years of life are absolutely

critical for establishing a normal growth pattern; children who are malnourished in this initial period cannot catch up in subsequent years. In addition, over two-thirds of child deaths worldwide occur during the first year of life, and the majority of these are associated with malnutrition.[xiv] It is especially critical to ensure that these children are fulfilling their nutritional requirements during the lean season.

Supplementary feeding programmes tend to concentrate on providing calories and protein, but it is important to consider micronutrient sufficiency as well. Millions of children a year are victims of micronutrient deficiencies, especially of vitamin A, iron, and iodine. The consequences of micronutrient deficiency are serious, ranging from mental retardation to blindness to death. Provision of micronutrient supplements can save children from these outcomes, and is in fact one of the most cost-effective development interventions of any kind for improving human health.[xv] One of the major challenges in providing micronutrient supplements is establishing an effective delivery mechanism: capsules have to be taken regularly, in the case of iron at least once a week. Incorporating micronutrient supplementation in a community-based growth promotion structure can assist in overcoming these delivery issues.

A recent survey of 15 community growth promotion and similar child health/nutrition programmes worldwide concludes that, given the presence of certain contextual and programme 'success factors',[xvi] malnutrition is considerably reduced among enrolled children: independent of other factors, the best growth promotion programmes lower malnutrition by one to two percentage points a year.[xvii] This rate of impact worldwide would equate to several million pre-school children being prevented from falling into malnutrition every year.

Weather-Indexed Agricultural Insurance Schemes

Because agriculture is so risky, farmers need insurance against harvest failure. But crop insurance is generally not available to poor farmers in Africa and Asia, for various reasons: because insurance markets are weakly developed, because a problem like drought affects so many farmers that insurance companies will be unable to pay all the claimants, and because the premiums are often too high for poor farmers to afford. For these reasons, previous attempts to extend crop insurance to small farmers in the 1960s and 1970s failed.

Now, however, an innovative 'weather-indexing' approach to agricultural insurance is being pilot tested in India, Ethiopia, Malawi, and other countries. In these schemes, participating farmers are paid out if rainfall in their district falls below a certain percentage of the long-term average; the lower the rainfall, the higher the payout. This payout is intended to compensate farmers for lost food production and income from crop sales, ensuring that they can purchase enough food to feed their family until the next harvest.

From the insurer's point of view, there are two advantages to this approach to crop insurance. The first is that farms do not need to be individually assessed following a drought, which greatly reduces administrative costs for the insurer. Secondly, farmers have no incentive to work less and claim on their insurance when the harvest fails – a major worry for insurers in the past – because assessments are

made for rainfall at the district level, not the farm level. From the farmer's point of view, 'weather-indexed insurance' offers exactly the kind of guaranteed safety net that they need to survive bad years, and could give them the confidence to take moderate risks such as investing in fertiliser or high-yielding seed varieties.

Of course, the problem of costly premiums for poor farmers persists with this 'weather-indexing' idea, as does the risk of major payouts for the insurance company. For these reasons, financial support from governments or donors might be required, but the costs of supporting an insurance programme should be weighed against the costs of providing humanitarian assistance once a crisis has started.

Price Banding and Strategic Grain Reserves

After independence from colonial powers, many governments established agricultural marketing boards, which had a mandate to support farmers and ensure national food security. Governments believed that weak markets and exploitative traders exposed poor farmers and consumers to great risk, and these 'parastatal' marketing boards were to be the first line of defence. The parastatals sold fertiliser and seeds at subsidised prices to ensure that poor farmers had affordable access to these agricultural inputs. They then purchased harvest surpluses at a fixed minimum price (the 'floor' price) from all areas of the country to guarantee a fair income for all farmers. The harvest was stored in national 'Strategic Grain Reserves'. The grain reserves not only provided a buffer stock in case of emergencies, but were also used to fight seasonal hunger. The grain was stored until the hunger season and then sold at a fixed cheap price (the 'ceiling' price) to all consumers, boosting access to food and fighting price increases in the market. The two practices of buying food at a floor price to help farmers and selling it at a ceiling price to help consumers are together called 'price banding'.

Despite their vitally important mandate, in many countries the actual functioning of price banding systems was far from perfect. Parastatals were rightly criticised for being expensive and inefficient, frequently corrupt, and for interfering with the development of the private sector. While defenders argued that parastatals were needed because markets were weak, critics complained that markets were weak because of unfair competition from parastatals. Where private traders were either banned or absent, farmers risked being locked into relationships with parastatal marketing boards on terms they could not control. Often, they did not receive the promised agricultural inputs on time, they had limited choice in what they could buy or sell, and they were paid late (and often under-paid) for their produce.

In the 1980s, the pendulum in the global 'state versus market' policy debate swung sharply to the right, and donor countries and agencies applied conditions to their loans and grants that forced governments of poor countries to withdraw agricultural subsidies and remove controls over crop and food prices. The hope was that freeing markets from the 'dead hand' of state regulation would stimulate agricultural production and trade, leading to rapid economic growth and poverty reduction. Under pressure from powerful agencies such as the World Bank and

International Monetary Fund (IMF), most of Africa's agricultural parastatals were closed, scaled down, or commercialised.

Unfortunately, this often created more problems than it solved. Like many other parastatals, Malawi's Agricultural Development and Marketing Corporation (ADMARC) closed its loss-making 'social marketing' depots – those food purchase/ sales centres that were mostly located in deep rural communities, where food insecurity was highest but incomes were lowest. This meant that thousands of farmers who had come to rely on ADMARC to sell them inputs at planting time, to buy their crops at harvest time, and to sell them food in the hungry season no longer had access to their 'buyer and seller of last resort'. The expectation of those who advocated for market liberalisation was that the private sector would rush in to fill the gap vacated by ADMARC. Instead, there was a vacuum; no traders came to these isolated villages. Previously, ADMARC had subsidised its loss-making depots using the money it made from more profitable depots elsewhere. But private traders have no incentive to do this, and few saw any profit in travelling for hours across difficult countryside to buy or sell a few bags of maize to a few households in a tiny village, when the big towns near main roads offered easier access and much larger, more reliable and more affluent markets.

But perhaps the most damaging reform in terms of food security in Malawi was a requirement that the Strategic Grain Reserve should be operated on a 'cost recovery' basis. This meant that the government parastatal in charge of the reserve, the National Food Reserve Agency (NFRA), was instructed to take commercial loans to buy its stock, and had to cover its costs by buying and selling maize on the open market. In 1999 the NFRA took a loan of £15m from a South African bank to stock the grain reserve to full capacity (180,000 metric tonnes). Following two bumper harvests, the grain reserve was starting to rot and the NFRA's debt had risen to £16.5m. So in 2001 the International Monetary Fund advised the government to sell the old stock and use the proceeds to repay the debt, and then replenish the reserve by buying fresh maize after the next harvest. Accordingly, the NFRA silos were emptied, with most of the maize being exported to neighbouring countries. But then the food crisis of 2002 struck – and the national grain reserve was empty, leaving the government unable to prevent famine. This experience exposed the paradox of trying to operate an agency with a food security mandate on a cost-recovery basis: instead of recycling stock every year, the NFRA held onto maize waiting for prices to rise, so it could sell at a price that would allow the loan to be repaid.

Northern donors have spent much of the last three decades pressuring the governments of poor countries to dismantle interventionist strategies like price banding. A carbon-copy resuscitation of policies and institutions that have failed is clearly not the proper course for the future, but seasonal hunger cannot be addressed without protecting the poor from volatile prices. In view of the ongoing crises in small farm agriculture and food grain markets, price banding – with much stronger in-built corruption and performance checks – deserves another look.

Agricultural Livelihoods Development

A strong social protection safety net is essential in the fight against seasonal hunger, but a permanent victory can only come about if agricultural productivity is increased. This is obviously the case for poor families that depend on farming as their income source, but also for landless families that depend on agricultural labour work: increased on-farm productivity can translate into higher rural growth and, in the right policy environment, more job opportunities for wage workers.

Investment in agriculture has been an on-again, off-again priority over the decades, following dominant ideological trends. The 1980s and 1990s saw large decreases in public investment into agriculture; partially as a result, productivity has slowed down. The recent global food price crisis, however, has again pushed agriculture to the centre of the political conversation about hunger. The key to increasing productivity lies in increased investment into agricultural research and training on one side and improved access to inputs on the other, especially land, water, fertiliser, seed, and financial services. It is this latter set of considerations, access to inputs, on which we focus in the section below.

Land

Land is the most fundamental of all inputs required for farming. In many places where seasonal hunger and risks of famine are highest, including southern Malawi and highland Ethiopia, access to land is severely limited. Many farmers are struggling to survive from fields so small they are sometimes called 'starvation plots', and many other families are completely landless.

There are two competing lines of thought on the links between land access and agricultural productivity. One is that agricultural development policy should not purposefully strive to guarantee land access to poor families, and instead should allow a process of land consolidation to occur – large farmers becoming larger by buying out smaller, less competitive farmers, as has happened (and continues to happen) in many Northern countries. The contention is that large, consolidated farms can be more productive than small farms, capitalising on economies of scale through mechanisation and other improved technologies. In addition, large landholders can more easily absorb price and climate shocks, and are likely to have better access to credit as a result (moneylenders will see them as less risky investments). Credit will then allow even more investment into yield-enhancing technology, kick-starting a cycle of ever-higher productivity.

Others argue the opposite: that productivity is generally higher on small farms. This is mainly due to two factors: greater input use and the 'incentive' effect. Per unit area, small farmers generally invest more fertiliser, water, and labour into their fields, which leads to higher yields. The incentive effect refers to the fact that small farms often use only household labour to run the farm operations, while large farms generally need to hire outside labour. Because household members have a greater stake in increased agricultural productivity than hired workers, the impact of household labour is generally higher than hired labour.

Both lines of argument have mountains of evidence supporting their claims, although the majority of rural development-focused academics have tended to

support the latter 'small farms are more productive' contention.[xviii] In practice, the conditions surrounding agriculture – whether small farmers have access to affordable credit, whether input subsidies are available, whether technology appropriate for small farms is available, and so on – determine which strategy is likely to produce the greatest gains in productivity.

Of course, the purpose of facilitating access to land is not just to increase agricultural productivity in the country as a whole, but also to reduce hunger among the rural poor through providing a critical livelihood resource. For this reason, many governments in Africa and Asia – even those that simultaneously promote some degree of land consolidation, particularly for export cropping purposes – have employed a variety of land reform strategies to increase poor families' access to land. These include straightforward expropriation and redistribution of rich farmers' land, as in Cuba, China, and Ethiopia; the creation of 'land ceiling' laws like India's, under which individuals can only own a fixed amount of land, with the excess parcels purchased by the state and redistributed to poorer families; and 'willing seller, willing buyer' models like that of South Africa, wherein the government purchases land at market rates from landowners and then assists landless families with grants and loans to purchase the land. As can be imagined, the ideological environment determines which form of land redistribution is exercised. In many countries, powerful rural elites make forcible land reform politically impossible. In others, including South Africa, the glacial pace of market-based land reform is leading to rising resentment among the rural landless.[xix]

A more moderate approach to improving land access is to concentrate on improving the legal and administrative framework around land ownership and tenure. Often, rural families have only customary, not legal, title to land they have used for generations. Without official title, powerful interests can forcefully push families off their land. Improvement of the legal and administrative framework can prevent such expulsions from occurring, and also provide a basis for legal challenge if they do occur. Similar legal protections can prevent sharecroppers and renters of land from suffering exploitative terms of lease. This focus on linking poor families to a responsive and efficient legal and administrative structure has generally been the favoured approach of major donor institutions, especially the World Bank, to improving land access for the rural poor.[xx]

Land access is an extremely delicate political issue. But the links between land ownership, poverty and hunger among rural people are clear and undeniable, and action on improving land access for poor families lies at the heart of fighting hunger, especially in the face of widespread unemployment in many rural economies.

Water

The availability of water is central to preventing seasonal cycles of hunger. Irrigation can make the difference between one harvest and two, between half a year of hunger and no hunger at all. Presently, only 5% of farmland in Sub-Saharan Africa and one-third in Asia is irrigated.[xxi] In some countries, including Ethiopia, vast amounts of untapped groundwater and surface water exist, but significant

investment will be required to build the infrastructure needed to harvest this water. In other countries, groundwater tables are rapidly being depleted, and access of poor families to more water can only occur if efficiency of current use, through drip irrigation and other technologies, is improved.

In addition, climate change is likely to intensify water problems in the coming decades, in two ways: by reducing total rainfall and by causing rainfall to become more erratic and unpredictable, with a higher frequency of extreme weather events like droughts and floods. While the first issue is becoming an increasingly higher-profile concern, the latter – greater unpredictability of rainfall distribution *within* a growing season – receives less attention. Many food crises have occurred when harvests failed despite total annual rainfall being more than sufficient, but poorly distributed over the crop cycle; for example, in northern Namibia in 1992 a three-week break in the rains was enough to wither the maize crop in farmers' fields and cause a devastating 'agricultural drought', even though precipitation for the entire season was higher than the five-year average.[xxii] Overall, most studies looking at the future potential impact of climate change predict that Africa will face rising water stress and falling cereal yields, with some countries, including the extremely food-insecure nations of Chad, Niger and Zambia, at risk of losing virtually all of their arable land by 2100.

In this challenging environment of falling groundwater tables and increasingly unreliable rainfall, improved water management is crucial. Public works and rural infrastructure programmes should concentrate on soil and water conservation activities that are appropriate and effective to each local context. As suggested by the UN's International Fund for Agricultural Development (IFAD), a 'Blue Revolution' is needed to focus policy attention on availability and efficient use of water, particularly in Sub-Saharan Africa.

Fertiliser and Seed

As discussed earlier, many measures implemented under agricultural liberalisation reforms in the 1980s and 1990s had the effect of reducing the access of poor farmers to fertiliser and seeds, which in many countries became unaffordable for everyone except large-scale commercial farmers. Poor farmers also owned fewer animals, so they had little or no access to organic manure to replace the fertiliser. As a result, soil nutrients were depleted with each succeeding crop, yields on small family farms fell, and the hunger season lengthened.

In Malawi, fertiliser was available to farmers at government-subsidised prices until the 1980s, when the country was forced to devalue its currency several times and prices of imported fertilisers quadrupled as a result. The World Bank recognised that greater use of fertilisers was essential to increase agricultural productivity in Malawi, but at the same time it argued that the government could not afford to continue to subsidise fertiliser. After a protracted struggle lasting eight years, the Fertiliser Subsidy Removal Programme was completed in 1995, signalling a temporary victory for the Bank. However, concern about the consequences for food security and hunger prompted other donors (led by the UK) to finance the free distribution of fertiliser and improved seed to all farmers in Malawi, through the

'Starter Pack' programme. The impact of Starter Packs was dramatic: the national maize harvest increased by 16 percent, the hunger season was reduced by one to two months and maize prices were stabilised across seasons. But after bumper harvests in the late 1990s, the Starter Pack programme was scaled down from universal availability to covering just one-third of farmers in the country, which had an immediate negative effect on agricultural productivity and played a role in the 2002 famine.[xxiii]

After another food crisis hit in 2005, the Government of Malawi introduced the Input Subsidy Programme, which again aimed to increase the use of fertilisers and improved varieties of maize seed. The subsidy was delivered to almost half of all farming families nationwide, in the form of a voucher that could be redeemed for fertiliser and seeds at one-third of normal retail prices. At first, the donor community disapproved of the programme, for the same reasons that it had lobbied for abolition of fertiliser subsidies in the 1980s, and so the subsidy was financed entirely by government. But the programme was extremely popular and contributed to a bumper harvest in 2006, which prompted the government to renew it with equally positive results in 2007 (although good rainfall, and not the increased use of agricultural inputs alone, played an important role in both years' production totals). After years of decrying the market-inhibiting impacts of input subsidies, international donors now accept that the Input Subsidy Programme in Malawi has a political and popular momentum that is difficult to resist, and are starting to offer technical and financial support.

In addition to price subsidies, targeted input vouchers, input trade fairs and inputs-for-work schemes can also help deliver agricultural inputs to farmers. Small-scale inputs-for-work projects have been evaluated favourably in Malawi, both in terms of participant satisfaction and in terms of raising food production.

Financial Services

Lack of access to financial services, particularly affordable seasonal input credit, is another serious constraint to agricultural productivity and food security. Well-functioning credit markets assist households in making yield-enhancing investments (like irrigation, fertiliser and improved seed) in their farming systems.

In Malawi, the story of credit access is similar to that of fertiliser access. In the 1980s, over 400,000 small farmers in Malawi were members of 'farmers' clubs' organised by the Ministry of Agriculture. They enjoyed access to subsidised credit that allowed them to buy fertiliser and seeds at affordable prices. Farmers stood security for each other, and more than 90 per cent repaid their loans, which assured them of getting credit again the following year. But in 1995 the government-run Smallholder Agricultural Credit Association was converted into the Malawi Rural Finance Corporation, a private company that offers loans on a commercial basis only to wealthier farmers, excluding the poor and food insecure farmers, who are seen as too risky. Now lack of access to subsidised credit pushes many poor families in Malawi to turn to private moneylenders. These moneylenders often charge annual interest rates of one hundred percent or more on the offered loans. Should the harvest fail, these families will find themselves heavily in debt.[xxiv]

However, the future of pro-poor rural microfinance seems to be bright, particularly in Asia. Following on the heels of the widely publicised success of Bangladesh's Grameen Bank – for which its founder Mohammed Yunus won the Nobel Peace Prize in 2006 – a number of 'social entrepreneurs' have started rural microfinance institutions of their own. These organisations have shown that it is possible for the private sector to both run profitable companies and offer loans to poor rural families at very low interest. Approaches such as group lending models, in which loans are granted to a group that collectively takes on the responsibility of ensuring that each individual member pays back their share, have resulted in very low default rates. Following the success of these private organisations, some governments are even getting back into the rural microfinance act; India has started a large-scale scheme wherein the government helps to organise women's groups and then links them to commercial banks that provide small low-interest loans.

Conclusion

The battle against seasonal hunger must be fought on several fronts: emergency assistance to protect lives and assets during the hunger months; social protection safety nets to minimise the number of families who require emergency assistance; and agricultural livelihoods development initiatives to work towards a future when safety nets are rarely needed. As Millman and Kates write, "not all food shortages lead to hunger; not all hunger leads to starvation; not all starvation causes death".[xxv] The chain is broken by good policy, and the measures we discuss above are key components of a good policy package.

Notes

[i] Given that an estimated seven out of every ten undernourished people in the world are either smallholder farmers or landless agricultural workers (United Nations Millennium Project, 2005), we concentrate particularly on *agricultural* livelihoods development. However, the needs of pastoralist and other populations should be carefully considered, particularly in the many Sahelian countries where pastoralists are the group at highest risk of seasonal hunger.

[ii] Ercilla and Chikoko (2006).

[iii] Mattinen and Ogden (2006).

[iv] See Barrett and Maxwell (2005) for an extensive overview of the food vs. cash debate.

[v] WHO et al. (2007).

[vi] *Ibid.*

[vii] Medecins Sans Frontieres (2007).

[viii] Collins et al. (2005), Collins et al. (2006), Sadler (2006).

[ix] Various chapters in Von Braun (1995).

[x] Right to Food Campaign (2007).

[xi] Devereux (2008).

[xii] However, it should not be assumed that people with disabilities need to be automatically excluded from employment programmes, which indeed seems to be a common premise. Employment programmes should make an effort to provide jobs in which people with disabilities can use their particular skills; there have been some attempts to do this under NREGS in India.

[xiii] IIPS and Macro International (2007).

[xiv] Behrman et al. (2004).

[xv] *Ibid*.

[xvi] Most important among the success factors are: commitment to nutrition at all political levels; participatory planning with the community; the involvement of charismatic community leaders; strong investment into management; health/nutrition awareness trainings; the setting of time-bound objectives; and the involvement of local NGOs.

[xvii] Hunt (2005), Mason et al. (2006).

[xviii] See Gatak and Roy (2007) and Deininger et al. (2007) for recent views on land reform and agricultural productivity in India. See Griffin et al. (2002) and Sender and Johnston (2004) for an overview of opposing positions on the debate. IFAD (2001), Chapter 3, lists numerous articles on the topic from countries around the world.

[xix] Lahiff (2007).

[xx] World Bank (2007).

[xxi] IFAD (2001).

[xxii] Næraa et al. (1993).

[xxiii] Devereux (2007).

[xxiv] Devereux (1999).

[xxv] Kates and Millman (1990).

References

Barrett, C. and D. Maxwell. (2005). Food aid after fifty years: Recasting its role. Routledge, London.

Behrman, J.R., H. Alderman, and J. Hoddinott. (2004). Copenhagen Consensus: Challenges and opportunities – hunger and malnutrition. Accessed online 15 May 2008 at www.copenhagenconsensus.com

Collins, S., Sadler, K., Dent, N., Khara, T., Guerrero, S., Myatt, M., Saboya, M., and A. Walsh. (2005). "Key issues in the success of community-based management of severe malnutrition." Food Nutr Bull 27(3 Suppl): S49-82.

Collins S., Dent, N., Binns, P., Bahwere, P., Sadler, K., and Alistair Hallam. (2006). "Management of severe acute malnutrition in children." Lancet 368: 1992-2000.

Deininger, K, S. Jin, and H. Nagarajan. (2007). Land reforms, poverty reduction, and economic growth: evidence from India. World Bank Policy Research Working Paper 4448. Washington DC, World Bank.

Devereux, S. (1999). "'Making Less Last Longer': Informal safety nets in Malawi", IDS Discussion Paper 373. Brighton, Institute of Development Studies.

Devereux, S. (2007). "Seasonality and Social Protection in Africa", conference paper: Rural Development: Retrospect and Prospect, University of Oxford.

Devereux, S. (2008). "Social Pensions", REBA Thematic Brief. Johannesburg: Regional Hunger and Vulnerability Programme (RHVP).

Ercilla, M.B. and M.P. Chikoko. (2006). Methodology: Nutrition and Food Security Surveillance System. Lilongwe, Action Against Hunger.

Gatak, M. and S. Roy. (2007). "Land reform and agricultural productivity in India: a review of the evidence". Oxford Review of Economic Policy 23 (2):251-269.

Griffin, K., Khan, A.R., and A. Ickowitz. (2002). « Poverty and the Distribution of Land ». Journal of Agrarian Change 2(3): 279-330.

Hunt, J. (2005). « The potential impact of reducing global malnutrition on poverty reduction and economic development ». Asia Pac J Clin Nutr 14 (CD Supplement):10-38.

International Fund for Agricultural Development (IFAD). (2001). Rural poverty report 2001: the challenge of ending rural poverty. New York, Oxford University Press.

International Institute for Population Sciences (IIPS) and Macro International. (2007). National family health survey (NFHS-3), 2005–06: India: Volume I. Mumbai, IIPS.

Kates, R.W. and S. Millman. (1990). "On ending hunger: the lessons from history". From Hunger in history : food shortage, poverty, and deprivation, L.F. Newman and W. Crossgrove, eds. Cambridge, Mass., Blackwell.

Lahiff, E. (2007). "'Willing buyer, willing seller': South Africa's failed experiment in market-led agrarian reform". Third World Quarterly 28 (8): 1577-1597.

Mason, J., Soekirman-Galloway, R., Martines, J., Musgrove P., and D. Sanders. (2006). "Community Health and Nutrition Programmes". From Disease control priorities in developing countries, Jamison, D., Breman, J.G., Measham, A.R., Alleyne, G., Claeson, M., Evans, D.B., Jha, P., Mills, A., and P. Musgrove, eds. Washington DC, World Bank.

Mattinen, H. and K. Ogden. (2006). "Cash-based interventions: lessons from southern Somalia". Disasters 30 (3): 297-315.

Medicins Sans Frontieres (MSF)/Doctors Without Borders. (2007). Food is Not Enough. Accessed 15 May 2008 from http://www.msf.org/source/advocacy/malnutrition/2007/launch/MSF_Food_Is_Not_Enough.pdf

Næraa, T., Devereux, S., Frayne, B. and P. Harnett. (1993). "Coping with Drought in Namibia", NISER Research Report 12, Namibian Institute for Social and Economic Research. Windhoek, University of Namibia.

Right to Food Campaign. (2007). Employment Guarantee Act: a primer. Delhi, Right to Food Campaign.

Sadler, K. (2006). "Treating acute malnutrition seriously". Accessed 15 May 2008 from nutrition.tufts.edu/docs/media/Sadler_10_10_07.ppt

Sender, J. and D. Johnston. (2004). "Searching for a Weapon of Mass Production in Africa: Unconvincing Arguments for Land Reform". Journal of Agrarian Change 4 (1-2): 142-164.

United Nations Millennium Project Task Force on Hunger. (2005). Halving hunger: it can be done. P. A. Sánchez, Swaminathan, M.S., Dobie, P., and Nalan Yuksei, lead authors. London ; Sterling, Va., Earthscan: xxv, 245.

Von Braun, J., ed. (1995). Employment for poverty reduction and food security. Washington, D.C., International Food Policy Research Institute.

World Bank (2007). India: Land policies for growth and poverty reduction. World Bank Report 38298-IN. Washington, D.C., World Bank.

World Health Organisation (WHO)/World Food Programme (WFP)/United Nations System Standing Committee on Nutrition (UN SCN)/United Nations Children's Fund (UNICEF). (2007). Community-Based Management of severe acute malnutrition. Accessed 15 May 2008 from www.unicef.org/media/files/Community_Based__Management_of_Severe_Acute_Malnutrition.pdf