

**CONTRIBUTION OF SMALLHOLDER  
PRODUCTION TO FOOD SECURITY:  
EVIDENCE FROM SUB-SAHARAN AFRICA**

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## **Executive summary**

This paper explores the contribution of smallholder production to food security in sub-Saharan Africa and relates it to the South African case. Noting that the world's hungry are smallholder farmers, it is established that food insecurity is closely linked to the livelihood strategies of these farm households. It is apparent, however, that part of what drives food insecurity is poverty, and that the key to addressing smallholder food security should include innovations that mitigate internal constraints and that provide economic opportunities for the poor.

Evidence shows that in some countries during the 1980s policy intervention in extension services provision, improved access to technology and markets, and access to and secure ownership of land and capital assets enhanced own production and household availability of food from own resources. Zimbabwe's smallholder production in the 1980s is a clear example of this, although subsidised inputs also played a major role in the success of production in this sector. Successes in other parts of Africa include coffee production in Uganda (in the late 1980s and early 1990s) and Malawi (in the early 2000s). Where progress was limited, Dorward et al. (2004) point out that these countries faced problems related to public goods, complementary coordination of policy and market development.

Evidence indicates efforts made towards resourcing rural areas, where most smallholder farmers were the main beneficiaries, that involved providing subsidised inputs and developing production-related infrastructure and institutional service provision. This has resulted in little real progress in terms of relative increases in agricultural employment and food security, but has moved households from completely hopeless situations to a level where livelihoods could be transformed with more micro-level support. Although actual policies employed differ slightly across the sub-region, most of the interventions were tailored mainly towards providing institutional support with increased extension, subsidised inputs, increased access to markets and farmer training including demonstrations for increased output. In Senegal, Zambia and Uganda in the decade 1980–1990 productivity (in terms of relative output growth) fell by between 4% and 13%. However, they are notable exceptions.

Access to livelihood assets, strong institutional support and a favourable external environment play a crucial role in smallholder agriculture's ability to produce and significantly contribute towards reducing food insecurity. Where producers lack extension services, for example, yields can be as low as 20% of the total possible (Malawi), and a lack of draught power leading to delays in planting (or other operations) can result in up to a 30% reduction in yield (Zimbabwe).

Since most poor rural households rely on agricultural production for a significant share of their household income, increasing agricultural productivity is intimately related to reducing food insecurity and rural poverty. This means that attention to the totality of livelihood assets available and accessible to households is the most effective way of solving food insecurity problems. It follows that increasing food production

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and productivity should go beyond the objective of reducing market prices, and seek to improve access and availability within the household.

Policies to support smallholder productivity, including increased access to land and institutional support, boost food availability and lower local food prices, generating higher incomes and increased demand for locally produced goods and services and resulting in broad-based socio-economic development in rural areas.

## **1. Introduction**

In recent years, several countries in sub-Saharan Africa have emphasised the importance of employment in rural areas as a way of reducing rural poverty, by setting up schemes to identify strategic priorities and channel financial resources to rural development. In essence the primary motive is to solve the immediate problem of hunger through smallholder production of food and the generation of income levels that enable rural populations to buy enough food (Dorward, et al., 2004). This contrasts with past policies where agriculture was the only employment sector in rural areas. Today's rural areas have changed and offer different business opportunities, not only in agriculture, but also in service sectors such as mass and small-scale tourism activities and aquaculture, although many countries still regard agricultural self-employment in rural areas as the key element in rural development. Since most of the production in rural areas is conducted by farming households, their production plays an important role in rural livelihood strategies.

Most agricultural production in the rural areas is still predominantly rain-fed, fragmented and subsistence in character. Any hope that production of agricultural commodities could address food security and employment problems needs to be based on consideration of how this sector could be transformed. The transformation of subsistence systems does not come about because of natural and biological resource constraints, but because of competing demands for the farmer's time. Thus, there is a process of substitution of traded inputs for non-traded inputs in commercialisation. Separation of this substitution process into components that require power (land preparation, threshing, etc.) and those that are control functions which require human judgement (timing, planting, weeding, harvesting, etc.) is useful since it opens up the possibility that policies could encourage or discourage the pace of each. As the latter substitution is of human labour, issues of rural employment arise. These are driven by the opportunity cost of farm labour because of continually rising non-farm wages. Therefore, a paradigm shift is needed from attention to food self-sufficiency as a goal to food self-reliance.<sup>1</sup>

Further, agricultural growth that fosters improvements in productivity on small farms has proven to be highly effective in reducing poverty and hunger and raising rural living standards, as demonstrated in large parts of Asia during the Green Revolution (Rosegrant & Hazell, 2000). Evidence from across Southern Africa indicates huge efforts made towards resourcing rural areas, where most smallholder farmers were the main beneficiaries – the aim being to increase production and employment by providing subsidised inputs and developing production-related infrastructure and institutional service provision. Unfortunately, this has resulted in little real progress in terms of relative increases in agricultural employment and food security. Although actual policies employed differ slightly across the sub-region, most of the interventions were tailored primarily towards providing policy support with increased

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<sup>1</sup> Food self-reliance refers to a much wider set of issues than just food self-sufficiency, which is restricted to just the self-production of food.

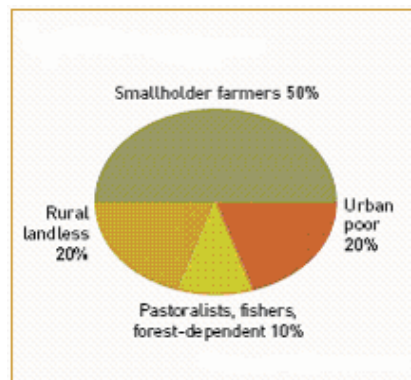
extension services, subsidised inputs, increased access to markets and farmer training, including demonstrations, for increased output. In Senegal, Zambia, Kenya and Uganda in the decade 1980–1990 government policy effort was focused primarily on production infrastructure, although intervention was emasculated by negative central government budgetary effects on the macro-economy occasioned by macro-economic stabilisation (Fan, et. al., 2003; Poulton, Kydd et al., 2006). Productivity (in terms of relative output growth) fell by between 4% and 13%. However, some countries in the region have had better success by directing support most exclusively to smallholder farmers (e.g. Zimbabwe in the 1980s and Malawi in the early 2000s).

But why smallholder farmers? The answer to this question can be found in the positions where they (the smallholder farmers) are located within income groups and the fact that these farmers tend to be the largest (in terms of population) economic activity group. Thus, in examining the contribution of own production to food security, this paper begins by considering who the hungry are in general, in section 2, before considering the conceptual framework and context of smallholder livelihood performance in section 3. Section 4 then considers the relationship between poverty and food security and how the two have been addressed in the past, whilst section 5 addresses the policies that have been instituted to address sustainable food security through production. The paper then considers the effects of food security-focused policy interventions (section 6), followed by specific policy effects and outcomes including success factors in different countries (section 7). Section 8 summarises the success factors of own production, before the conclusions of the discussion are drawn in section 9.

## 2. Who are the hungry?

Most of the world's hungry live in rural areas and depend on the consumption and sale of natural products for both their income and food (Figure 1). Hunger is concentrated among the world's landless, or farmers whose plots are too small to provide for their needs. However, hunger is also a growing problem in the fast-growing urban spaces, which are now home to more than 40% of urban inhabitants in developing countries.<sup>2</sup> In sub-Saharan Africa and Southern Asia, the proportion of undernourished people has decreased in the last two decades, but the numbers of hungry people have risen (FAO, 2004). In absolute terms, the number of undernourished people in the developing world fell by just nine million over this period. South Africa mirrors the above distribution although, given its level of urbanisation, urban hunger tends to be much more pronounced.

Figure 1 – Who the world's hungry are



Source: FAO, 2004

Many poor households in South Africa are involved in small-scale farming, but agriculture does not contribute a significant proportion of their total income (Statistic South Africa, 2005) even though farming requires a very high time input from family members. The level of farming undertaken relies on the amount of access to land, water, seeds and agricultural equipment. Under apartheid most black farmlands (so-called homelands) were severely overused because more than 80% of the population were restricted to less than 13% of the land, leading to soil erosion and low productivity.<sup>3</sup> As a result, many black farm families or some members of these families were engaged in non-agricultural employment to supplement their livelihoods, a feature of most African rural-dwellers. Increasingly, poor subsistence farmers rely on

<sup>2</sup> Note that not all of the urban spaces are fast-growing. Developing countries generally have pockets of fast growing areas and pockets of stagnant.

<sup>3</sup> See [www.aidc.org](http://www.aidc.org).

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purchased food. Smallholder farmers and rural-dwellers thus are concerned about which livelihood strategies would give them the most welfare (Matshe, 2006).

### **3. Conceptual framework of poor smallholder livelihood performance and food insecurity**

Literature on African agricultural development endorses a common assertion that national and global efforts to accelerate development of smallholder peasant agriculture in sub-Saharan Africa have been a failure to date. The evidence for failure is the present state of a sub-continent facing declining per capita food production and vulnerable to complex incidences of famine-induced starvation and widespread hunger and endemic poverty. In Southern and Eastern Africa per capita food production and employment have declined precipitously over the past three decades, while food requirements continue to escalate due to rapid population growth of 2–3% (World Bank, 2008). Since a majority of the African population is engaged in semi-subsistence agriculture, their state of hunger, poverty and livelihood insecurity directly reflects the poor performance of the traditional African agricultural systems. Transformational development of the smallholder traditional farming sector is therefore essential for ensuring production of adequate food supplies for a rapidly increasing population. Stable growth in production of food and cash crops is also important for stimulating growth of industrial urban sub-sectors of the economy, through provision of raw materials for processing and cheap food for the urban working class (i.e. forward linkages).

Declining agricultural performance is a major driving force behind growing poverty among African smallholder farming populations, and its recovery offers the greatest prospects for rural populations to escape out of poverty. Food insecurity among the vulnerable poor rural farming populations induces a risk-minimising conservative attitude towards farming and livelihood systems (Dorward, et al., 2004). This attitude sustains traditional farming systems when adoption of innovative technologies and unconventional livelihood strategies are required to get out of entrenched poverty and food insecurity. By locking out riskier but highly rewarding farm production and consumption possibilities, the same conservative traditional farming and livelihood coping systems that make it possible for the poor to survive their poverty also limit their prospects for propelling themselves out of poverty through transformational agricultural development. There is, however, a disturbing lack of clarity in the literature on the nature of the dynamic interactive and iterative forces driving Africans into poverty.

## **4. Poverty, food insecurity and policy**

When the poverty and food insecurity of poor smallholder farmers are known to emanate from subsistence farming systems, the rationality and seriousness of the poor families who continue with subsistence agriculture as a primary livelihood strategy are often questioned. Yet most attempts to impose on the poor alternative technologies and farming systems or livelihood strategies have had very limited successes and often have left target beneficiaries worse off. Juxtaposing the farming systems and livelihood strategies of the poor against those of their wealthier counterparts often results in tacit condemnation, rather than the development of a better understanding of the structural predicaments sustaining poverty and food insecurity in the African villages. When the root causes and behavioural manifestations of poverty and household food insecurity are not understood, then policy interventions are often ill-informed and unlikely to succeed in moving the poor out of poverty and food insecurity (Mano, 2006). To change the poverty outcome, progressive pro-poor policies and institutional innovations are required. These should be capable of transforming the economic and institutional environments that are presently sustaining poverty in order to offer to the poor and the vulnerable new possibilities for improving livelihoods and food security. This has been the stance taken by most sub-Saharan African countries. In Kenya, though, major attention was given to macro-economic stability (i.e. the external environment). This would, it was hoped, deal with appropriate market incentives to drive production and enterprise development. The institutional arrangements were rather secondary, and were severely hampered by poor infrastructure (Kinyua, 2004).

The key to addressing smallholder food security and poverty issues rests with innovations that mitigate internal constraints and provide external economic opportunities for the poor. The search for appropriate pro-poor development strategies must focus attention on getting the policy and institutional conditions right to enable the poor to enhance their productivity and income realisations from their smallholder agriculture, as well as from their other livelihood strategies. New opportunities for the poor must be created without reducing livelihood opportunities and possibilities for the existing rich, food-secure rural populations. Underlining the divergence of livelihood choices of the rich food-secure populations from those choices made by the rational but vulnerable poor rural populations are fundamental differences in household-specific circumstances, and differences in their institutional access to market opportunities and support services. There is a subset of behaviour-defining external drivers and internal, household-specific factors that are important for getting the poor onto sustainable income and food security growth pathways.

As implied earlier, fundamental factors driving livelihood and food security performance of smallholder farmers fall into two dynamically linked internal and external categories. The external factors are the macro-economic and policy factors that are fixed for individual families and set the frontiers of their livelihood possibilities. Internal factors are the household-specific micro-economic circumstances which separate the possible from all available livelihood strategies. The domestic macro-policy environment is either enabling and uplifting to the rural poor

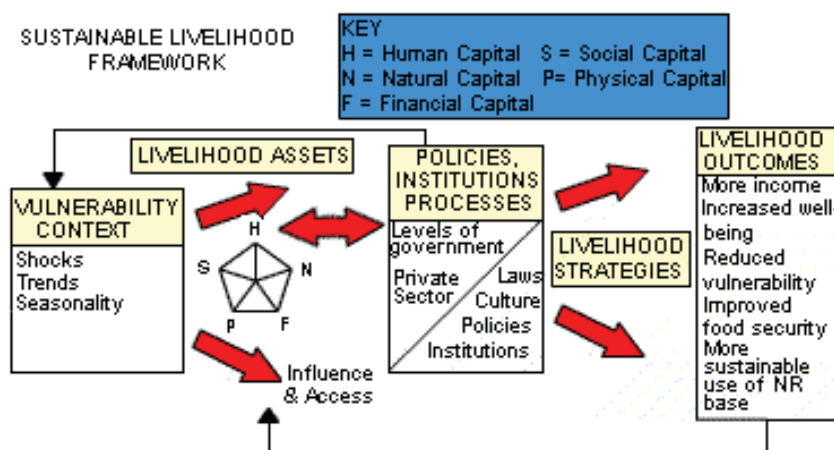
or disabling and stifling to their livelihood opportunities. In many cases there is very little that the poor can do that they have not tried already to improve their incomes and food security situations. Sometimes the food-insecure populations could do more to take advantage of currently available opportunities for improving their expected incomes and reducing their food security risks. In most cases, appropriate domestic economic and market policy reforms that inject new resources and new technologies, and improve access to new market opportunities for the rural poor, are key to tackling poverty and food insecurity among the semi-subsistence smallholder African agricultural populations (Colman, 2000). However it is important to note that in the past international donors to Africa, driven by multilateral institutions' philosophy at the time, argued that markets would be sufficient to support sub-Saharan Africa's smallholder agricultural transformation. That view has changed (AGRA, 2007; FAO, 2008) and a new policy, which calls on governments, donors, the private sector and civil society to work in partnership to promote the rapid uptake of improved agricultural practices at national scales, has come to the fore.

Domestic macro-economic policy and the agricultural commodity market environment can either enable or disable rural farm households' capacity to increase their agricultural incomes and food security. Policies that stimulate domestic economic growth can potentially stimulate smallholder agricultural growth through increased demand for food and agricultural commodities. Growing industrial and service sectors have the potential to provide employment to surplus family labour and motivate rural families to invest in higher-yielding, capital-intensive agricultural technologies that liberate some family members to seek competitive jobs in the urban wage markets. However, industrial growth translates into rural agricultural income growth only when smallholder farmers enjoy competitively priced access to agricultural and food markets that create wealth from agriculture for farmers, rather than using pro-urban pricing. Unfortunately, in many African countries there has been a lack of access to these markets (Dardel & Mano, 2004). Enabling economic and sector-specific policies that sustain growth in food and agricultural production from the smallholder sector enhances incomes and creates wealth essential for transformational development of semi-subsistence farmers, capitalising on the diversity of available on-farm and off-farm livelihood strategies and thus yielding robust incomes.

An enabling economic policy environment that ensures development of essential rural market infrastructure – roads and communication systems – is vital for enhancing efficiency in production and consumption choices (Dorward & Kydd, 2004). Subsistence farming does not take advantage of efficiency benefits associated with specialisation and exchange, and is relatively inefficient as a way of ensuring household food security through food self-sufficiency (Ellis, 1996). Governments also play an important role in providing an enabling institutional and legal framework which guarantees basic economic freedoms and security of property rights for the poor as well as the rich members of the community. The four basic pillars of development implied here – transport infrastructure, agricultural research and extension of appropriate technologies, security of property, and access to markets – define the basic preconditions for stimulating sustainable transformational development of smallholder agricultural production and livelihood systems.

An enabling macro-economic and marketing environment is also crucial, but not sufficient for sustaining better production and livelihood performance of smallholder agricultural households. In Kenya, the stable macro-economic and marketing environment did not yield a strong rural smallholder production base in the 1980–2000 period. When the domestic macro-economic situation is stable and market conditions conducive, and all external constraints are non-binding, household-specific internal socio-economic circumstances become the critical determinants of food security and livelihood outcomes of agricultural populations. Adequate ownership of livelihood capital assets is essential for pursuing a range of livelihood opportunities, and is a key determinant of livelihood performance and ability to accumulate assets for optimal production and for consumption smoothing in the face of seasonal climatic and market risks (see Figure 2). Reducing asset poverty is the key to enhancing food security and livelihoods for poor and vulnerable rural agricultural populations. All transformation of structures and processes, though influential, plays a second-tier role in shaping livelihood strategies in order to attain higher livelihood outcomes (DFID & FAO, 2000; Dorward et al., 2004).

Figure 2 – Sustainable livelihoods framework



Source: DFID & FAO, 2000

The livelihoods approach recognises that households need to possess assets essential to their livelihood strategies: human capital, natural capital, financial capital, social capital and physical capital. Households adjust to their physical, social, economic and political environments by using these assets, through a set of livelihood strategies designed to strengthen their wellbeing (Stokes, 2003). Households are only viewed as being sustainable if they can adjust to threats without compromising their future ability to survive shocks to their livelihoods.

Once vulnerable households have the minimum capacity to produce marketable surpluses, they are able to progressively reduce their exposure to livelihood risks through their livelihood strategies and investments in assets to increase income and wealth holdings. Zimbabwe's experience during the first decade of independence confirms the ability of smallholder farmers to self-finance their transformational development from subsistence agriculture to diversified market-oriented agriculture subtending higher incomes, greater resilience and better food security prospects (Eicher, 1995). With improved access to technology and markets, acreage and yields of maize and cash crops increased beyond subsistence needs, creating the space and financial surplus for farmers to explore high-value cash crop production opportunities, as well as investment in children's schooling to further diversify family incomes by positioning their children for remunerative formal employment in industry and commerce.

## **5. Effects of food security-focused policy intervention**

As section 4 suggests, support given to small farmers has been premised on the realisation that there are sections of society that tend to be more food-insecure than others. It also suggests that food insecurity is closely linked to poverty and poor agricultural performance in rural areas. Therefore intervention that increases own-production can go a long way towards addressing food insecurity, not only by providing the food itself but also by providing the means through which such food can be acquired. However, the results of policy intervention have been mixed.

In Zimbabwe between 1980 and 1986 staple maize output more than doubled compared to the previous decade, on the back of favourable commodity prices coupled with improved infrastructure and institutional services. Land area planted with maize rose substantially, and the amount of marketed maize produced by small-scale farmers represented 47% of total national maize output in 1986 and had risen to 90% by 1989 (Stanning, 1989). Marketed output of finger millet rose from 386 tonnes in 1983/84 to 12 500 tonnes in 1985/86. The production of cash crops (which provides the means by which livelihoods can be enhanced) by small producers also increased after agriculture policy was refocused towards these farmers. Cotton production rose from 160 000 tonnes in 1980 to 350 000 tonnes in 1990, which represented a 50% increase. All in all, after a decade of pro-smallholder policy support, by 1991 smallholder farmers contributed more than 50% of national maize production, more than 60% of cotton, 99% of sunflowers and most of the small grains and groundnuts that were formally marketed (Eicher, 1995; Mudimu, 1992; Rohrbach, 1988).<sup>4</sup> Such was the success of the interventions in the 1980s that this period is referred to as Zimbabwe's smallholder revolution (Rukuni & Eicher, 1994) and is attributed mainly to the linkage between technology, service organisation and institutions (or parts thereof) developed specifically to deliver on the policies adopted to advance smallholder agricultural development. Similar success at a smaller scale was recorded by coffee farmers in Malawi (Chirwa, et al., 2007)

Most research in Zambia and some from Uganda and Kenya shows that policy adopted was mainly directed at providing smallholder producers with relatively easy market access, without necessarily giving direct support that targeted smallholder production (supply-side) explicitly (Bezuneh, et al., 1998). As in the Zimbabwean case, subsidies for inputs were generally used to enable these producers to afford fertilisers and seeds during the pre-structural reform period. This, though, did not substantially improve food security in these countries for several reasons, including the existence of large, deeply embedded socio-economic inequalities, poor access to quality land by the majority of households, lack of appropriate technology for an ever-changing

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<sup>4</sup> Note, though, that these increases levelled off and in fact were reversed in the 1990s, when pressure on central budgets forced the withdrawal of subsidy inputs and macro-economic adjustment necessitated by poor macro-economic management and political crisis.

production environment, lack of adequate institutional and infrastructural support and poor support services. As a result, the labour participation rates in rural agricultural production were very low. The percentage of household labour that spent more than 50% of their labour time on agricultural production kept falling, and household and individual food insecurity worsened (Obwona, 2002).

In analysing the successes and failures of supply-side, state-led policies and demand-side market liberalisation in sub-Saharan Africa, Dorward et al. (2004) find that some of the major issues that held back progress in these countries included problems related to public goods, complementary coordination of policy, and market development. They describe a common pattern of government policy in successful green revolutions in terms of two active policy phases. The first phase establishes the basics, with investments in public goods to develop technologies that will raise small farms' potential productivity. During this time, it might well be that extensive production and other non-efficient types of production could be pursued. Then the second phase kick-starts markets, with carefully coordinated complementary investments to improve small farmers' access to the financial services and input and output markets necessary for technology adoption. This reiterates the important role of not only sequencing and effectiveness, but also complementary investment and market development in enhancing rural agricultural development. Unfortunately, in most sub-Saharan African countries this complementary sequencing has been poor; therefore most intervention has not actually improved food security in these countries.

Nevertheless, agriculture still maintains its important role in the rural and the national economy. Self-employment trends in agriculture show that agricultural employment and self-employment exhibit a slight decrease over time, and that the impact of this decrease in male and female employment differs among countries in sub-Saharan Africa (Mellor, 1984). To sustain food security, availability, access to and utilisation of food have to be secured. Clearly, the challenges of making a positive impact on food availability (i.e. supply-side) are firmly rooted in the ability of rural-dwellers to access production inputs and land.

## **6. Land reform, food security and employment**

The Integrated Food Security Strategy of the South African government and the land reform policy of the Zimbabwean and Namibian governments highlight land, among other things, as an important factor in food security. This is because there cannot be smallholder production and household food security if households do not have access to land of enough quantity and quality to make a difference in either the quantity produced or the income from the produced output. Those who are able to work but are unemployed across most of Southern Africa do not have access to any social welfare programmes, and are vulnerable to food insecurity. Such people can significantly reduce their vulnerability to food insecurity with access to land for smallholder production and sales. Many rural people in this region therefore depend very much on wage or non-farm employment. In other words, employment is important in most rural areas, but as farm jobs have continued to dwindle and poverty spreads and deepens, vulnerability to food insecurity also increases.

The StatsSA 1997 rural survey suggested that in South Africa as many as 71% of people living in rural areas (in former homelands) had access to some form of land for farming (Bonti-Ankomah, 2001). However, the majority of these people were engaged in subsistence farming. In various parts of Southern Africa very little income was generated from the sale of diverse crop outputs and livestock in such households which could supplement their food intake with smallholder production; but evidence from a range of sources indicates that the small amounts generated are usually crucial for dietary diversification and employment in a high-unemployment sub-region (Rukuni, et al., 2006). The 1999 October Household Survey (Stats SA, 1999) also indicates that about 7.96 million people produce agricultural goods for own consumption and income. About 81% of these people, however, produce agricultural goods mainly for own consumption. This is quite important for food security since between 2002 and 2007, the total number of black South Africans involved in agriculture was in the order of 4 million people or more (PLAAS, 2008) and it is this group that has the highest levels of food insecurity.

As part of a study to monitor the quality of life of land reform beneficiaries, May et al. (2000) concluded that land reform could potentially reduce the poverty rates in rural areas by 1%. This figure, though it seems to be very small and questionable, does indicate that land reform can reduce poverty and lower the vulnerability to food insecurity in South Africa. The larger the size of the available land, and the smaller the number of beneficiaries, the higher is the farm income per household and the lower the vulnerability to food insecurity. Mlambo (2000) also finds that rural households with a sizeable amount of land are better off (in terms of personal welfare) and are less likely to be poor and food-insecure than those with marginal lands or without land.

Most of the studies mentioned above, however, considered only agricultural production in estimating household incomes from land. Land can be and has been used in various parts of the world, and in South Africa, to create other rural livelihoods. Rural people make use of wild and domestic plants and the spaces around them. These livelihoods include the collection of natural resources such as fuel wood,

edible herbs and fruits, aquaculture, game-meat, medicines and other items, either for direct consumption or for sale (Shackleton and Shackleton, 1999). This is critical for food security. International experience also shows the importance of access to land and land reform in alleviating poverty and hence food insecurity.

Evidence from further afield also indicates the importance of land access. The consequence of reforming landholding and access in China was that there was a reduction in income-based absolute poverty to an average of approximately 6–11% in 1979–1981 (El-Ghonemy, 1990). There was also a sustained reduction in the number of the poor, from about 240 million to about 50–80 million, over the same period. Furthermore, the agricultural growth rate, crop yields and per capita food grain production rose substantially. South Korea also experienced considerable improvement in livelihoods after land reform. The South Korean land reform programme resulted in 60% increase of the total cultivated land area and an improved Gini coefficient of land redistribution from 0.729 to 0.384 between 1945 and 1965. The rate of growth of agricultural output was impressive by international standards. The average annual rate of food production increased by 4%. Average farm income per household also increased by 51.4% between 1963 and 1975, and the Gini coefficient in income in rural areas was at a low level of 0.298. Poverty was thus reduced at a fast rate of 20% per decade between 1945 and 1950, and at 10% per decade from 1965 to 1978 (El-Ghonemy, 1990).

Land reform programmes in Latin America and Africa have produced mixed results in terms of their impacts on poverty and food security. This can be attributed to the fact that most of the land reform programmes in Latin America and Africa have been partial reforms, in the sense that land redistribution was the main focus and not much support was given to beneficiaries. This is in contrast to most land reform programmes in East Asia, where additional support was an important part of each programme. In addition, most land reform programmes in Latin America and Africa adopted collective production methods for beneficiaries rather than focusing on individual farmers. These differences are important in understanding the effect of land reform in different parts of the world, as they interact with other internal and external production and market conditions. Additional support for land reform beneficiaries is therefore important.

## **7. Effects of government provision of work programmes**

One of the ways in which governments try to improve the livelihoods of rural populations by creating an opportunity for them to access some cash or in-kind earning is through provision of public works programmes. There is very little evidence of the effects on food security of governments' direct provision of support using work programmes. However, effects of food-for-work programmes in rural Kenya, which differ from those in Zimbabwe, indicate that programme participants have net returns 52% higher than non-participants, most of which are due to induced effects of capital formation on own-farm production (Kinyua, 2004). Greater capital formation increases the opportunity cost of participants' time, encouraging a transition over time from food-for-work activities to greater own-farm production. Food-for-work increases food demand, employment and marketable surplus. In this respect, intervention that gives direct experience and acumen seems to produce impressive results in fostering downstream activities that lead to improved security. It is important to note that direct intervention of this type is only preferable in circumstances where self-employment opportunities are limited. In Zimbabwe food-for-work programmes were poorly resourced and very short-term; therefore they did not foster any real learning or income potential (Matshe, 2006). They were just meant to address a temporary labour shortage at particular times and were not even based on any thought-out strategy.

## 8. Summary of success factors

Access to livelihood assets, strong institutional support and a favourable external environment play a crucial role in smallholder agriculture's ability to produce and significantly contribute towards reducing food insecurity. Where producers lack extension services, for example, yields can be as low as 20% of the total possible (Malawi) and a lack of draught power leading to delays in planting (or other operations) can result in up to a 30% reduction in yield (Zimbabwe).<sup>5</sup> These decreases also affect labour participation rates and tend to drive people (mostly youth) out of the sector.

Infrastructure and extension provide a much more complex challenge. In addressing food security issues in Kenya it was recognised that there are many extension service providers within government, non-governmental organisations, the private sector, religious organisations and community-based organisations. There are also considerable resources (human, physical and financial) held by these organisations. However, their use is uncoordinated, with little impact on the communities towards which they are directed. The consistency and regularity with which farmers are assured of these resources affect their effectiveness (Kinyua, 2004). It has already been established that extension visits can change farmers' output by more than 25%, depending on the level of education of the farmer. In Zambia and Malawi it has been shown that a single extension visit can increase food production when coupled with optimal productive assets. This increases labour use by more than a third (Diao et al., 2007). The Zimbabwean success story of the 1980s mentioned earlier in section 5 was heavily influenced by close coordination of all services affecting production activity including appropriate research and development, but crucially, an expanded extension service that was parallel to none in Africa (Eicher, 1995).

Empirical work in Malawi and Zimbabwe, and Indian econometric work using farm household, rural economy and computable general equilibrium models to analyse the structure of different rural livelihoods and to simulate policy impacts on livelihoods, rural growth and poverty, have highlighted very diverse constraints, opportunities and behaviour among different household types, and confirmed the importance of smallholder agricultural growth for poverty reduction through its impacts on labour and grain markets (even where it accounts for less than 50% of rural incomes). However, large productivity increases are needed from labour-saving technical change if smallholder agriculture is to drive pro-poor growth (Dorward et. al., 2004)

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<sup>5</sup> In Zimbabwe, it was established that a 6-week delay in the planting of maize leads to a drop in yield of up to 30% (DRSS, 1994).

## 9. Conclusion

Evidence of smallholder production as a means to achieve food security from the region is patchy and contextual, with some countries (e.g. Zimbabwe, Malawi, Kenya) experiencing increases (in some circumstances) and decreases (in others). It is clear that with a stable macro-economy and strong, consistent policies on institutional support, production of food and other agricultural commodities can improve the food security situation of poor households. Efforts to boost agricultural production must focus largely on increasing smallholder production and livelihood options. Realising the potential of food and agricultural production for reducing poverty and hunger depends largely on the extent to which smallholder farmers are able to participate in productive and remunerative farming and off-farm activities. However, poor results of interventions occurred when policies were not complementary and/or were inconsistent with the pertaining macro-economic environment.

The high levels of hunger in the world, particularly in the rural farm household sector, and the difficulties in reducing it even when food supplies are high, highlight a fundamental problem of access to food. Even low food prices will not fully address the problem of inadequate access to food, which is also affected by the ability of the poor to produce enough food and/or generate sufficient income to buy it. Additionally, since most poor rural households rely on agricultural production for a significant share of their income, increasing agricultural productivity is intimately related to reducing food insecurity and rural poverty. This requires attention to the totality of livelihood assets available and accessible to households. It follows that increasing food production and productivity should go beyond the objective of reducing market prices, and seek to improve access and availability within the household.

Policies to support smallholder productivity, including increased access to land and institutional support, boost food availability and lower local food prices, generating higher incomes and increased demand for locally produced goods and services, and resulting in broad-based socio-economic development in rural areas. This is the primary reason why agricultural growth is more effective in reducing poverty compared with growth in other sectors. Moreover, policies promoting smallholders and more equitable land distribution were at the heart of country success stories during the green revolution in several Asian countries (e.g. China, India and Indonesia), but these have to be accompanied by:

- appropriate and high-yielding agricultural technologies;
- local markets offering stable output prices;
- seasonal finance for purchased inputs;
- infrastructure to support input, output and financial markets;
- associated state investment in infrastructure, research and extension; plus
- interventions such as price stabilisation, input supply, guaranteed procurement and credit subsidy, where necessary.

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