HUMAN SCIENCES RESEARCH COUNCIL

Integrated Rural and Regional Development

FOOD SECURITY IN SOUTH AFRICA: KEY POLICY ISSUES FOR THE MEDIUM TERM

Position Paper prepared by Mike de Klerk, Scott Drimie, Michael Aliber, Simphiwe Mini, Reuben Mokoena, Rendani Randela, Salome Modiselle (all IRRD), Professor Coleen Vogel (Geoarc, University of the Witwatersrand), Dr Cobus de Swardt (PLAAS, University of the Western Cape), and Professor Johan Kirsten (Agricultural Economics, University of Pretoria)

The Human Sciences Research Council wishes to thank National Treasury for the support given to the production of this paper. All opinions expressed are entirely those of the respective authors.

January 2004

CONTENTS

ACKNOWLEDGEMENT AND DISCLAIMER

The Human Sciences Research Council wishes to thank National Treasury for the support given to the production of this paper. All opinions expressed are entirely those of the respective authors.

INTRODUCTION

Identification of focus areas

South Africa is unlikely to appear in the 'high risk' category in any international rating of food security. Despite its comparatively unfavourable natural resource base, in most years, it is a net exporter of agricultural commodities. Its per capita income is high for a developing country. It does not have a tight foreign exchange constraint. It is not landlocked. Its transport infrastructure is generally good. Its constitution entrenches the right to adequate nutrition for all and it has devised a national Integrated Food Security Strategy (IFSS). Clearly, food ought always to be available in South Africa. So why should food security be a priority policy issue for South Africa?

A first part of the answer is to be found in the acute food shortages and hunger presently being experienced just across the border. In Zimbabwe alone, 7 million people are reckoned to be in danger of starvation. But unlike most previous famines, there are strong indications that this one is not simply a short-term phenomenon brought about by a single season's unfavourable weather or even by temporary political turbulence. While both of the latter are certainly important immediate causes of the current emergency, in combination with the HIV/AIDS pandemic, it appears that the damage caused to so many rural households' – and indeed to national - physical, financial and human asset bases will make it increasingly difficult for them to restore their production to previous levels, even when the rains and political stability return. In other words, food insecurity that is already widespread and acute, now looks likely also to become chronic.

Independent of food security within its own borders, ***a first major policy question for South Africa (Issue 1) is whether and (if appropriate) how best to prepare for and respond to the likelihood of chronic high levels of food insecurity in fellow SADC countries. Issue 2 explores further how HIV/AIDS is impacting on food security and what policy implications follow.***

Yet, even given its own national 'food secure' status, more than 14 million people, or about 35% of the population *in South Africa,* are estimated to be vulnerable to food insecurity, while the development of as many as 1,5 million, or about one quarter, of children under the age of 6 is reckoned to have been stunted by malnutrition. The Constitution - if not society's values and the sheer economic cost of forgone production potential - dictates the need to reduce and, if possible, eliminate vulnerability to and the negative consequences of food insecurity within South Africa.

More often than not, the reference to 'food' in 'food security' is taken to identify the problem as essentially agricultural. While it would be incorrect to characterize it as

being focused exclusively on agriculture, South Africa's IFSS declares its 'primary objective (to be) to overcome rural food insecurity by increasing the participation of food insecure households in productive agriculture sector activities'. Since roughly 70% of the country's poorest households live in rural areas, the focus of this paper is on food insecurity in rural communities, although in Issues 8 and 9 – on the role of food gardens and on the impact of price fluctuations, respectively – explicit consideration is also given to urban food poverty.

Increasing domestic agricultural production may indeed be the valid mainspring of strategies to reduce food insecurity in countries – including several in the Southern African Development Community (SADC) – in which agriculture is still one of the leading contributors to gross domestic product (GDP). But where this is no longer the case – as in South Africa – while it is certainly true that agriculture has played an important historical role in putting food on the table for low income households, that it continues to do so and that it could indeed contribute more than it presently does, it is essential to premise policy on a clear understanding that household food security is primarily a function of total household income, however derived, and much less a function of the food that individual households produce for their own consumption. Composite income estimates should therefore include the value of agricultural (and other) goods produced for own consumption (see Issue 3 below).

All but a very small proportion of households, even in rural areas, are net deficit food producers in South Africa. Given the nature of our economy and the particular endowment of our natural resources, it should not be a political objective to change this to more than a limited degree. This does not mean that it would be a misallocation of public resources in South Africa to try to raise the contribution of agriculture to low income households' food security – a valid policy goal for a number of reasons. Vegetable and fruit gardens have a particularly important potential role in improving the flow and composition of nutrition (see Issues 2, 8 and 11). But, as explained below, additional spending geared to this end should be carefully balanced against alternative approaches, such as boosting welfare grants or delivering more food parcels, both indispensable short-term measures. Investment in agriculture should yield sustained benefits in the long run, but it will take an equally sustained commitment on the part of the public sector to expenditure and institutional restructuring to achieve it. Reducing the constraints on food production faced by low-income households and convincing them of the returns to be had from devoting more of their own resources to agriculture is not a short-term task.

Roughly 1,2 million households in the old 'black rural areas' derive some part of their income from farming. In general, this is a residual activity conducted after most other activities necessary for the functioning of a household have been completed. (To avoid misunderstanding, 'residual', in this context, has no negative connotation. It refers solely to 'time remaining for farming' - which it should be a goal of development policy

to increase!) Typically, about one half of the labour time of resident adult, able-bodied householders will be spent on farming but will generate no more than about 5% of income, usually mostly in kind. By far the greater part of household income generally consists of welfare payments and migrants' remittances, with earnings from local wage employment and/or self-employment in non-farm microenterprises sometimes adding a little as well. ***Issue 3 elaborates on what is known about the composition and determinants of income of food insecure households in South Africa.***

Information about the geographical distribution of the most food insecure households in South Africa is less detailed than one would wish and it is not automatically the case that that the poorest households are also the most food insecure – a household's total income may be low, but be composed largely of food crops produced for own consumption or, for example, of farm workers' rations, thereby making it less food insecure but leaving it with very little disposable income to service its other cash needs. But, to the substantial extent that these two categories do overlap, since the majority of South Africa's poorest households are known to live in the former 'black rural areas', the following highly stylized picture has a number of crucial conclusions and implications for policy:

- Both directly and indirectly, the growth of the macroeconomy, and in particular of employment levels, remains one of the most important determinants of household food security. Macroeconomic management that achieves faster growth and greater job creation without seriously negative side effects is an overarching fiscal and monetary policy challenge.

- Welfare payments are perhaps a still more important determinant, since so many of the poorest households will, at least temporarily, not be able to count on remittances. But they are precarious, since, so often, they depend mainly on the survival of an elderly household member. Though grants should ideally be no more than a 'last resort' component of a safety net and should be designed to minimize the disincentive to engage in self-supporting economic activities, anything that can sustainably be done to increase the amount, the range of types and the accessibility of welfare payments will significantly help reduce food insecurity. ***Issue 4 focuses on how infrastructural and institutional constraints affect access to non-agricultural components of income.***

- While, on the average, agriculture contributes only a small part of total household income, its importance increases considerably for households – typically those affected by HIV/AIDS - that do not receive remittances and/or welfare payments and who are therefore among the most food insecure. ***Issue 8 highlights the potential contribution of home gardens to food insecurity, particularly in such instances, both in rural and in urban areas.***

- Since it is mostly women who are responsible for agricultural production, interventions that enable them to increase the productivity of time spent on farming activities and to spend less time on routine household tasks, such as fetching water, firewood and groceries, are likely to be most effective in increasing agricultural output. Readier access to functioning, affordable infrastructural services – especially piped water, electricity and transport – should therefore be an effective catalyst for increasing food security. ***Issue 6 examines how infrastructural and institutional supply-side constraints affect food production and the implications thereof.***

- Better infrastructure and service delivery will also help households increase income earned from local non-farm microenterprises – sometimes craft manufacture, but more often services such as retailing conducted in small towns. ***This extends the exploration of Issue 4.***

- Improving access to microfinance (non-specific, short term liquidity) is a key co-facilitator of almost all kinds of local microenterprise activity, including farming mainly for own consumption – the dominant form of agriculture in the former 'black rural areas'. Most microfinance is provided by the private sector or local co-operative groups, but parastatals such as the Land Bank could – and arguably should – play a more active role in this respect. Where most agricultural production is not for the market, conventional agricultural credit is generally inappropriate. ***This further extends the exploration of Issue 4.***

- Government has an important direct role to play in generating local non-farm income earning opportunities through its public works programmes. It is essential that the evaluation that most current programmes are now undergoing be used to place them on a more sustainable footing rather than to terminate them, wherever possible. In addition, since the infrastructure development approach that characterises most current public works programmes generally leads to a substantial contraction in local employment opportunities once capital spending is over – with only a relatively small number of maintenance jobs remaining – it is important to consider the potential for public *service* options, such as day-mothering or running soup kitchens, to complement public works with employment which also has positive externalities but which is more likely to be ongoing as well as more gender-appropriate. ***Public works and public service programmes both generate important opportunities to earn non-farm income (see Issue 3) and make up key components of proactive systems to minimize and respond to food emergencies (Issue 10).***

- Basic risk management principles, no less than limited capital and management resources, determine that few low income households that have access to farm land will wish to rely on farming for more than a relatively small part of their

income. While increasing the percentage of income earned from agriculture – say, from 5-10% to 10-15% - is a valid policy objective and will call for considerable additional public expenditure, it is important not to focus disproportionately on this objective as a means of reducing food insecurity. For this reason, it is more appropriate to attempt to achieve such an increase mainly as a valuable by-product of improving infrastructure rather than through increasing expenditure on agriculturally specific support measures, such as extension services. ***Issue 6 deals with the impact of infrastructure on agriculture, while Issue 7 examines how and why agricultural support services, such as training and extension, have deteriorated and policy issues arising.***

Though the greater part of the country's poorest households reside in the former 'black rural areas', a second substantial group is to be found among the households who have acquired land since 1994 in the former 'white rural areas' under the Department of Land Affairs' land redistribution and land restitution programmes. Thorough assessments remain to be carried out, but preliminary indications are that many, if not most, of the households involved are currently unable to derive a significant part of their income from this land. Consequently, their income levels and patterns are likely to be fairly similar. ***In Issue 5, the focus falls on how land reform – in both the former 'white' and the former 'black rural areas' - impacts on food security.***

However, the set of constraints that they face will usually differ from smallholders in the former 'black rural areas' – in particular, they will generally have more secure tenure and be served by better public infrastructure. The approach needed to help reduce the incidence of food insecurity among households in this category is therefore rather different and calls, among others, for greater and more comprehensive post-settlement support and an imaginative re-visit to institutional forms and arrangements. Individually conducted small-scale agriculture must be one of the most difficult and most precarious ways of making a living and it may be helpful to examine ways in which, for example, partnerships with well established, larger scale farmers could assist in reducing the acute capital and management constraints that most individual smallholders experience. ***Issue 5 goes on to examine the scope for and record to date of joint ventures as a means of enhancing the income of land reform beneficiaries.***

Measures of this nature to increase the agricultural productivity of land reform beneficiaries should have a positive impact on low-income household food security and are clearly deserving of public sector support. But to the extent that they draw on the fiscus, the relative numbers of households should be borne in mind: between 130 000 and 140 000 households have received land in this way, little more than a $1/10^{th}$ of the number of farming households in the old 'black rural areas'. Fiscal support should not be too disproportionate. And, whatever the gains from initiatives to increase agricultural output on resettled land, it will be no less important for resettled households to retain

access to income from the same diversity of sources on which their counterparts in the old 'black rural areas' have come to rely ***(see Issue 3)***.

It can reasonably be assumed that the roughly 30% of lowest income households who reside in urban areas are almost all among the most food insecure, given their lack of access to agricultural land. In this context, policy to reduce food insecurity clearly needs to focus more on macroeconomic growth, welfare payments and support for microenterprises. However, particularly outside the metropolitan areas, adequate delivery of basic services cannot automatically be assumed and may have significantly negative effect on food security. Poor access to water, for example, would make vegetable gardening difficult. This highlights the need both to ensure the adequacy of urban infrastructure and services and to examine the potential and limitations of urban agriculture to contribute towards reducing food insecurity. In respect of vegetable gardening, this applies equally to many rural households ***(see Issues 7 and 8)***.

Beyond measures to raise income and agricultural output, the IFSS draws attention to the need for systems, both proactive and reactive, to address acute food insecurity brought on by disasters such as drought, floods and political instability. Accessibility is a critical consideration. Though vulnerability assessment, advance warning and emergency distribution systems are all now being developed, they are still in their infancy. As clearly identifiable public goods – or services – with obvious positive externalities, these should be high priorities for public spending to accelerate their development. But the challenge posed by this group of needs extends well beyond the allocation of additional fiscal resources: more than money, it requires closer communication, co-ordination and collaboration between government at all levels and between government, NGOs and the private sector. This is an institutional problem best tackled with the assistance of organizations with international experience and that calls for determined attention from no body less than Cabinet. ***Issue 10 discusses how the development of proactive and reactive systems to minimize and respond to food emergencies best be assisted.***

Additional aspects of a comprehensive approach to policy concern affordability and nutritional adequacy. Low-income households – even those who produce some of their own food – spend a greater proportion of their income on purchased food items than any other income group and are therefore particularly vulnerable to price increases, especially the kinds of sudden – and often quite sustained - increase that are not compensated for to some degree by a rise in nominal income. The incidence of such increases has grown markedly over the past decade with the deregulation of agricultural markets and the exceptional volatility of the Rand.

The case for trying to cushion the impact on the most vulnerable groups is clear, but what is much less clear is how best to go about this. While the international currency exchange rate system has had to be taken as a given, domestic agricultural markets

appear to be more amenable to local intervention and various proposals have recently been made in this regard. ***Nevertheless, optimal intervention to stabilize or to offset the effects of volatile food prices on the poorest remains a considerable policy challenge, especially given the long history of unsuccessful forms of intervention (Issue 9).***

Nutritional adequacy is determined by the volume and composition of food intake. To the extent that both depend on the availability, accessibility and affordability of food, the preceding discussion may be reckoned to have raised most of the relevant issues already. But because adequacy of composition is also a matter of household awareness, it is a public health and a public education issue as well. In both instances, policy improvement once again has both fiscal and institutional dimensions. ***Issue 11 examines the most cost effective ways of improving public health services and public education to reduce malnutrition.***

Table 1 summarizes:

Table 1: Key medium-term issues for food security policy in South Africa

Issue no.	Focus
1.	Should public sector policy in South Africa accommodate the dynamics of the regional food market? If so, how might this best be done?
2.	How is HIV/AIDS impacting on food security?
3.	What is the extent of food insecurity in South Africa? And what are the major determinants of food security for low-income households?
4.	How is food security affected by institutional and infrastructural deficiencies that constrain access to non-agricultural components of income?
5.	How does land reform impact on food security?
6.	How do infrastructural and institutional supply-side constraints affect food production in low-income households?
7.	How and why have agricultural support services deteriorated?
8.	What is the appropriate role for food gardens in promoting food security?
9.	What influence do food price fluctuations have on food security? And how might their influence best be mitigated?
10.	How can the development of proactive and reactive systems to minimize and respond to food emergencies best be undertaken or assisted?
11.	What are the most cost-effective ways of improving public health services and public education to reduce malnutrition?

Methodology

The discussion is issue- rather than analytically-orientated. A brief literature-based review of the most relevant features of the status quo is followed, in each instance, by the identification of key issues for public policy formulation in the medium term, i.e. the period 2004-2006. The focus is primarily on policy issues that do not appear to have been adequately addressed yet by the respective Departments and/or that do not yet appear to have been brought to the attention of National Treasury and that may therefore be fruitful topics for discussion between the respective parties in developing strategy and expenditure plans for the medium term. However, instances where the

key issues are already well known but where public expenditure appears either substantially inadequate and/or sub-optimally directed are also highlighted.

ISSUE 1

SHOULD PUBLIC SECTOR POLICY IN SOUTH AFRICA ACCOMMODATE THE DYNAMICS OF THE REGIONAL FOOD MARKET? IF SO, HOW MIGHT THIS BEST BE DONE?

An appropriate response to Issue 1 hinges on the answers to three prior questions:

- What is the status quo and outlook for food security in the region?
- In what ways might South Africa have an interest in food security in other southern African countries?
- What are the most appropriate roles for the public sector in South Africa in responding to food insecurity elsewhere in the region?

What is the status quo and outlook for food security in the region?

The July 2003 'cereals balance sheet' issued by the SADC Regional Early Warning Unit shows that the availability of maize at the regional level – the best single indicator of food security in the region - looks considerably more favourable at the mid-point of 2003 than it did a year ago. From an aggregate deficit of almost 3,5 million tonnes in July 2002, there is currently a surplus of about 800 000 tonnes.

However, while production levels improved, or were at least maintained, in 8 of the 12 countries included, only South Africa produced enough for its own needs in either year. But while South Africa's surplus was more than sufficient to cover the combined deficit of all other SADC countries in the 2003/4 marketing season, there was a net shortfall in 2002/3, calling for imports of nearly 4 million tonnes, a large proportion of which was channelled through South Africa's transport infrastructure. The pivotal role played by South Africa in regional food security can hardly be more graphically illustrated.

Of the countries worst affected last year, Zambia and Malawi have made the best recoveries, with maize production up by as much 22% on 2002/3 in Malawi and with neither country having to import a significant part of its domestic needs in the current year. Even so, in both countries, there were several areas that experienced crop failure and it is estimated that by January 2004 about 400 000 people in Malawi will need food aid.

In Mozambique, total cereal output increased by 2,5% in 2003. The production of maize fell marginally, leading to a shortfall of 195 000 tonnes. This is still relatively small in terms of the country's overall needs, but it masks substantial disparities between surplus areas in the north and deficit areas in the south, only a small part of which is expected to be resolved by domestic redistribution, given the limitations of the country's transport system. Imports – probably mostly from South Africa – will be needed to feed close on a million people.

In Lesotho and Swaziland, where the 2003 maize harvest was also marginally down, almost half a million people will be in need of food aid by January 2004, much (if not all) of which will either be sourced in South Africa or will be routed through South Africa.

But it is mainly in Zimbabwe that the current crisis is located. Despite a 61% increase in the production of maize in 2003, Zimbabwe's estimated maize import needs make up the greater part the region's requirements, while the number of people who are expected to need food aid by the start of 2004 – about 5,4 million - dwarfs the combined total for the rest of the region (about 2.1 million), in spite of being substantially lower than 2002/3's 7,2 million.

Table 2, extracted by the SADC's Regional Early Warning Unit from reports by the United Nations' (UN) World Food Programme's (WFP) and Food and Agriculture Organization's (FAO) Crop and Food Supply Assessment Mission (CFSAM), summarize the major requirements for food imports and aid in the region:

Table 2: Maize import requirements, maize food aid and estimated number of food insecure people in 6 southern African countries

Country	Total maize import requirement (tonnes)	Commercial maize imports (tonnes)	Maize food aid		
			Imports	Domestic sources	People in need
Lesotho	223 000	191 000	32 000	0	270 000
Malawi	35 000	30 000	5 000	31 000	400 000
Mozambique	195 000	86 000	109 000	35 000	949 000
Swaziland	76 000	52 000	24 000	0	217 000
Zambia	0	0	0	n.a.	n.a.
Zimbabwe	980 000	370 000	610 000	0	5 423 000
Total	1 609 000	729 000	780 000	66 000	7 258 000

An analysis of the causes provides insight into the outlook for food security in the region. CFSAM ascribes the shortages to three main factors: 'drought, failed government policies and the impact of HIV/AIDS'. Of these, drought and other unfavourable natural events will inevitably occur periodically and need to be planned for on this account, but, unless climate patterns change noticeably more rapidly and extensively than expected, there is no reason to understand them as a chronic problem.

What should be regarded as 'failed government policies' is, of course, a subjective matter. CFSAM identifies specifically the Zimbabwean government's controversial fast-track land reform programme. Regardless of the politics of the programme, it is clear that 'the newly settled farmers (are un-)able to utilize all of the land (effectively) due to the lack of adequate capital and inputs (and of) collateral to procure them'. It is also equally clear that Zimbabwean government does not presently have the resources to make good these deficiencies. At least until there is a lasting resolution to the political turbulence – and probably for some while after that, while whatever administration

emerges builds its institutional capacity and either re-establishes an adequate tax base or secures sufficient foreign aid – this cause of food shortages in the region should be viewed as ongoing.

While it would clearly be wrong to identify land policy in Zimbabwe as the only instance of 'failed government policies' impacting on food security in the region, there would be wide agreement that it is much the most significant such instance. Indeed, a thorough review would no doubt yield a good many counter-examples of improvements in public sector policies – perhaps even some in Zimbabwe - that offset the negative effects of other policies. But, all of these are left aside for purposes of this short review, since, by comparison, their influence is small.

In respect of the third of the major causes identified by CFSAM, while it is certainly correct that 'more work needs to be done to quantify the impact of HIV/AIDS on households and on institutional capacity and to better understand the dynamics between HIV/AIDS, food security and governance' – one of the major findings of the joint SADC-UN Regional Consultation on Humanitarian Assistance held in June 2003 – enough is already known (see Issue 2) to be sure that the spread of the disease will significantly and progressively undermine the productivity of agriculture in most southern African rural communities in the medium- to long-term.

With two of the three major causes of food shortages in the region most realistically viewed as 'ongoing', the medium-term outlook for food security must be, at best, for current mean levels of aggregate output and deficit to be maintained, with annual fluctuations around the mean induced chiefly by climatic factors.

In what ways might South Africa have an interest in food security in other southern African countries?

Developments in food markets in fellow SADC countries have a direct and tangible impact on South Africa in a number ways.

- *economic:* food shortages, for which relief is sourced mainly from South Africa, reduce supply and drive food prices up in South Africa, with a range of negative downstream consequences, for example on inflation and on monetary policy. This is particularly serious in years when South Africa has little or no surplus of white maize to export. The impact of such price changes always bears most heavily on South Africa's own food insecure households (see Issue 9).
- *logistical:* whether to transport locally held stocks or to act as a conduit for imports – international food aid is especially likely to be sourced offshore – South Africa's transport infrastructure comes under additional strain when large quantities of grain have to be moved as a matter of priority to relieve shortages in landlocked neighbouring countries. In the recent past, ports' handling capacity

has been a particular bottleneck. This also has a number of negative knock-on effects on the local economy, both time- and cost-wise.

- *sociological and administrative:* food shortages elsewhere in the SADC can be expected to increase the rate of (usually illegal) immigration into South Africa, with all of the attendant strains on the labour market (with unemployment already high), social cohesion, administrative, security and welfare services (especially if certain categories of grants are to be awarded to foreign nationals) and urban and rural infrastructure.
- *geo-political:* the additional political leverage that the region's reliance on South Africa's productive and infrastructural capacity might be perceived as generating for South Africa may well be more than neutralized by the increased animosity and suspicion that awareness of increased dependence generates in South Africa's neighbours. The pace of regional integration is quite possibly hindered, rather than advanced, by chronic food shortages in the majority of SADC countries.
- *humanitarian:* it is – rightly - difficult for South Africa to ignore the needs of so many food insecure people in fellow SADC countries. Regardless of all of the perfectly valid self-interested reasons, just outlined, for providing assistance to food-deficit neighbours, as the wealthiest country in the region, South Africa also has a powerful moral obligation to assist – to which it has usually responded positively.

With the exception of food aid donations, all of the above are difficult to quantify. But there can be no doubt about their existence and their importance. Clearly, it is in South Africa's own interests for it to assist other SADC countries both in resolving their short-term food emergencies and in facilitating longer-term development to reduce the likelihood of future food crises.

An exercise to provide a rough estimate of the costs for South Africa that such crises currently generate would be valuable in helping to assess the quantum of public – and private – funds that could justifiably be allocated to provide various forms of assistance. This would obviously not be a simple task, nor would it be made any simpler by knowing that there would probably be much less than a one-to-one correspondence between expenditure to increase the availability and accessibility of food outside South Africa's borders and cost-savings inside the borders. But it should nevertheless help to determine an approximate limit to the size of an appropriate budget envelope. Clearly, such an undertaking is beyond the scope of this paper.

What are the most appropriate roles for the public sector in South Africa in responding to food insecurity elsewhere in the region?

Needless to say, the South African public sector is by no means the only potential player in the arena. The public sector in the countries concerned and abroad, the private sector (in South Africa, in those countries and abroad), international publicly funded organizations, the international donor community and non governmental

organizations (NGOs) are all also able to assist and have particular respective comparative advantages.

Three touchstone questions that may help to identify the most appropriate roles for the public sector in South Africa are:

- is the private sector likely to do it better?
- are there large enough non-recoverable positive externalities to make it unattractive to the private sector to do so?
- is this a role traditionally played by international bodies and/or NGOs?

The role perhaps most often discussed for the public sector in South Africa is for it to carry a strategic stockpile of grain – real or virtual - large enough to be enable it to react quickly to over-the-border food emergencies. There are several reasons why this is probably not a good idea. First, if it were for the public sector to do this, it would most likely be more cost efficient for the stocks to be housed in the recipient countries rather than in South Africa. But, as the analysis of Issue 9 indicates, the private sector is generally more cost-efficient at doing this than the public sector, and, unless the latter intervenes to introduce and enforce price controls, there are usually not such large non-recoverable positive externalities as to make this unattractive to private traders. If the state does wish to intervene to offset price hikes, this is almost certainly better done by subsidies of some kind – if the state can afford them – or by soliciting external food aid.

A related potential role government concerns initiatives that it could take to reduce the volatility of the domestic price of maize and other major field crops, which could help reduce the retail prices paid by both domestic consumers and consumers in food deficit importing countries. Issue 9 also addresses some of the difficulties of undertaking such initiatives.

Though food aid has traditionally been the domain of international donors, governments, including the South African government, have often contributed too. Comparative advantage in this instance resides partly in the policy focus and partly in the volume of the financial resources of the donor. At least in respect of the latter, the South African government is well qualified and, as pointed out above, there is clearly a strong case for it to continue to play this role, both on principle and to the extent that international donors do not make good food deficits.

Given the importance of HIV/AIDS as a cause of household food insecurity, one might argue that South Africa's role as a donor could be extended to the supply of anti-retrovirals. But, given its own ambivalent stance on the use of these drugs, and, since the country is itself potentially a recipient of this form of aid, this is neither a particularly appropriate nor a particularly likely role for the South African government.

The National Department of Agriculture could extend technical co-operation, for example in respect of research and development (R+D) or veterinary services, to assist

agricultural production in other SADC countries and, in partnership with international bodies such as the Consultative group on International Agricultural Research (CGIAR), has already been instrumental in trying to marshal the continent's agricultural research resources to better effect. There is almost endless potential to this role, but South Africa's own public agricultural research and development capacity is currently struggling with transformation and is less well positioned to extend outreach than it might be.

The current Medium Term Expenditure Framework (MTEF) does provide an additional R1 billion for R+D spending and it is understood that the Parliamentary Grant to the Agricultural Research Council (ARC) will increase at a faster than average rate for Science Councils during the period. If it has not already been done, it would be helpful for regional food security if an appropriate part of this increase could be earmarked for extending regional co-operation. Issue 7 explores this further.

In the same vein, the early warning capacity that is housed in the ARC and in a number of South African universities could very productively be developed and extended to boost the region's capacity. Issue 10 deals with this in more detail.

Another obvious area for intervention is to strengthen and expand South Africa's bulk transport infrastructure. This has already been prioritised by government, though the institutional mechanisms by which it is to be achieved it are still unclear.

Helping bring about better governance in the region is yet another important role for the South African government. South Africa's initiatives in respect of the New Partnership for Africa's Development (NEPAD) and its support for the African Union (AU) demonstrate its recognition of the importance of this role, though the manner in which this has been played out in practice – at least in respect of Zimbabwe - has been the subject of much debate. The MTEF provides for an additional R1,3 billion for NEPAD.

A further appropriate role for the South African government is to take whatever steps it can to accelerate the pace of regional integration. This appears to be happening fastest in respect of trade and capital flows. The rapid asymmetric wind-down of import tariffs on a wide range of goods produced in the SADC engineered by the Department of Trade and Industry has to be lauded, as must the emphasis now being given by the Department and the Reserve Bank to rationalizing the structure and functioning of the Southern African Customs Union (SACU) – driven by the upcoming rounds of bilateral trade negotiations with the United States (US) and others. The delicate, but crucial, issue of facilitating human resource flows within the region remains to be broached.

All of these initiatives require prioritisation and funding – processes that National Treasury is ideally positioned to assist. Needless to say, no action on South Africa's part designed to benefit food security in the region, however well-intended, would be appropriate without first having gained approval from its SADC partners.

ISSUE 2

HOW IS HIV/AIDS IMPACTING ON FOOD SECURITY?

HIV/AIDS and the food crisis in Southern Africa

The claim that the current Southern African food crisis is inextricably linked to the widespread HIV epidemic, which has deepened the crisis, is supported in much of the food security literature and current thinking. This claim is underpinned by the fact that the region has the highest prevalence rate in the world (Lesotho 31%; Malawi 16%; Mozambique 13%; Swaziland 33%; Zambia 22% and Zimbabwe 34%), with infection levels around 25 % of the population (UNAIDS, 2002). All dimensions of food security – availability, stability, access and use of food – are affected where the prevalence of HIV/AIDS is high.

A major consultative meeting in response to the food crisis in southern Africa, organised by UNAIDS and the Regional Inter-Agency Co-ordination Support Office (RIACSO) reiterated this position and concluded that HIV/AIDS must be integral to all responses to the food crisis facing the region (RIACSO, 2002). It was argued that the devastating impact of HIV/AIDS, especially in the worst affected areas of southern Africa, was complicating the task of fighting hunger and strengthening the livelihoods of the poor. The epidemic was creating large new vulnerable groups and was rapidly eroding food and livelihood security. The UN had thus come to realise that although all food crises have long-term roots in uneven development, the fundamental difference in the 2002/3 crisis was the influence of HIV/AIDS-related morbidity and mortality, which both worsened and was exacerbated by the food crisis, creating a dual tragedy.

HIV/AIDS and vulnerable households in South Africa

This section will focus predominantly on the more than 14 million people, or about 35% of the population in South Africa that are estimated to be vulnerable to food insecurity. AIDS undermines food security through its impact on incomes and food purchasing power, on people's ability to engage in agriculture for both food and cash crop production, and its effects on diverse livelihood strategies, including those that are essentially non-agricultural in nature.

As the current crisis in southern Africa has shown, those living with or affected by chronic illness have less labour, spend time caring for others, and have decreasing experience and skills. It is widely recognised that HIV/AIDS increases the household's vulnerability since it slowly destroys the basic capacity to do things, by increasing the difficulty of going to work, cultivating fields, interacting socially, more generally, implementing diverse livelihood strategies. In fact, it attacks insidiously the core of the person's resilience. As has been shown in a number of studies, the consequences in

terms of production deficit and decrease in earnings are severe. In response to the multiple impacts, households across South Africa have responded to adapt to the conditions caused by HIV/AIDS, evolving strategies that attempt to mitigate the impacts of the epidemic.

This situation of vulnerability leaves the household more susceptible to other “shocks” such as the loss of income due to retrenchment or a failed harvest due to poor rains and inadequate inputs. The compounding impact of HIV/AIDS may force the household below the level of “vulnerability” into a situation from which it may not recover. This is due to the erosive nature of the disease with resultant losses in life, income and assets from which a poor household may not recover.

It is important to recognise that the impact of HIV/AIDS on rural households is not equal: the poorer ones are much less able to cope with the effects of HIV/AIDS than wealthier households who can hire casual labour and are better able to absorb shocks. As with other widespread disasters, another important dimension is the possibility of increasing inequality resulting from the epidemic, as there may be some who benefit from the sales of assets by farm-households attempting to cope with the long drawn-out effects of HIV/AIDS. The number of occurrences evident could lead to significant changes in the socio-economic structures of villages, redistribution of wealth and of land. HIV/AIDS infection ultimately stretches the resources of an extended family beyond its limits as both material and non-material resources are rapidly consumed in caring for the infected.

The impacts of HIV/AIDS on food security and rural livelihoods have been usefully differentiated by the FAO:

Table 3: Impacts of HIV/AIDS on food security and rural livelihoods

Decrease in the agricultural labour force
Chronic illness or death of a household member
Change in household composition
Increase in the number of orphaned children
Change in household nutritional status
Acute decline in household income
Decrease in credit availability and use
Decrease in aggregate community income and assets
Loss of agricultural knowledge, practices and skills and their transmission from one generation to the next
Decrease in access to natural resources, especially land
Exacerbation of gender-based differences in access to resources
Change in social resources
Increase in social exclusion
Decrease in tangible household assets
Degradation in public services

***Source**: FAO HIV/AIDS Programme (2002)*

In addition it should be noted that the relationship between HIV/AIDS and food security is bi-directional: vulnerability and food insecurity feed into the risky behaviour that drives the epidemic; and the impact of HIV/AIDS exacerbates food insecurity, which again feeds into risk. Food security must therefore be seen as an essential component towards preventing the spread of AIDS, and of mitigating its impact at national and household levels. Ultimately, improving a household's food security reduces vulnerability to HIV infection, as food secure households do not have to resort to detrimental livelihood strategies in order to survive.

The impact of HIV/AIDS on incomes and food purchasing power

In South Africa, household income and expenditure is particularly important for food security as it directly affects household access to food. Incomes earned from both on-farm and off-farm activities allows household to access food through exchange either through the money economy or through bartering as examples. HIV/AIDS can have a direct negative effect through decreasing the quantity, quality and stability of income earning activities.

HIV/AIDS affects labour quantity as a household has less working hours at its disposal to bring in money. For example, caregivers divert time away from income earning activities as others fall ill. In addition, the total capacity of a household to work is undermined as more adults fall sick and unable to work. HIV/AIDS affected households also experience a reduction in the quality of labour in terms of reduction in economic returns per unit of labour. This occurs as households are forced to rely on low value-added activities such as casual labour and natural resource extraction. The quality of labour decreases as the number of sick members increases, which is a likely scenario within households due to the infectious nature of the sexually transmitted disease.

The stability of income refers to the reliability of any given income source. HIV/AIDS affected households are increasingly forced to rely on children or the elderly for a greater proportion of their income, whom are not necessarily competitive as able-bodied adults in the same labour market. In addition, South African households increasingly have to rely on pensions or other state support. There is also reduced diversity of income sources as household members become sick. Households with an infected person or suffering a recent death tend to have increased need for expenditures on health care, transportation and funerals. In addition, households that take in orphans may have increased expenditure requirements for school fees and other needs for children.

The combined effect of reduced incomes and increased expenditures on non-food items is less economic access to food.

The impact of HIV/AIDS on household agricultural production

Many studies conducted on the impact of HIV/AIDS in Africa have focused on the farm-household level where agricultural production at the subsistence or small-scale level is often embedded within multiple-livelihood strategies and systems. Over the past two decades there have been profound transformations in these livelihood systems in Africa, set in motion by Structural Adjustment Programmes, the removal of agricultural subsidies and the dismantling of parastatal marketing boards (Bryceson and Bank, 2000). As a result of these and other issues, many African households have shifted to non-agricultural income sources and diversified their livelihood strategies.

However, despite the evident diversification out of agriculture, rural production remains an important component of many rural livelihoods throughout sub-Saharan Africa. 'African rural dwellers (including those in South Africa)…deeply value the pursuit of farming…food self-provisioning is gaining in importance against a backdrop of food inflation and proliferating cash needs' (Bryceson, 2000, cited in Cousins, 2001). Participation in "small-plot agriculture" is highly gendered, with women taking major responsibility for it as one aspect of a multiple livelihood strategy. Access to land-based natural resources remains a vital component of rural livelihoods particularly as a safety net. In this context, land tenure becomes increasingly important for the diverse livelihood strategies pursued by different households.

HIV/AIDS affected households generally experience a decline in agricultural production, of both cash and food crops, as compared to non-affected households. The major impact on agriculture includes the depletion of human resources, diversions of capital from agriculture, loss of farm and non-farm income and other psychosocial impacts that affect productivity (Mutangadura, Jackson and Mukurazita, 1999). HIV/AIDS causes a variety of impacts that affect household production. These include the impact on labour, the disruption of the dynamics of traditional social security mechanisms and the forced disposal of productive assets to pay for such things as medical care and funerals. In turn, local farming skills are drained and biodiversity in crop variety diminished. Indigenous knowledge systems and technology adapted by farmers to suit the particular conditions of specific areas often die with the farmers. Studies from across Southern Africa have indicated that households with an AIDS sufferer frequently seek to keep up with medical costs by selling livestock and other assets including land. Members who would otherwise be able to earn or perform household and family maintenance may then be spending their time caring for the person with AIDS.

Baier (1997) and Cohen (1998) have drawn attention to the manner in which HIV/AIDS can cause affected households to become socially excluded, thus diminishing their ability to cope with further crises. Similarly, extended family networks sometimes collapse, not least due to pressure of having to support orphaned children (Halkett quoted in Aliber, 2001). Moreover, it has been argued that in KwaZulu-Natal, South

Africa, HIV/AIDS has forced a change in household composition, severely weakening and often breaking the young adult nexus between generations (Marcus, 2000: 19). This, in turn, exacerbates an already existing social crisis of care, which worsens as the epidemic progresses. It is a social context that is unlikely to withstand the weight of need that HIV/AIDS related deaths generate and many, especially children and the aged, face economic and social destitution (Marcus, 2000: 19).

Thus the potential impact of HIV/AIDS on agricultural production may include:

- A decrease in the area of land under cultivation at the household level (due to a lack of labour stemming from illness and death among household members).
- A decline in crop yields, due to delays in carrying out certain agricultural interventions such as weeding and other inter-cultivation measures as well as cropping patterns.
- Declining yields may also result from the lack of sufficient inputs, e.g. fertiliser and seeds.
- A reduction in the range of crops produced at the household level.
- A loss of agricultural knowledge and farm management skills, due to the loss of key household members due to AIDS.
- Decline in livestock production for affected households as the need for cash and the loss of knowledge and skills may force some families to sell their animals.

Thus food security through production may be affected through decreases in both area planted and yields, as a result of the loss of potential able-bodied adult labour, loss of labour quality, time diverted from production due to care-giving and funerals, and decreased financial capital for inputs such as labour or fertiliser.

It should be noted that the adverse effects of HIV/AIDS on the agricultural sector can be largely invisible as what distinguishes the impact from that on other sectors is that it can be subtle enough so as to be undetectable (Topouzis, 2000). In the words of Rugalema, “even if [rural] families are selling cows to pay hospital bills, [one] will hardly see tens of thousands of cows being auctioned at the market…Unlike famine situations, buying and selling of assets in the case of AIDS is very subtle, done within villages or even among relatives, and the volume is small” (cited in Topouzis, 2000). Furthermore, the impact of HIV/AIDS on agriculture, both commercial and subsistence, are often difficult to distinguish from factors such as drought, civil war, and other shocks and crises (Topouzis, 2000).

For these reasons, the developmental effect of HIV/AIDS on agriculture continues to be absent from the policy and programme agendas of many African countries. Many studies on HIV/AIDS that have focused on specific sectors of the economy such as agriculture have been limited to showing the wide variety of impacts and their intensity on issues such as cropping patterns, yields, nutrition, or on specific populations.

HIV/AIDS' effects on sustainable livelihoods and coping strategies

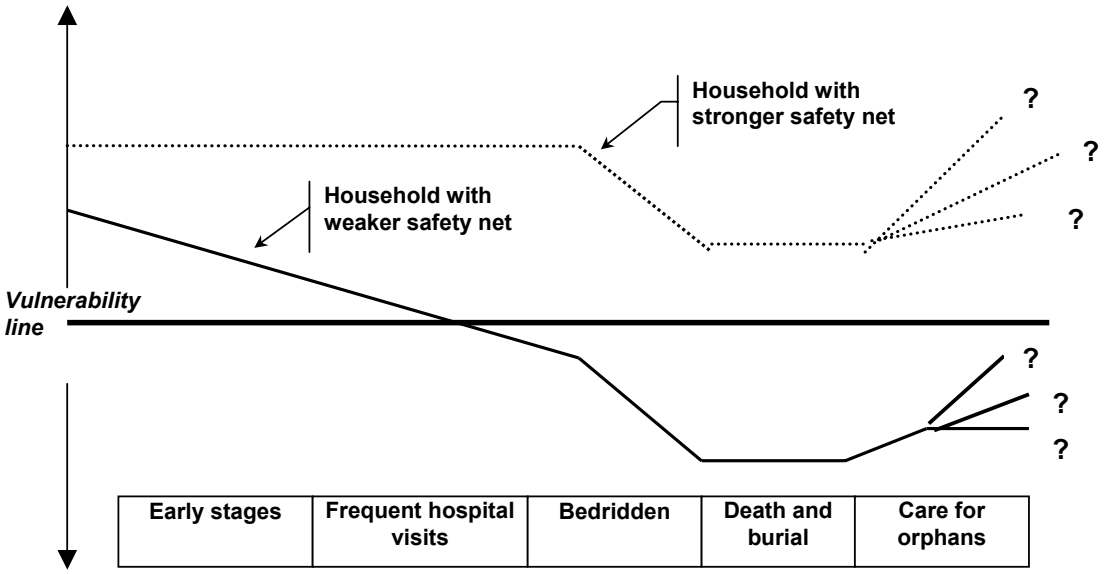
The literature on the impact of adult illness and death on household livelihood or coping strategies suggests that individuals and households go through processes of experimentation and adaptation as they attempt to cope with immediate and long-term demographic change (see SADC FANR VAC, 2003). It is believed that households under stress from hunger, poverty or disease will be adopting a range of strategies to mitigate their impact through complex multiple livelihood strategies. These entail choices that are essentially "erosive" (unsustainable, undermining resilience) and "non-erosive" (easily reversible) (see SADC FANR VAC, 2003). The distinction between erosive and non-erosive strategies depends crucially on a household's assets (for example, natural capital, physical capital, financial capital, social capital and economic capital), which a household can draw upon to make a livelihood.

As an example of the distinction between erosive and non-erosive strategies, the example of livestock sales is revealing (SADC FANR VAC, 2003). Sales of chickens, goats or cattle are classic coping strategies that households all over sub-Saharan Africa engage in. Some level of livestock sales is normal and does not result in increased poverty. At a certain point, however, household livestock holdings reduce to the level where they are no longer sustainable. At this point, livestock sales become erosive.

The diagram depicted below is a useful tool for the conceptualisation of how HIV/AIDS impacts on different households with a different portfolio of assets to underpin a multiple livelihood or coping strategy. The diagram is intended to illustrate the multiple impacts through the stages a household may experience. Those households with a stronger economic safety net and a wider range of options to draw upon during the crisis are less vulnerable at each stage of the continuum of HIV/AIDS illness than their poorer counterparts.

The dotted line represents the rate of degradation experienced by a household with a stronger economic safety net and a wider range of options to draw upon during the crisis. The other line represents the rate of economic degradation experienced by a household with a weaker safety net. The different rates of degradation appear to pivot on the presence or absence of physical assets, business income and access to credit, savings or land. From this it is important to recognise that the impact of HIV/AIDS on rural households is not equal: the poorer ones are much less able to cope with the effects of HIV/AIDS than wealthier households who have the ability to access food are better able to absorb shocks.

Figure 1: The effect of HIV/AIDS on households/livelihood strategies



***Source**: adapted from Donahue et al, 2000*

Further, the diagram indicates that the immediate situation of a single household varies over time. This can be used to help identify how specific interventions can be more or less useful at various stages of illness, to reduce household vulnerability.

Consumption reducing and switching strategies are generally the first line of defence against food shortage. Households may, for example, switch to “wild foods” or skip entire days without eating. Another option for households under stress is the removal of children from school in order to release them for household strategies requiring labour or to relieve costs associated with school attendance (fees, uniforms, stationary). The “erosive” nature of such a strategy is the diminishing stock of human capital for future livelihood options. Another “negative” for food security is that these children may be removed from school feeding schemes and denied opportunities for nutritional balance.

HIV/AIDS’ impact on commercial agriculture

Although this section has focused predominantly on vulnerable households within the analysis of food security and HIV/AIDS, attention should also be focused on the commercial agricultural sector and the impact that the epidemic may have on a crucial pillar of national food security.

The International Fund for Agricultural Development (IFAD) has suggested that the HIV epidemic is disproportionately affecting agriculture relative to other sectors (2001). De Waal and Tumushabe argue that this is not because rates of HIV are higher among workers in the agricultural sector than elsewhere but because the structure of the agricultural sector is such that it is much less able to absorb the impacts of the human resource losses associated with the epidemic (2003). Morbidity and mortality due to

HIV/AIDS significantly raise the industry's indirect costs (medical and funeral expenses) as well as through the loss of valuable skills and experience (FAO, 1999). The epidemic thus adversely affects companies' efficiency and productivity. Thus HIV/AIDS is leading to falling labour quality and supply, more frequent and longer periods of absenteeism, losses in skills and experience, resulting in shifts towards a younger, less experienced workforce and subsequent production losses (Louwenson and Whiteside, 2001: 9). These impacts intensify existing skills shortages and increase costs of training and benefits. This has ramifications for investment into the sector given the costs of the epidemic.

At the recent FAO Conference on HIV/AIDS and agriculture, an example was given of the costs to this particular sector. It was argued that in Sub-Saharan Africa's 25 worst HIV/AIDS affected countries, seven million agricultural workers have died from the epidemic since 1985 and sixteen million more may die by 2020 (Brough, 2001; FAO, 2000). Table 4 depicts the projected losses of the agricultural labour force in the ten most heavily affected countries in Africa. Areas of production such as harvesting and processing that require a high level of skill will be most severely affected.

Table 4: The impact of HIV/AIDS on agricultural labour in selected African countries

Country	Estimated % lost 2000	Projected % loss 2020
Namibia	3,0	26,0
Botswana	6,6	23,2
Zimbabwe	9,6	22,7
Mozambique	2,3	20,0
South Africa	3,9	19,9
Kenya	3,9	16,8
Malawi	5,8	13,8
Uganda	12,8	13,7
Tanzania	5,8	12,7
Central African Rep	6,3	12,6
Ivory Coast	5,6	11,4
Cameroon	2,9	10,7

***Source**: FAO, 2001, cited in Fourie and Schonteich, 2001: 32*

There is, however, another side to this issue: South African farms, which might be looking toward continued shedding of labour, may benefit from the epidemic as they would not face legislative hurdles in laying-off workers. Reasons for labour shedding may include increased mechanization and less reliance on labour, uncertainty from increased rights of farm workers such as a minimum wage, which may increase direct costs on farms, fear of unions, and concerns about taking on new staff in an environment on high rural crime including murder.

HIV/AIDS and chronic or 'new variant famine'

Related to the multiple impact of HIV/AIDS on both households vulnerable to food security and the commercial agricultural sector, De Waal and Tumushabe have argued that HIV/AIDS is creating the chronic or 'new variant famine' that has recently struck southern Africa. It operates through the epidemic in combination with drought and the food crisis. This argument is currently gaining adherents in contemporary debates around HIV/AIDS and food security. The 'new variant famine' hypothesis posits that southern Africa is facing a new kind of acute food crisis in which there is no expectation of a return to either sustainable livelihoods or a demographic equilibrium.

It is important to recognise the power of this position. What it suggests is that policy makers and practitioners working with food security in southern Africa should move beyond what has become an increasingly misleading concept: use of the term 'famine' tends to lock people into discussion and conceptualisation of a relatively short-term event that can be overcome in a few years. The reality is that the high prevalence rates in southern Africa will ensure that many poor people will not recover easily, many others will die or become impoverished every year, and institutions will continue to be weakened. HIV/AIDS is a long-wave event, which requires different, long-wave responses.

Key issues for medium-term policy formulation

- Social grants of all kinds play a crucial role, not just in helping members of HIV/AIDS-affected households to survive during the gathering crisis and on the death of a member (see Issue 3), but also in the recovery process afterwards. Households that have been able to access grants are much more likely to have been able to preserve a substantial part of their physical and financial asset base. Far from inducing increased dependence, social grants are crucial in providing the platform for greater independence in the medium- to long-term.
- The accessibility of grants is a major determinant of how effective grants are in performing these critical functions. Issue 4 focuses on the importance of reducing the institutional and infrastructural constraints on access to non-farm income, of which social grants, in most low-income households, make up much the largest part, typically also far exceeding agricultural earnings (see Issue 3).
- Particularly for households that do not have access to anti-retrovirals, the most important coping strategies during the onset of AIDS are consumption of adequate quantities of suitably nutritious food and the ability to shed labour-intensive tasks, such as fetching water and firewood. Effective, accessible public health services and public education systems that dispense not just medication – though the importance of anti-retrovirals can hardly be overstated – but also advice and support in respect of nutrition are therefore key components of a broader public safety net (see Issue 11). The potential of domestic food gardens to contribute to the fulfilment of nutritional needs is also an important policy consideration (see Issue 8).

- No less important are reliable connections to electricity and to a clean piped water source. Over and above the labour saving that these enable, the latter also reduces the risk of potentially fatal secondary infections. But, while public expenditure on the necessary infrastructure is obviously essential to set this up, adequate maintenance and affordability are crucial for the benefits to continue. Current free water allowances may be adequate for many low-income households' needs, but present free electricity allowances do not permit heating for many forms of cooking, thereby diluting the labour saving potential of connection to a power grid. Issue 6 explores this further. The implications for the capital and current budgets of local authorities are substantial.
- Early warning and reactive systems have a key role to play not only in helping to detect and mitigate natural disasters but also to monitor the ongoing health of communities as influenced, inter alia, by HIV/AIDS and public policy failure (see Issue 10).

ISSUE 3

WHAT IS THE EXTENT OF FOOD INSECURITY IN SOUTH AFRICA? AND WHAT ARE THE MAJOR DETERMINANTS OF FOOD SECURITY FOR LOW-INCOME HOUSEHOLDS?

The Incidence of Food Insecurity in South Africa

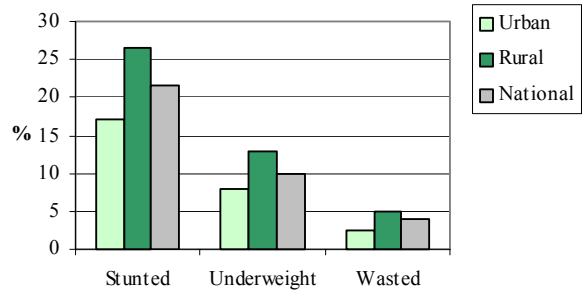
The South African Constitution (Chapter 2, Section 27.1b) asserts that every citizen has the right to have access to sufficient food and water and that the state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realization of this right to sufficient food. In response to this imperative, the National Department of Agriculture's Integrated Food Security Strategy (IFSS, 2002) adopts as its guiding vision the attainment of *universal* physical, social and economical access to sufficient, safe and nutritious food for all South Africans to meet their dietary requirements. In accordance with the Millennium Development Goals, the overarching goal of the strategy is to eradicate hunger, malnutrition and food insecurity by 2015 (StatsSA and UNDP, 2003).

Nonetheless, while food security has come to represent an incontrovertibly salient governmental priority and despite the country being considered self-sufficient in respect of food production, food insecurity continues to remain a substantive developmental challenge. Estimates suggest that approximately 1.5 million South African children suffer from malnutrition, 14 million people are vulnerable to food insecurity and that 43% of households suffer from food poverty [1](National Treasury, 2003; Charlton and Rose, 2002). The long-term impact of such high rates of food deprivation on the development potential and quality of the labour force and hence on economic growth and poverty reduction – stretching over as much as three generations – is extraordinarily high. There can be few investments with such rewarding long-term rates of return as adequate child nutrition.

1 A household is defined to be in food poverty when monthly food spending is less than the cost of a nutritionally adequate very low-cost diet.

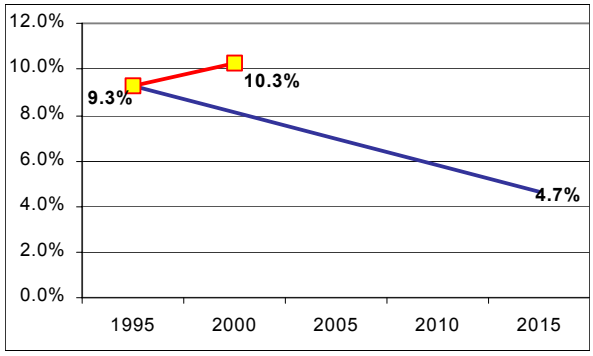
Figures 2(a) and (b): Incidence of malnutrition among Children in South Africa

Anthropometric Status of South African Children Aged 1-9 Years



Source: Shung-King et al (2000) based on Labadarios (2000)

Prevalence of Underweight Children Aged 1-9 Years



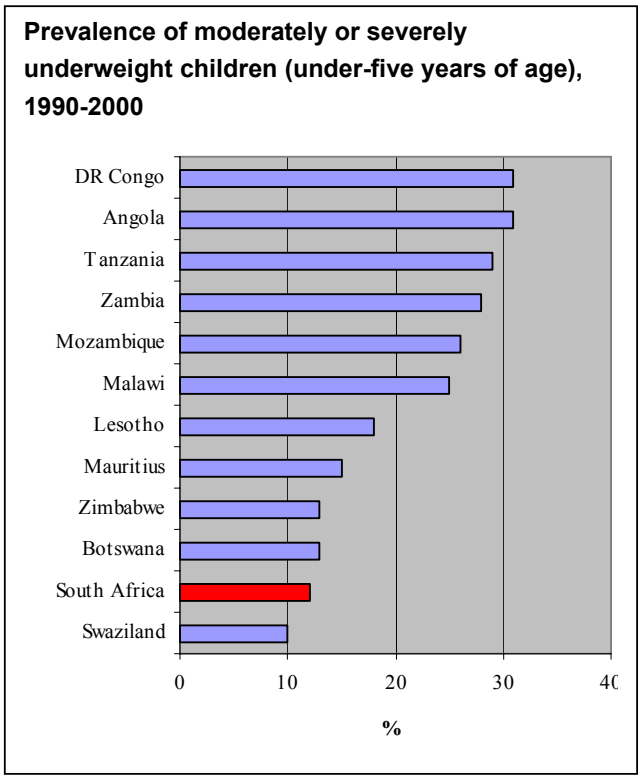
Malnutrition persists as one of the primary contributors to child morbidity and mortality in South Africa, with an estimated 1.5 million children suffering from this disorder (Department of Social Development, 2002; National Treasury, 2003) According to the National Food Consumption Survey of 1999, ten percent of children aged between 1-9 years of age are underweight, with 1.5% being classified as severely underweight[2]. It is unknown how many of these children have actually been receiving child support grants and, consequently, what the grant's impact is on malnutrition - a high priority research task.

As for other measures of malnutrition, 21.6% of children aged 1-9 years are affected by stunting (low height for age), indisputably the most prevalent nutritional disorder in South Africa, while 3.7% suffers from wasting (low weight for height). At the disaggregate level, the prevalence of underweight, stunted and wasted children is consistently higher on commercial farms and in rural areas than urban areas. A diagnostic analysis of the association between malnutrition and the level and composition of income remains to be done, though de Klerk's research on maize farms reveals the seasonality of poverty among farm workers in this key sub-sector (de Klerk, 1984).

Moreover, there is substantial provincial variation in the malnutrition indicators, with stunting being the most widespread in the Northern Cape (31%) and Free State (30%), followed by Mpumalanga (26%), North West (24%), Limpopo Province (23%) and the Eastern Cape (20%)(Shung-King, 2000; Labadarios, 2000). While these prevalence rates may be low from a regional or international perspective (cf. Figure below), this does not mean that there is not cause for concern.

[2] A severely underweight child weighs

Figure 3: Incidence of malnutrition among children in southern Africa



There is empirical evidence to suggest that malnutrition in South Africa has been worsening over time. For instance, the prevalence of underweight children exhibited a distinct upward trend, increasing from 9.3% to 10.3% during the late 1990s. This is worrying given the commitment to reducing the percentage of underweight children to 4.7% by 2015, in line with the Millennium Development Goals (StatsSA and UNDP, 2003). Stunting has also been rising, from 22.9% of children aged 1-6 in 1994 to 23.3% in 1999 (Bradshaw *et al*, 2000).

This inability of many South Africans, especially children, to secure their recommended dietary requirements is further corroborated by available data pertaining to *subjective* measures of food insecurity. The October Household Surveys, conducted on an annual basis by Statistics South Africa between 1994 and 1999, each contained a question on the ability of households to feed children as an indicator of food insecurity. Unfortunately, there was inconsistent phrasing in the questions between years, which inevitably hampers comparability over time. In spite of this, certain patterns can be discerned. At the national level, between one-quarter and one-third of households are unable to purchase food to meet the dietary requirements of children at any given time. This phenomenon is more acutely felt amongst rural households and in poorer provinces, most especially the Eastern Cape and Mpumalanga.

Table 5: Subjective Assessment of Food Insecurity in South Africa by Province and Area of Residence, 1994-99

	Did not have enough money to feed children in household		Could not afford to feed children in the household			Children aged <7 went hungry because there was not enough money to buy food
	1994	1995	1996	1997	1998	1999
Western Cape	18.2	23.1	22.9	20.6	25.7	18.0
Eastern Cape	61.5	42.8	39.2	31.8	47.0	31.2
Northern Cape	35.1	27.3	25.6	22.8	26.9	13.8

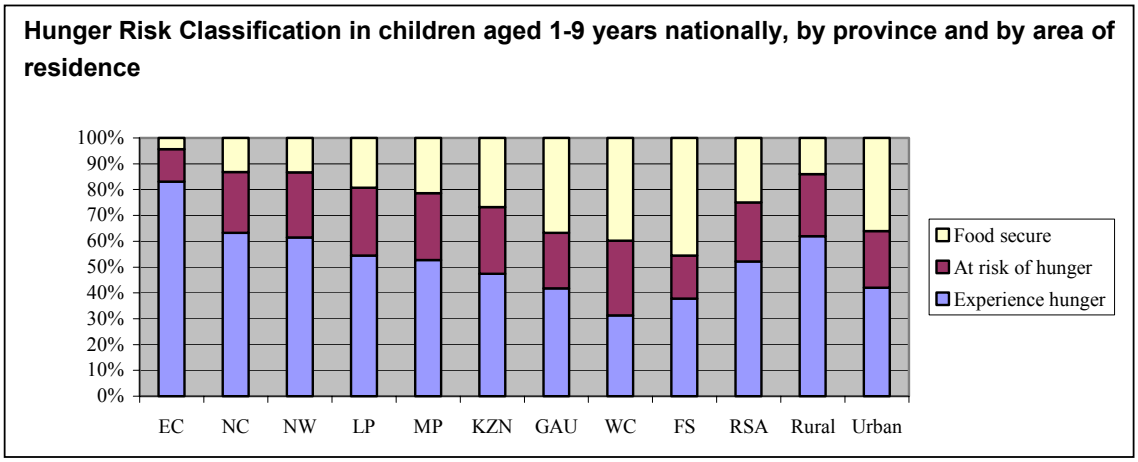
	Did not have enough money to feed children in household		Could not afford to feed children in the household			Children aged <7 went hungry because there was not enough money to buy food
	1994	1995	1996	1997	1998	1999
Free State	47.8	32.4	17.5	31.2	28.7	26.5
KwaZulu-Natal	33.3	35.2	25.4	27.2	32.2	26.9
North West	45.2	25.3	20.2	27.6	26.6	25.1
Gauteng	36.3	22.0	27.7	18.7	22.0	14.6
Mpumalanga	41.4	39.5	24.5	29.0	33.7	32.0
Limpopo	51.3	43.7	28.2	24.0	30.2	16.1
Urban	34.1	-	25.5	22.3	26.4	19.1
Rural	49.2	-	29.1	29.9	37.2	27.6
National	**41.0**	**31.7**	**27.0**	**25.5**	**31.1**	**23.4**

Source: October Household Surveys (Statistics South Africa, 1994-99)

The National Food Consumption Survey (2000) developed a hunger index, which shared the OHS focus on food insufficiency due to constrained resources, and consisted of a scale composed of the following eight questions:

- Does your household ever run out if money to buy food?
- Do you ever rely on a limited number of foods to feed your children because you are running out of money to buy food for a meal?
- Do you ever cut the size of meals or skip because there is not enough money for food?
- Do you ever eat less than you should because there is not enough money for food?
- Do your children ever eat less than you feel they should because there is not enough food in the house?
- Do your children ever say they are hungry because there is not enough food in the house?
- Do you ever cut the size of your children's meals or do they ever skip meals because there is not enough money to buy food?
- Do any of your children ever go to bed hungry because there is not enough money to buy food?

Figure 4: Hunger among children in South Africa



On the basis of the resulting index, 52% of households nationally experienced hunger in 1999, 23% were identified as at risk of hunger, with only 25% appearing to be food secure. As with the malnutrition indicators and subjective food security indicators contained in the OHS series, a greater percentage of households in rural areas were experiencing hunger relative to households in urban areas, with the highest prevalence on commercial farms. Provincially, 83% of households in the Eastern Cape experienced hunger in 1999, followed by Northern Cape, the North West and Limpopo Province. The variation in hunger risk classification by area of residence and province were both statistically significant ($p<0.0001$)(Labadarios, 2000).

Determinants of Food Insecurity in South Africa

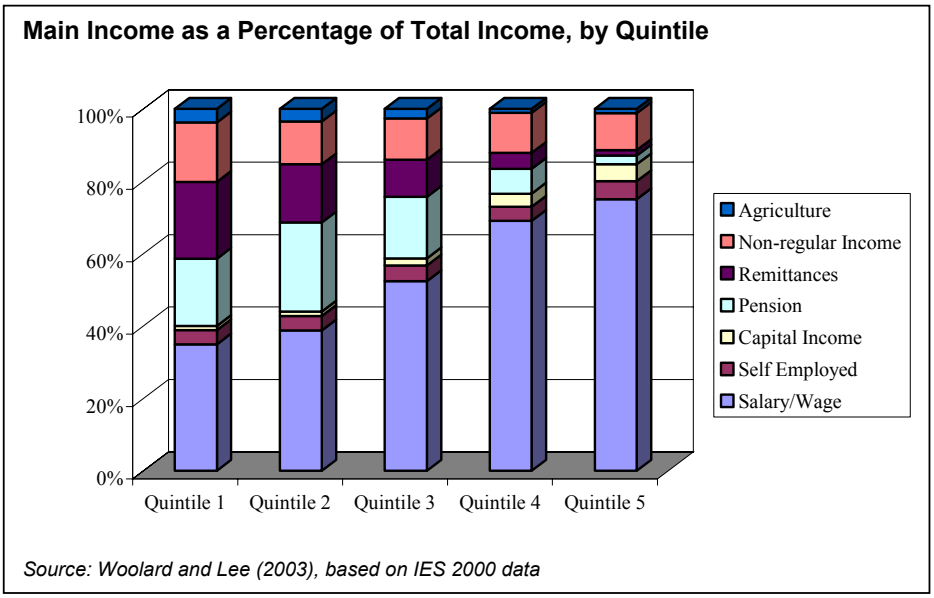
The preceding section aimed to provide an overview of the prevalence of food insecurity in the country and examine some its correlates. This section will review available survey-based information on some the determinants of food insecurity. The concept of food (in)security has evolved substantially since it was first introduced into the development discourse in the 1970s. Devereux and Maxwell (2003:1) argue that the most significant aspect of this empirically and theoretically driven advancement is the awareness that: 'Food security is no longer seen simply as a failure of agriculture to produce sufficient food at the national level, but instead a failure of livelihoods to guarantee access to sufficient food at the household level'.

The ongoing analysis of chronic food insecurity (under-nutrition) and acute food insecurity (famine) in Africa has begun to yield an emergent consensus, which acknowledges the role that both limited food availability and restricted access to food play in determining whether a household is food insecure (ibid.).

An analysis of Statistics South Africa's 2000 Income and Expenditure Survey (IES) data reveals that 57% of all households derive their main source of income from wages/salaries, followed by social grants (14%) and remittances (10%). Agriculture is reported as the primary source of income for a mere 4% of households. Using data from the IES, Woolard and Lee (2003) have included the value of agricultural output produced for own consumption to recalculate income (see 'agriculture' in Figure 5 and Tables 6 – 9 below).

Disaggregating these findings by income quintiles reveals that there is considerable variation in the main source of household income across the distribution. For poorer households at the lower end of the income distribution, there is a greater diversification of income sources. While wages/salaries still represent the most sizeable income source, there is also a notable dependence on remittances and social grants, particularly in relation to households at the upper end of the distribution. The latter tend to rely almost exclusively on the labour market income. Again, it is important to note that agricultural income contributes less than 4% to the total income of the poorest quintiles.

Figure 5: Income by quintile in South Africa



Source: Woolard and Lee (2003), based on IES 2000 data

Poor quintiles are more likely to be engaging in small-scale agriculture relative to wealthier quintiles, with approximately one-quarter of households in the bottom two quintiles reporting an income from this source. Nonetheless, a greater or equivalent share of households within the poor quintiles are likely to be receiving income from non-regular income, wages/salaries, remittances and pensions within the poor quintiles than from small-scale agriculture.

The implication of these results is that there needs to be an increasing recognition that, while agriculture is an important component of household food security and rural livelihoods, especially for the poor, other sources of food and income have come to play an equally important role. It is clear that poor rural households have diversified the livelihood strategies by constructing a diverse portfolio of activities and social support capabilities in their struggle for survival and to improve their standard of living. However, such diversification could be perceived as an indication of increased household vulnerability, due to the failure of previous coping or livelihood strategies. Existing evidence suggests the erosion of a fundamentally agrarian existence for the poor and an increased reliance on non-farm and even non-rural incomes.

One outcome of this diversification is a greater reliance on purchased food as opposed to own produced food. This exposes households to the adverse effects of price fluctuations, which can have a significant impact on household food security. Watkinson and Makgetla (2002) discuss the crisis of rising food prices and food insecurity in South Africa. They argue that the 17% inflation on food prices between June 2001-02 is likely to have a disproportionate and devastating impact on the living standards of the predominantly rural ultra-poor, who spend more than 50% of their income on food.

An analysis of the 2000 IES data, tabulated by income quintile, yields a number of important conclusions for medium-term national policy formulation:

Table 6: Main Sources of Income per Household

Main Income	Frequency	Percentage
Salary/Wage	6299585	57.05
Self Employed	457890	4.15
Capital Income	305318	2.77
Social grants	1509410	13.67
Remittances	1134445	10.27
Non-regular Income	912116	8.26
Agriculture	422968	3.83
TOTAL:	11041732	100.00

Source: Woolard and Lee (2003), based on IES 2000 data

Table 7: Main Sources of Income per Household, by Quintile

Main Income	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Salary/Wage	36.45	40.40	55.41	74.22	79.52
Self Employed	4.01	3.76	4.1	3.77	4.66
Capital Income	1.11	1.22	1.91	3.77	4.15
Pension	19.05	28.48	17.97	4.48	1.12
Remittances	21.66	15.33	9.34	3.55	1.07
Non-regular Income	12.98	7.24	7.54	7.27	5.71
Agriculture	4.74	3.57	3.73	2.93	3.77
TOTAL:	100.00	100.00	100.00	100.00	100.00

Source: Woolard and Lee (2003), based on IES 2000 data

Table 8: Main Sources of Income as a Percentage of Total Income, by Quintile

Income Type	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Salary/Wage	34.94	38.78	52.42	69.04	75.04
Self Employed	3.92	3.97	4.32	3.88	4.97
Capital Income	1.13	1.26	1.95	3.65	4.66
Pension	18.61	24.59	17.02	6.83	2.41
Remittances	21.21	16.08	10.22	4.42	1.53
Non-regular Income	16.39	11.77	11.40	11.10	10.22
Agriculture	3.79	3.54	2.67	1.08	1.18
TOTAL:	100.00	100.00	100.00	100.00	100.00

Source: Woolard and Lee (2003), based on IES 2000 data

Table 9: Percentage of Households in each Quintile receiving Main Sources of Income

Income Type	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Salary/Wage	42.69	49.49	64.10	80.91	85.95
Self Employed	5.90	7.24	8.62	8.17	9.01
Capital Income	2.00	2.83	3.85	6.84	12.69
Pension	21.76	33.53	30.02	21.37	13.09
Remittances	30.39	29.47	23.31	14.19	6.89
Non-regular Income	46.27	47.79	48.04	51.93	55.46
Agriculture	23.24	26.44	21.03	12.23	8.97

Source: Woolard and Lee (2003), based on IES 2000 data

- Even for the lowest two quintiles – for whom it can reasonably be assumed that unemployment rates are highest - employment is still by far the most important source of income. If remittances are reckoned to have been derived wholly from the salaries and wages of migrant household members – which is probably close to being entirely accurate – then employment still generates about 60% of total income, only a little more than 5% of which is accounted for by self-employment. Even for those most marginalized, the rate of growth of the macroeconomy is still the most important determinant of income and food security.
- Next most important for the two poorest quintiles is income from social grants, making up an average of 21,6% of household income for the combined group. Just how important access to this form of income is, is revealed by the fact that the lowest quintile received substantially less income from this source than the second lowest quintile. Only 21,8% of households in the poorest quintile were recipients of social grants – as against the much higher incidence of 33,3% in the next poorest quintile. For low-income households, access to social grants clearly makes a world of difference. The importance of constructing a social safety net that does not have sizeable holes in it can hardly be more graphically demonstrated. In this respect, it is not so much the size of the total budget for social grants that matters – there is no need to emphasize the importance of this – as the need to make sure both that ***all*** of the poorest qualify for one or other form of public assistance and that public institutions, infrastructure and services combine to make on-the-ground access to payments easy (see Issue 4). If targeted grants are to be preferred to much blunter universal grants, then it is essential to make sure that the former effectively cover the entire low income/food insecure population – a considerable policy, administrative and research challenge that has not yet adequately been met.
- Even among households in the poorest two quintiles – about 70% of whom are located in rural areas – only about 1 household in 4 derived any income in kind from agriculture. (Cash income from the sale of agricultural goods is understood to have been classified under ‘self-employment’.) And, for those who did derive income from this source, the contribution to total household income was very small, averaging between 3,5% and 4%. (One of many unanswered research questions is whether there has been a significant and sustained decline in these percentages since the start of the IES.) While there can be no doubt that the productivity of agricultural resource use in the rural areas in which low income household predominantly reside is far lower than it could and should be, the tables suggest strongly that expenditure and effort directed at improving the availability of and access to social grants will be more effective in reducing food insecurity than will the equivalent quantum of resources directed at improving agricultural productivity. Of course, this is not to say that the latter is an invalid task or that no resources should be directed towards raising agricultural productivity in low-income communities, rather, that it is crucial not to understand agricultural upgrade as the best means of reducing food insecurity and to misallocate public resources accordingly.

ISSUE 4

HOW IS FOOD SECURITY AFFECTED BY INSTITUTIONAL AND INFRASTRUCTURAL DEFICIENCIES THAT CONSTRAIN ACCESS TO NON-AGRICULTURAL COMPONENTS OF INCOME?

(The importance of this issue, at least in respect of the key aspect of access to social grants, has been made clear above. In planning, the intention was to include a section on the topic in this, the 'Food Security' position paper, but it was subsequently realised that the accompanying 'Infrastructure' position paper deals with the subject in more depth and more satisfactorily than can be done here. Please, therefore, refer to the 'Infrastructure' paper for coverage of Issue 4.)

ISSUE 5

HOW DOES LAND REFORM IMPACT ON FOOD SECURITY?

The simple answer to the question as to the impact of land reform on food security, is that household-level food security is enhanced by land reform in proportion to the number of additional households that gain land access through it. This is an extension of the evidence presented above, e.g. that access to land is part of a multiple-livelihood strategy that is particularly important for poorer households. Moreover, even where agriculture contributes only a modest share of overall household income, it plays an important security role, not least in making households less reliant on purchased food, which can vary greatly in price.

On the other hand, concerns have been expressed that land reform, unless it is conducted 'properly', could imperil the commercial agricultural sector and even national food security, if agricultural land is redistributed to beneficiaries who make less productive use of it than those from whom it was acquired. This for example was one of the concerns expressed in the 1995 submission to the drafters of the DLA's "Land Reform Policy Document", by the National Department of Agriculture (then under a separate minister): "Greater emphasis [should] be placed on creating opportunities outside of agriculture to avoid poverty traps and the resultant destruction of the agricultural resource base". Van Rooyen et al. (1996) state that "The RDP strikes a nerve of the South African society with the emphasis placed on land redistribution and restitution. The importance of these goals is not disputed. It will however, be important to balance these objectives and targets with other national and economic needs such as availability of scarce resources to support the programme; the importance of productive land use for agricultural and food production…" (van Rooyen et al., 1996). Similarly, the attitude towards land reform of Agri-SA, though in many ways constructive, is that land reform should be conducted in such a manner as to ensure continuity in the productive use of that land (Nic Opperman, Agri SA, personal communication, June 2003). The suggestion is that an ill-conceived land reform could negatively affect the rural economy, aggravate poverty levels that are already unacceptably high, and even work to the detriment of the very people who benefit.

The relationship between land reform and food security is indeed a complex one, first, because land reform itself involves a number of distinct programme areas; and second, because land reform has a variety of different types of impacts on the commercial agricultural sector, both at micro and macro-levels.

The most straightforward way to structure this discussion is by taking each of the main land reform programme areas in turn, which are:

- land redistribution, through which citizens can apply for grants with which to purchase land for farming and/or settlement;
- land restitution, involving the restoration of land or cash compensation to victims of forced removals;
- tenure reform, which seeks to improve the clarity and robustness of tenure rights, mainly for residents of former homeland areas; and
- 'land rights', comprising mainly legislative and other initiatives to protect the tenure rights of farm dwellers and labour tenants.

Land redistribution

There is a school of thought that small-scale farmers are more productive than larger farmers. This view, known generally as the 'inverse farm-size productivity' hypothesis, is espoused for example by the World Bank and FAO, and is often put forward as a rationale for redistributive land reform (e.g. Binswanger *et al.*, 1993), i.e. in that redistributive land reform can enhance both equity *and* efficiency. The inverse-relationship argument is complex and will not be delved into here. Suffice it to say that the alleged superiority of smaller farmers relates to higher total factor productivity, which does not necessarily imply more production per unit of land, nor does it necessarily imply a vibrant contribution to the agricultural economy. The scant evidence from efficiency studies of smaller farms in South Africa indeed suggests that the most efficient farmers are those that use the least inputs, including land (van Zyl, 1996), meaning they obtain relatively high bang-for-the-buck, but generally speaking there is little of either. It should be stressed that this involved a comparison among farmers from the former homeland areas, rather than a comparison between these and large-scale commercial farmers in former 'white South Africa'.

The inverse relationship claim may be an important consideration from a broader economic perspective, and it may well be that, but for myriad market distortions and failures, it would be more generally realised. However, for the present purpose it is sufficient to stress that, controlling for land quality, yields of large-scale farmers greatly exceed those of small-scale farmers, owing mainly to the greater use of inputs. This implies that, strictly in terms of aggregate production, replacing large-scale commercial farmers with smaller-scale farmers similar to those that are typical of former homeland areas, would almost certainly result in a decline in aggregate production at the margin.

Whether land reform beneficiaries *are in fact* similar to small-scale farmers in former homeland areas, is not necessarily the case, but before addressing this question it is worthwhile pondering the implications of the possibility of reduced production due to redistribution.

The easy part is in terms of the possible consequences for national-level food security/sufficiency. Given the opening up of the South African economy since 1994,

national-level food security is less of a concern than it used to be. Although domestic production deficits may exert an upward pressure on food prices in the short-run, as recent events show they pale in significance relative to other influences, e.g. the exchange rate, international commodity prices, and margins added downstream in the food marketing chain. The implication is that, even if aggregate food production were to decline on account of land reform, it would not greatly impact on food affordability to the general population, and given that it would come in the form of a trend rather than a shock, in principle there would be virtually no impact at all.

The more difficult part is the indirect consequences via the possible impact on the commercial agricultural sector itself, much of which, of course, is not in the business of producing food for domestic consumption at all. The contribution of the commercial agricultural sector to the country's economy has been under continuous decline for decades. During most of the 1990s, agriculture comprised 5% to 7% of GDP; for the period 2000-2002, the range has been 3.2% to 3.7% of GDP. This does not point to an absolute decline in agriculture, so much as a relative increase in other sectors. (Some analysts attempt to stress the importance of the agricultural sector by drawing attention to its 'linkages', i.e. its importance to other sectors such as those that make use of agricultural products. While these linkages certainly exist, we generally dismiss this strategy of enlarging agriculture's importance on the grounds that many such downstream industries can and do make use of imported agricultural commodities).

What would be the significance of a decline of this already small contribution of agriculture due to a conversion of land to less productive uses? That of course depends on how much land would be affected, and how great the gap between its productivity before and after transfer. And it depends, moreover, on which commercial farms would be directly affected. This latter point is arguably the most important. Because land for land redistribution is purchased on the open market (i.e. the so-called willing buyer / willing seller approach), it stands to reason that it is not the most productive or profitable farms that are redistributed, nor the most productive or profitable farmers that quit agriculture. Ultimately all one can do is establish upper and lower bounds as to the possible impact. The upper bound, extreme, effect could fairly be defined as the case if 30% of the land were redistributed, was taken from 'average' farms, and became completely unproductive. This would result in a decline of GDP of about 1%, not taking into account secondary effects, and a loss of approximately 200 000 regular and casual farmworker jobs, or 2% of all formal sector jobs. The lower bound is that the impact on GDP and jobs would be barely discernible, because the scale of delivery would remain roughly as is (about 0.2% of commercial farmland area per year), because the selling farms would tend to be the less productive ones, and because the drop in productivity would be modest or non-existent (see below). In other words, there remains a great deal of uncertainty as to the ultimate impact on the economy and on the number of jobs, because most of the underlying parameters are themselves very uncertain.

What is the relative productivity of land that is acquired for land redistribution projects, and are there discernible changes in the kinds of input use associated with transferred farms? This is very difficult to assess, not least because of the dramatic shift in redistribution policy in 2001 in favour of promoting the commercial viability of redistribution projects. The reformulated redistribution programme, known as the Land Reform for Agricultural Development (LRAD) programme, replaces the old programme that lasted from 1995 until 2000, and was based on the Settlement/Land Acquisition Grant (SLAG), which was R16 000 per beneficiary household. In terms of the financial support to land reform beneficiaries, the conditions have never been better, nor have the prospects for entering into commercially productive agriculture. One of the primary differences from the old, SLAG-based programme is that the new grant is available in a range from R20 000 up to R100 000, depending on an own contribution which rises disproportionately according to the grant level (that is from R5 000 to R400 000). However, as significant as the change in the size of the grant is the fact that it is now awarded to adult individuals rather than to households, and in practice multiple adult members of the same household can and do apply for LRAD grants with the intention of pooling them. In fact, this is actively encouraged by government staff and private consultants who work with LRAD applicants. Based on discussions with numerous officials working on LRAD, a conservative order-of-magnitude guess is that the average grant per beneficiary is R35 000, and that there are 5 beneficiary members belonging to the same household/family. This implies a total grant captured by the same household of R175 000, effectively more than 10 times the old Settlement and Land Acquisition Grant (SLAG) of R16 000 per household.

Because of the newness of LRAD – most of the 624 projects approved between August 2001 and December 2003 were transferred within the last 12 months – there has as yet been no empirical work examining production patterns. Anecdotal evidence suggests that some of these projects are successful, because the beneficiaries are of a high calibre and because their projects are adequately capitalised. This is particularly true of the smaller, 'family farm' type projects, whereas the prospects for the larger projects that involve farmworkers taking over their farms are less clear. Neither type of project appears to involve a radical change in the input mix, that is to say, LRAD projects do not appear to be more labour-using than the farms they take over. This is one reason to suspect that the impact on food security is negligible.

The other reason is that, very significantly, because of the much larger amount of grant money effectively available to households, there are very few beneficiaries overall. Given the present annual budget for capital transfers of about R300 million, LRAD can only accommodate only about 1700 to 2000 households per year. (This does not appear in official statistics, because the 'household' is not longer the official beneficiary unit.) One can conclude that, under LRAD, the productivity of transferred land may drop little or not at all, but there is so little of it, and so few people involved, that the

overall impact is negligible, and will remain so unless the programme expands significantly in scale.

The fact is that the LRAD programme was not designed with enhancement of food security in mind. This is notwithstanding some of the language in the LRAD framework document which speaks of people accessing grants at the lower end of the scale for so-called "food safety-net projects". With few exceptions, projects are designed with explicit commercial goals, and even when smaller grants are accessed, the level of benefit per household is far greater than is necessary to merely assist the household boost production for own consumption. The consequence is that, on a national scale, land redistribution is presently all but insignificant in terms of food security.

Restitution

The goal of restitution is to restore land and, where this is not practicable, provide other remedies to people who have been dispossessed of land due to racially discriminatory legislation. The Restitution of Land Rights Act of 1994 provides for the restitution of rights in land to persons or communities dispossessed of such rights after 19 June 1913 as a result of past racially-discriminatory laws or practices.

Some 63 455 restitution claims had been lodged with the Commission as of the 31 December 1998 cut-off date. The validation process, which was effectively completed in early 2003, has led to the recognition that many of the claim forms submitted in fact represented more than one claim, thus excluding 439 claims that have been dismissed as invalid or duplicates, the total number of claims received is 79 687. Of these, approximately three quarters are claims for urban property, however whereas an urban claim tends to be for a single household, rural claims typically encompass groups of households, sometimes even whole communities.

Of the 36 488 claims that had been settled as of April 2003, almost 80% were urban (Walker, 2003). These settled claims have to date encompassed fewer than 90 000 households, which suggests that the claims that remain to be settled are the larger and generally more complex ones. As of end of June 2003, 757 272 hectares of land had been restored (0.9% of commercial farmland), but the number of households to whom it had been restored is not reported. Significantly, the expenditure on land acquisition was R627 million, versus R1.3 billion for financial compensation.

As of yet, there has been no systematic study of the impact of restoration of land on beneficiaries' lives and livelihoods. (The DLA's last 'Quality of Life Report', based on fieldwork undertaken in 2000/01, did include a number of restitution projects in its sample, but oddly did not analyse the impact of these projects as distinct from redistribution and other projects.) Based on anecdotal evidence and a smattering of case-studies, concerns have been raised regarding the economic and social viability of

re-located communities, not least because of the challenges of co-ordinating delivery from diverse government structures to ensure access to services and amenities to what in the present day are often remote settlements. Some of the earlier, large rural restitution projects, e.g. Riemvasmaak in the Northern Cape, have become emblematic of the hardships sometimes caused by good intentions. The most promising restitution projects seem to be those where the land restored is part of an existing tourism venture of which the community now becomes a beneficiary or shareholder, as with the Makuleke community's successful claim to land lying within Kruger National Park.

The macro concerns regarding restitution are similar to those for redistribution. However, unlike redistribution, the overall scope of restitution is limited because only the claims that have already been lodged are recognised. Although the exact amount of land and beneficiaries is not known yet, it is probable that it will not exceed 3%-6% of the total commercial farming area in the country. The overall implications of restitution for food security remain ambiguous, but in any event very limited.

Tenure reform

Tenure reform is in theory the area of land reform that will affect the largest number of people, simply because it has implications for all 15 million people presently residing within the former homelands and Coloured reserves. The main objectives of tenure reform are to improve the land administration system applied to former homeland areas and Coloured reserves, and clarify and improve tenure rights. Observers differ in how greatly these measures might be expected to increase agricultural investment and thus productivity; the conventional wisdom is that tenure reform is a necessary but not sufficient condition to stimulate investment (Roth *et al.*, 2002). Much depends on the nature of the tenure reform as well. The National Department of Agriculture and some agricultural economists had advocated that land be privatised and individualised, so as to create the greatest possible incentives for increased investment, however, this approach was recognised within DLA as excessively dangerous, as it could badly aggravate an already serious problem of landlessness. A well conceived tenure reform might not spur great increases in agricultural production or improvements in food security, but it could assist at the margins. One area of concern is that many people with arable land no longer make use of it because traditional systems of livestock control have disappeared, meaning that whatever they grow is likely to be grazed before it can be harvested. However, there are also signs that production in former homeland areas is more constrained by lack of cash with which to purchase inputs, and lack of interest in agriculture among the youth.

Sadly, the tenure reform programme has been adrift for the last several years. Drafting of the central legislative initiative, now called the Communal Land Rights Bill, began around 1997. A near-final version of the Bill was produced by late 1999, and attempted to balance the need to allow gradual, self-determined change on the one hand, and a

practicable institutional framework to facilitate that change, on the other. With the change in ministers, the draft Bill was put aside for some time, then work on it resumed in fits and starts. Although it appeared that the Bill would finally be presented to Cabinet in 2003, it is no longer clear if this is so, or for that matter what the current draft of the Bill even says. The great difficulty that has been observed in taking the legislation forward certainly gives cause for concern that whatever is eventually introduced can be implemented, given the evident lack of capacity, direction, or political will, within DLA.

Land rights

There are two key pieces of legislation in the area of land rights: the Land Reform (Labour Tenants) Act of 1996, and the Extension of Security of Tenure Act of 1997. Both attempt to protect and fortify the rights of farm dwellers. Notwithstanding the laws, however – and some people would argue in large measure because of them (Atkinson, 2003) – the displacement of farm-dwellers has apparently continued. Unfortunately, the detailed data from the 2001 census are not yet available to allow a quantification of this trend, but the decline in the number of farmworker jobs is very likely a good indication: between 1988 and 2002, the number of farmworkers declined by 47%, and the number of regular farmworkers by 30%. There is ample anecdotal evidence to suggest that the composition of whole communities has undergone dramatic change with the influx of former farm-dwellers, most of whom lost their farm employment at the same time they lost their place of residence (Cross, 2003; Atkinson), 2003. The implications for receiving settlement areas are significant: more pressure on existing infrastructure, rapid additions to the housing queue, and greater competition for scarce income earning opportunities. The impact of the Extension of Security of Tenure Act in particular is perceived to be ambiguous. Some observers believe that it may have prevented eviction of farm dwellers in certain instances, but beyond that it contributed to the overall perception among white commercial farmers that the government is hostile to them, and thus accelerating rather than preventing their efforts to remove farm dwellers from their properties (Simbi and Aliber, 2000). Possibly this is the biggest impact that land reform has had on food security overall, albeit indirect, untended, and certainly very negative.

Conclusions for medium-term policy formulation

The relationship between land reform and food security is complex and uncertain, owing in part to the multiple aspects of land reform, the numerous links between land reform and livelihoods and food security; and the lack of information about what is happening on the ground. Notably:

- land redistribution does not have improving food security as a goal, except to some extent on paper, nor does the scale of the redistribution allow for any meaningful impact relative, say, to landlessness in the neighbourhood of 675 000 households and rural unemployment experienced by 3.2 million Africans and Coloureds;

- the tenure reform programme appears to be at an impasse, with the content and enactment of the Communal Land Rights Bill very uncertain;
- the impact on households of land restoration is very unclear, but in any event it appears that the final number of beneficiary households will not be great;
- efforts to protect the rights of farm dwellers have failed to prevent their eviction, and by some accounts have accelerated it unintentionally.

More direct attention by policy-makers on enhancing food security through land reform is overdue, not least because the economic benefits of initiatives such as LRAD are too modest to have much of an impact. Areas for possible reworking include:

- developing models of redistribution to complement LRAD that seek to benefit much larger numbers of people by providing access to small amounts of land for part-time productive use;
- developing support packages for redistribution and restitution beneficiaries that stress low-input agriculture and exploit innovations in inexpensive water harvesting to promote small-scale staple and vegetable production;
- acknowledging that the continued retrenchment of farm workers and eviction of farm dwellers, is probably the single greatest crisis confronting the rural sector, and developing a coordinated, inter-departmental initiative to address the crisis is a matter of urgency.

ISSUES 6 AND 7

HOW DO INFRASTRUCTURAL AND INSTITUTIONAL SUPPLY-SIDE CONSTRAINTS AFFECT FOOD PRODUCTION IN LOW-INCOME HOUSEHOLDS? HOW AND WHY HAVE AGRICULTURAL SUPPORT SERVICES DETERIORATED?

In much of the literature nowadays, institutions and the services that they deliver are treated as 'soft infrastructure', thereby expanding and refining the more traditional definition of infrastructure, i.e. roads, pipelines, etc., the latter now being categorized as 'hard infrastructure'. Because agricultural support services constitute a major component of the soft, or institutional, infrastructure that serves farmers, it is logical and most practical to consider Issues 6 and 7 jointly.

The Issues focus on food *production* – as opposed to the broader issue of food *security* – in low-income households. The latter, as was made clear in the discussion of Issue 3, covers not just domestic food production, but income in cash and kind from all sources, agricultural and non-agricultural. The companion position paper on 'infrastructure' deals in depth with the impact of infrastructural and institutional constraints on most of the various sources of non-agricultural income. Where important gaps in coverage remain – notably in respect of soft infrastructure, such as information and credit service provision (given the companion paper's focus on hard infrastructure) – they are considered here.

To narrow the focus further, low-income households engaged in food production may be located in either rural or urban areas. Since food production in urban areas is considered in some detail in Issue 9 (on the role of food gardens), is relatively small by comparison to crop cultivation and livestock keeping in rural areas and is much less likely to be hindered by lack of access to infrastructure, attention in this section is directly solely to agricultural production by low-income households in rural areas.

Three distinct categories of such households may be distinguished: those located in the old 'black rural areas' – estimated at about 1,2 million; those settled on land in the old 'white rural areas', acquired in most instances under the Department of Land Affairs' land restitution or land redistribution programmes – estimated at between 130 000 and 140 000; and farm worker households, resident on commercial farms – probably in the region of 700 000.

Though farm worker households make up about 40% of the total and many, if not most, would certainly fall into the lowest two income quintiles, it is not clear how significant independent food production by such households is, though it has almost certainly shrunk to a small fraction of what it used to be, as farmers have converted rights to cultivate and to keep livestock into cash wages over the last 50 years. It is also unclear

how far residual efforts by farm worker households to cultivate and to keep livestock are constrained by lack of access to infrastructure in areas that have historically been well supported with infrastructure, even though the luxuries of piped water and electricity have not been enjoyed by a large percentage of the residents. Further research would be needed to arrive at firm policy conclusions in this respect – and this may or may not be seen as a priority.

As indicated in the introduction (p4), the set of constraints faced by land reform beneficiaries will usually differ from smallholders in the old 'black rural areas' – in particular, they will generally have more secure tenure and be served by better public infrastructure. The approach needed to help increase food production and reduce the incidence of food insecurity among households in this category is therefore rather different and calls, among others, for greater and more comprehensive post-settlement support and an imaginative re-visit to institutional forms and arrangements – mostly soft infrastructure issues, taken up in the sub-section on soft infrastructure, below. To the extent that hard infrastructure constraints are involved, as in the instance of irrigation, the infrastructure concerned, more often than not, will relate to privately owned, on-farm fixtures and moveables – not a priority issue for public sector policy.

This identifies food production by the 1,2 million households in the old 'black rural areas' as the centre of gravity of Issues 6 and 7, not just by elimination, but also on account of the sheer numbers of households involved, of the relative importance of domestic food production for such households (see Issue 9) and of the reluctance of government to invest in infrastructure in these areas before 1994.

The discussion focuses first on hard infrastructure constraints and then on soft infrastructure or institutional constraints.

The impact of poor access to hard infrastructure

Though most agricultural production in the old 'black rural areas' has for the last hundred years been for own consumption, there are, nevertheless, significant pockets of production for the market. In the main, these involve industrial crops, in particular sugar cane and, on a smaller scale, cotton and food crops, including barley and groundnuts (produced on contract for delivery to processors), though other food products, such as citrus and sub-tropical fruits, are also grown and marketed to local consumers in quite substantial quantities in some areas.

Strictly speaking, the hard infrastructural constraints affecting farmers in the old 'black rural areas' who produce for industrial markets should fall outside the ambit of a discussion of the constraints on food production for own consumption. However, brief consideration is given to them here, partly because, in varying proportions, most of these crops – other than the fibre crops – do end up in their producers' kitchens, partly

because, through their cash contribution, they do add to household food security and partly because this important area of public sector spending is not dealt with anywhere else in this paper and does not receive adequate attention in the companion infrastructure' paper.

Most production for the market by farmers in the old 'black rural areas' takes place on a dry land or rain fed basis. Volatile yields and vulnerability to drought make commercial production unattractive both to processors, who rely on reasonably constant volumes of throughput, and to low-income households, who, in general, are more risk averse than those at the higher end of the income scale.

Irrigation – and, equally important, the electricity that makes pumps and centre pivots less expensive to operate – are obviously aspects of hard infrastructure that could substantially boost all kinds of crop production. But, whether this involves the installation of new infrastructure or the repair of existing equipment – and there are many small scale irrigation schemes, e.g. in Limpopo, that could be resuscitated in this way, as a number of public works initiatives are doing – this should only be done against a viable plan for income generation by the farmers concerned. This is where the challenge really lies.

The public sector could assist by providing direct or cross-subsidies, either on capital outlays or on operating tariffs. If commercial farming is to be encouraged in the many parts of the old 'black rural areas' that are ecologically favourable, there is a relatively strong case for arguing for one-off capital subsidies. It is much more difficult to make a defensible case for moving away from the current policy of not subsidizing operating tariffs directly, though perhaps less so for cross-subsidies.

Among the better, though by no means certain, ways assessing the likelihood of financial sustainability is if well established commercial partners – large scale farmers, public corporations such as the Industrial Development Corporation (IDC) and/or private sector processors or end users – can be drawn in to reduce the capital and management constraints that most historically disadvantaged farmers experience so acutely, thereby also reducing many of the associated soft infrastructure costs and constraints. The recent emphasis given to rural investments by the IDC is to be welcomed and encouraged. The calibre of the collaborating institution is, of course, crucial: the IDC is in a completely different league to most of the old agricultural parastatals.

Should such partnerships qualify for capital subsidies? Though the distribution of risks, costs and benefits is obviously important, the answer depends as much on political goals as on financial outcomes. If the addition of a capital subsidy is the catalyst for a partnership that will facilitate sustainable economic development in low-income regions, it calls for serious consideration. This discussion is taken further in the sub-section on soft infrastructure below.

More often than not, it is only if both the hard and the soft categories of infrastructure constraint are eased that either category of investment becomes viable. Where such investments generate a range of substantial, positive spin-offs, the resulting sequencing problem is less difficult to solve. Food production for own consumption provides just such a set of additional grounds for expenditure on water and electricity infrastructure - through piggybacking the rather heavier infrastructure required for commercial irrigation.

Many of the short analyses in this position paper - and in the companion paper on infrastructure and services – make reference to the negative effects that lack of access to hard infrastructure have on food production in low-income households. Recalling that a large majority of households in the lowest two income quintiles – about 70% - are resident in rural areas, that most food produced by such households is for own consumption and that agriculture is, in general, a residual activity conducted only after other essential household duties, such as collecting water and firewood, have been completed, the constraints on crop cultivation imposed, in particular, by lack of access to piped water become clear. Beyond the reduction of 'time poverty', Issue 9 indicates the importance of readier access to water for food garden production.

Though solid inference is not possible, there is some statistical evidence to support this deduction. The 1993 Southern African Labour and Development Research Unit (SALDRU)/World Bank study of 10 000 households, found that among African rural households – where poverty is most heavily concentrated and who made up no less than 46% of the sample – the demand for piped water was the most popular first choice for 'what the government could do to help this household most' (SALDRU 1994, p200). Connection to an electric power grid rated second, 'jobs' third and 'food aid' fifth (after housing).

After 1994, while access to piped water improved significantly for African rural households – 61% reported receiving their drinking water from this source in 1999 as against 51% in 1994 (Anderson et al., 2002, based on annual October Household Surveys (OHS), 1994 –1999) – the percentage that still relied on streams, dams and other such sources remained large and almost unchanged in 1999 (29% in 1994 and 30% in 1999). (The fall in those relying on borehole and rainwater accounted almost entirely for the increase in the piped water percentage.) The annual OHS of 1996 – 1998 found that between 21 and 26% of households that identified themselves as being 'unable to afford to feed children' probably had to walk some distance to fetch water (as against between 14 and 15% of those who 'were able to feed children').

About 32% of those 'unable to feed children' relied on wood for their main source of energy for cooking (OHS 1996-1998), few of whom are likely to have purchased this item. The comparative figures for households 'able to feed children' were between 20 and 23%. Between 1994 and 1999, there was a substantial increase in the percentage

of African rural households that used electricity as their main lighting source - from 17 to 45% (Anderson et al., 2002, p1), but this would probably not have made more than a marginal difference to the pattern of energy usage for cooking, given the nature of the grid connections. Most that needed to collect wood for this purpose in 1994 are likely still to be needing to do so.

Clearly, such associations do not prove causality, nor do the data allow a proper assessment of the time spent drawing water, but, given the Department of Water Affairs and Forestry's water pricing policy, it is more reasonable to infer that poor access to piped water was responsible for higher levels of poverty and food insecurity than vice versa. Similarly, though perhaps less strongly, for electricity.

In both instances, while further capital outlays on hard infrastructure are needed to open and upgrade access, the supply of a monthly charge-free quota is absolutely essential for sustainability – at least from the perspective of low-income households. The broad fiscal implications are obvious, though the amounts concerned and the optimal distribution of the allocation and of the burden between bulk service suppliers and local authorities requires some working out.

Surprisingly, bearing in mind their importance for access to employment, to social grant payout points and to consumer and financial markets, 'roads' and 'transport' were ranked only 8th and 13th (out of 19) respectively by African rural households in the SALDRU study. While more and better roads can be expected to spawn better transport services and will certainly facilitate the development of commercial activities of all kinds in the historically disadvantaged areas where most African rural households are located, the households themselves appear, in general, to view the improvement of transport infrastructure as a relatively low-ranking priority. The important nuance of local variation remains to be researched, but the essential message for fiscal policy is clear.

In as far as other forms of hard infrastructure influence food production – and the links appear tenuous – few rural African households had ready access to an in-house telephone or a cell phone by 1999 – only 7%, though up from 2% in 1994. – and hardly more to a flush or chemical toilet – 13% compared to 8% in 1994. The percentage in formal dwellings rose, rather erratically, from 53% in 1994 to 58% in 1999 (Anderson et al., 2002, p1).

The impact of poor access to soft/institutional infrastructure

Little, if any, of the responsibility for providing hard infrastructure lies with the Departments of Agriculture and Land Affairs and their associated parastatals, the Agricultural Research Council (ARC), the Land Bank (LB) and the Agricultural Marketing Council (AMC). By contrast, almost all of the responsibility for providing the soft or institutional infrastructure does. This sub-section deals briefly with some of the

constraints bearing on food (and other agricultural) production in the old 'black rural areas', as well as on land reform beneficiaries in the old 'white rural areas', in respect of the major services delivered by these public sector institutions, namely, land tenure, research and development, extension and training, and credit.

Land tenure

In Issue 5, it was concluded that, though hard evidence has yet to be gathered, most of what is currently known suggests that land reform has so far added little to the capacity of low-income households to increase their output of food and fibre. From this it might be deduced that land tenure - the fundamental institution on which agricultural production rests – is the root of the problem. In fact, this is only correct to a limited degree.

It is probably correct that most of the restitution and redistribution transactions that have resulted in large groups acquiring joint rights of ownership of land have indeed created forms of tenure that are inimical to efficient land use. But it is probably also correct that in many instances, where land has been acquired by individual historically disadvantaged owners, productivity of land use is hardly greater than on farms owned by large groups and has done equally little to add to the food security of the owners. Yet, in both cases, freehold rights now apply. As the analysis points out, it is not the basis of tenure that is the problem in the latter case, but a host of other problems, many, though not necessarily all, relating to institutional deficiencies of other kinds.
Some of the most important of these were referred to in Issue 5; others are discussed in the subsections that follow.

More controversially - but also of greater significance, given the relative numbers involved – it may well not be correct that current traditional tenure forms in the old 'black rural areas' constitute a serious constraint on the productivity of land use. The brief discussion here focuses on arable land and does not attempt to enter into the complexities of pastoral commons, partly because the latter are generally of less importance for food production and income generation.

It is often argued that without the security of land as collateral, it is impossible for banks to lend to farmers in these areas. It is sensible banking practice, wherever possible, to secure loans against the asset being financed. In the same way that lending for land acquisition is naturally secured against the land itself, seasonal lending to allow farmers with inadequate internal cash resources to plant and raise an annual crop is normally secured against the expected value of the crop. i.e. crop lien. To secure a short term loan such as this with a long term bond on land sets up a term mismatch that is generally disadvantageous to both parties.

Since the overwhelming bulk of demand for credit from farmers in the old 'black rural areas' is for seasonal inputs, it is not the traditional, non-freehold bases of tenure that lie behind most banks' reluctance to lend – at least not in the case of the Land Bank –

but the combination of other factors that make either the realization of the harvest, or the repayment of the loan on the delivery of the harvest, or both, particularly uncertain. Again, some of these were referred to in the previous subsection, while others are discussed below. Even where medium term farming assets, such as tractors, are concerned, the asset itself, not the land, is – or should be – the security for a loan.

The same goes for on-farm irrigation improvements, most of which are moveable in the case of field crops – pumps, draglines, sprinklers, and so on – though this does not apply to the same extent for tree crops, which are generally more efficiently watered by fixed microjet or drip-irrigation systems.

However, there are at least two ways in which existing land tenure systems in the old 'black rural areas' may constrain increased agricultural production. The first, and most widespread, is through the general absence of customs that facilitate rental tenancy or sharecropping. Under most of the many, many different local systems that operate, occupancy goes with use, which makes households who are underutilizing the arable land occupied by them fearful of allowing others to farm it, under any tenancy arrangement. This is indeed a major constraint on output that directly and significantly affects food production for own consumption.

With HIV/AIDS expected to increase the incidence of households unable to make adequate use of their arable land and who would benefit substantially from rental or crop-share income from tenants - if they could be certain of retention of their land rights – the need to find ways of facilitating tenancy in the old 'black rural areas' is becoming even more acute. Equally so for female- and child-headed households' rights to retain land, as the rate of AIDS mortality increases. It is not impossible that the epidemic will provide the catalyst for such changes in many localities. Ironically, HIV/AIDS may turn out to be more effective in changing on-the-ground practices than new legislation, which are likely to be extremely difficult to enforce, if both communities and existing tribal authorities do not favour them.

A second important way in which operating tenure systems on the old 'black rural areas' constrain greater agricultural production applies to state-owned land – as opposed to land under the jurisdiction of local tribal authorities - of which there are substantial tracts in certain areas. Uncertainty as to the status and possible sale or lease of this land inhibits its development. Potential commercial schemes, involving large numbers of historically disadvantaged farmers, appear to be being held up on this account, for example, on the Makathini Flats in northern KwaZulu-Natal. National and local politics do indeed often complicate the issue, but it would not seem acceptable to allow them to delay decisions that will allow the realization of the productive potential of this land indefinitely. Clearly, such decisions will need to have adequate local and national support to be sustainable, but without them none of the other essential hard and soft infrastructural investments can occur.

Research and development

For the purposes of this paper, three broad questions need to be addressed: What changes have taken place in public sector research and development (R&D) services over the past decade that have had an impact on food production and the food security of low-income households in South Africa? Has this large group of households benefited, or not? And, what are the most appropriate roles for the public sector, if it is most effectively to assist these households?

The changes in public sector agricultural R&D in South Africa that took place after 1994 reflect not only the fundamental change of political direction chosen by the country but also the global shift in emphasis from the public to the private provision of R&D services. Both have served to identify poor farmers as the major clientele for public R&D.

In response, there should have been a detectable shift, since 1994, at least in the *proportion* of Parliamentary Grant (PG) funding allocated by the Agricultural Research Council (ARC) to its research institutes in those provinces in which poor farmers are most heavily concentrated, namely, Eastern Cape, KwaZulu-Natal, Mpumalanga, Limpopo, North West and Free State – if not in the Rand amount, given the decline in the Rand value of the Grant – and, within the budgets of the respective institutes, there should have been a detectable trend towards spending on services targeted at those farmers, such as dry land-oriented cultivar trials. Unfortunately, published data do not readily permit an analysis along these lines. If internal reporting and reporting to the Departments of Agriculture and Science and Technology, as well as to National Treasury, do not already require it, then such an assessment, retrospective to 1995, should become mandatory annually.

Expenditure on most of the institutes' activities is only partly financed from PG funds. A large, but variable, part of their respective incomes is also derived from external sources. One of the difficulties that they have faced as the Rand value of PG funding has fallen is that it has not been easy to offset this with increased external funding. In many cases, the latter has been based on volume-related levies from the sub-sectors that they were set up to serve, and since volumes tend to rise and fall cyclically, essential, ongoing research has sometimes been threatened by funds shortages. In other cases, farmers and down-stream users have been reluctant to pay for services previously rendered free-of-charge or on a subsidized basis, choosing either to go without the services or to source them from elsewhere.

Along with the extended turbulence of internal transformation, one result has been that a substantial number of the ARC's most highly qualified and experienced research staff have left the organization. As a consequence, it is undoubtedly correct that some of the services that the ARC traditionally performed are either no longer being performed or are not being carried out at the level that they previously were. Among these are probably some from which low-income farmers, among others, have – or should have -

benefited. While details are not readily available, it seems unlikely that farmers in the low-income category would have noticed the deterioration in services as much as the larger, better established commercial farmers, towards whom most of the ARC's services have always been targeted.

The outflow of experienced staff and the accompanying reduction of service levels has been viewed with alarm and dismay in many quarters. But it is necessary to analyse what has been happening dispassionately before deciding whether it is indeed a disaster to be reversed as soon as possible or an inevitable, if painful, part of healthy evolution.

It is not the function of this paper to consider or comment on the management style of executive team at the ARC that has been tasked with driving forward the process of transformation. Rightly or wrongly, top management at the ARC has been the subject of a good deal of criticism and, in the very understandable emotion of the situation, it has been all too easy to lose sight of what is arguably the most important issue, that is, what R&D services publicly-funded institutions, such as the ARC, should be aiming to perform in the complex environment in which South Africa finds itself.

The touchstone questions for identifying appropriate roles are much the same as those used in Issue 1, namely, is the private sector likely to do it better? and, are there likely to be large enough returns on the investment involved to make it attractive to the private sector to perform the service? Only if the answers to both are negative, should the service concerned qualify as a potential 'public service'. To make it a high enough priority for the public sector to decide to deliver the service, the positive externalities need to be sufficiently large.

It is beyond the scope of this paper to apply these criteria to the wide range of services performed in the past by the ARC's many research institutes. But were this to be done, it is highly likely that a good many would indeed turn out to be services that are inherently more in the nature of private services, the more so because most have been aimed at the higher-income segments of the market. If this is correct, then a migration of staff from the ARC to universities and the private sector – even given the net loss to the system resulting from emigration – should be viewed as a fundamentally healthy development.

However, this assumes both that the universities and the private sector are gearing up to take over the expanded research and development functions that they should ideally be playing and that the ARC itself is left with sufficient capacity and is able to re-orientate itself in a way that enables it to fulfil the roles that it ought to be playing. Among these, one that would certainly seem to meet the criteria is to serve the needs of the large number of low-income households that engage in farming mainly for own consumption – both in South and southern Africa. To avoid any misunderstanding, this is not for a moment to say that this should be the sole function of the ARC, but that it should be an explicit goal and a higher priority than it has been. In principle, funds for

this could be found by recycling them from areas of activity being phased out as they are transferred – actively or passively - to the universities and the private sector.

Another aspect of the ARC's traditional activities that appears to meet the characteristics of a public service unequivocally is the ongoing R&D to prepare and adapt vaccines in response to data collected by the Department of Agriculture's disease surveillance programmes. There is no need to explain the importance and public benefits of such a service, which the private sector is unlikely to be able to operate effectively on a profitable basis. The service is all the more important because of the pivotal role that its provider, the Onderstepoort Veterinary Institute, plays in Africa. If the effectiveness of the work of this Institute is indeed being compromised by cuts in PG support, the matter should clearly be given urgent attention.

To a large degree, the success of an R&D programme to meet the needs of these households will be determined by how closely agricultural extension services are also restructured to align with the programme.

Agricultural extension services

The 2003 Intergovernmental Fiscal Review devotes extensive coverage to expenditure on agricultural extension services and notes the imbalance between spending on salaries, on capital equipment and on consumables that reduces the effectiveness of the services in many provinces. This imbalance is probably the underlying reason for the finding in the 1997 Rural Survey, conducted by Statistics SA in 6 provinces, that only 10,2% of the 1,6 million rural households in those provinces had had contact with an extension officer in the previous 12 months.

Regrettably, identifying the problem is usually a lot easy easier than solving it. To the extent that it involves retrenchment, it is likely to take an extended period to right the imbalance. But 'rightsizing' appears to be only one aspect of the problem. As with public sector agricultural R&D, agricultural extension services were historically designed and staffed primarily to meet the needs of established commercial farmers – even if only in the middle- and lower-income strata – almost all of whom are still white. Today, many – probably most – commercial farmers rely either on the representatives of their input suppliers, e.g. seed and fertilizer company staff, or on professional management consultants to fulfil their extension needs.

Both for this reason and because of the change in political priorities post-1994, the focus of the extension services of the Provincial Departments of Agriculture is now very much more on serving the needs of historically disadvantaged farmers. But most of their more experienced field staff are poorly equipped to serve the new clientele – culturally, language-wise and in terms of their skills base. In addition, the individual training and visit system on which extension has been based has become inappropriate, given the much larger numbers of households that now need to be served. New approaches will

have to be adopted that will cost-effectively meet the needs, on the one hand, of historically disadvantaged small-scale commercial producers, and, on the other, of households growing food crops mainly for their own consumption.

In respect of small-scale commercial producers, it seems clear that extension will need to be commodity-specific to be effective and will call for the participation of the private sector – ideally both well-established farmers and input suppliers. While in some instances, such as sugarcane, it may be within the capabilities of the industry to achieve the co-operation and to foot the bill without assistance, in others, such as the much smaller cotton industry, this may not apply. As part of a strategy to revitalize cotton growing among small-scale historically disadvantaged farmers – devised in conjunction with the National Department of Agriculture – the industry will not only be expanding the activities of its own training centre (including the formal design and registration of its courses) but will be asking the Department for part-funding for its expanded extension programme, which will be driven in the main by input suppliers.

There would seem to be a strong case for the Provincial Departments concerned to allocate funds for this purpose, in exchange for relief from the obligation to provide these services itself. More generally, sector-specific public-private partnerships of a similar nature appear to offer a cost-effective way forward for extension services for historically disadvantaged small-scale commercial production.

This would also allow the Departments to focus on restructuring and retooling their extension services primarily to meet the needs of households that produce mainly for own-consumption. Inter alia, one could expect this to involve the employment and training of new staff; where possible and necessary, the retraining of existing staff, e,g. in group participation; and the devising of communications strategies that articulate more closely with R&D services and that, though use of the media, increase outreach at a relatively low cost.

The function performed by the Department's extension officers from which low-income households in the old 'back rural areas' have in the past unquestionably benefited most widely is the delivery of preventative and promotive veterinary services, chiefly the dipping and/or inoculation of livestock. The positive externalities for farmers and society at large in the country as a whole need no explanation. Until 1998/99, these services were provided free of charge or on a highly subsidized basis. Consequently, compliance with the legal requirement for farmers to take their animals for dipping at specified intervals was high. Dipping visits also provided a structured opportunity to carry out disease surveillance, education and training, demonstrations and the collection of census or survey data.

The abolition of dipping subsidies from 1999/2000 is reported to have lowered the compliance rate substantially. While the negative consequences cannot yet be

evaluated with any accuracy, there can be little doubt about the increased likelihood and extent of their occurrence. Low-income households generally feel them most directly – as in the instance of the outbreak of foot and mouth disease in KwaZulu-Natal in 2001 – but the negative impact is also often felt much more widely – as happened in the same outbreak.

The fall in compliance on the imposition of so small a fee increase (in Rand terms) makes it clear that privatisation is not an option. This is inherently a public service. Given the magnitude of the net public benefit, the attempt to operate the service on a cost-recovery basis should be discontinued as soon as possible.

Credit

The institutional infrastructure available to serve households' needs for credit for agricultural production in the old 'black rural areas' varies according to whether that production is for primarily the market or for own consumption. In the relatively small number of instances where it is for the market, institutions that engage in formal agricultural lending may be approached for crop lien-based lending (see discussion of 'land tenure' above). But, in the vast majority of instances where it is primarily for own consumption, this possibility falls away and microlending institutions become the only source of credit.

In respect of formal agricultural credit – inherently a private sector function – in most instances, it is only the public sector that plays this role in the old 'black rural areas'. With the exception of the sugar industry, formal sector private enterprise - in particular the banking industry - has stayed out of agricultural lending in these areas, more often than not justifying this on the grounds of the 'inappropriate' land tenure system, although the analysis above has shown the latter to be less of a problem than other institutional and hard infrastructural constraints. Until these constraints are eased and the volume of small and microenterprise (SME) activity increases sufficiently, it is unlikely that the formal banking industry will wish to involve itself seriously in lending in these areas.

Given the difference in their mandates, parastatal banks, by contrast, have made substantial efforts to satisfy the demand for credit in the old 'black rural areas'. By far the largest volume of lending for agricultural purposes, since the late 1990s, has come from the Land Bank, though others, such as Ithala Bank (in KwaZulu-Natal), Uvimba Bank and its predecessors (in Transkei-Ciskei) and Agribank (Northwest) have had a significant local presence. These banks have provided loans for the full spectrum of traditional short, medium and long term purposes, though in the old 'black rural areas' little medium or long term credit would have been advanced.

Statistics of default rates are not publicly available, but, in general, for historically disadvantaged farmers, one can expect the relatively high gearing alone to be making

the default rate a good deal higher than the commercial banks would be prepared to endure – without some pressure or incentive. At the same time, the relatively small Rand value of loans has probably also made the average transaction cost too high for this class of business to be attractive to commercial banks. The role played by the parastatal banks has therefore been exceptionally valuable and laudable, not least in preparing the way for the entry of the commercial banks at a later stage.

From a public policy perspective, perhaps the most important issue is the debate over the fiscal status of the Land Bank. The commercial banks, among others, are often critical of the Land Bank's continued operation in the commercial agricultural finance market, where it is still the largest single lender. It is argued either that, as a parastatal, the Bank should not be operating in a market which the private sector is well equipped to serve, and/or that the bank has unfair advantages over its private sector competitors.

Both arguments do indeed have substantial foundations. The private sector could, on its own, serve much the greater part of the needs of commercial agriculture – and would very much like to do so. In addition, the Land Bank does still have privileged tax status, being exempt from company tax. But what is most important, from a national perspective, is what the Bank does that its commercial competitors do not do and how it uses its privileged tax status.

As already indicated, the Land Bank and its fellow parastatals perform the crucial role of market development at the high risk, underserved, historically disadvantaged end of the commercial market – a role that the commercial banks have not been willing to take on. Furthermore, as will be explained below, this role has also, at least in the Land Bank's case, extended into the market for credit for non-commercial agricultural production – a far larger and even more seriously underserved market.

Clearly, the Bank can only perform this role if it is able to capitalize and continue re-capitalizing its operations in these markets, given that the default rate and transactions costs are considerably higher than in well-established markets. This is an inevitable part of market development, the costs of which should diminish over time as both borrowers and lenders become more familiar with the operations and characteristics of the market and as other infrastructural and institutional constraints are incrementally reduced.

Aware both of its new mandate, post-1994, and of its privileged tax status, the Land Bank has voluntarily committed itself to redeploying most of the profits earned from its operations in the well-established end of the market to capitalize its operations at the developing end. If it were made subject to normal company tax, this would materially affect the Bank's ability to serve the growing developing end, though it should not lead to a total withdrawal.

Only once since its inception in 1912 – during the wave of bulk storage silo building in the early 1970s - has the Land Bank found it necessary to approach National Treasury for capital. It would be a pity to risk engendering a less independent attitude by making the Bank subject to normal company tax and would seem preferable to oblige it to convert its voluntary commitments regarding the use of profits into more formal, legally binding commitments.

To privatise the Land Bank or to try to confine its operations only to the developing market, would probably cause it to cease these operations altogether, thereby intensifying, not relieving, the institutional constraints on development in general, and food production in particular, in the areas in which low-income households are most heavily concentrated.

Through its 'Step-Up' microloans, the Land Bank has also played a leading role in bringing the capacity of the formal sector to bear to serve the needs of 'unbankable' informal sector economic activity, including both commercial microenterprises and entirely non-commercial activities, such as back-yard gardens cultivated simply to help meet the household's own food needs. This initiative has enabled it to start to deliver on an important component of its mandate to serve *all* of South Africa's farmers – including the roughly 1,1 million households engaged in non-commercial production - that had never previously been given serious attention, even though, because microloans are seldom made for specified uses and effectively become part of a household's cash flow for all purposes, it cannot be claimed that the Land Bank's microloans are more than indirectly serving non-commercial farming.

An assessment of the scheme in 1999 indicated that, properly managed, it should become self-sustaining over a period of about 7 years from inception (in 1998). But, in any event, the quantum of capital required relative to the number of households served in minimal, given the small Rand value of the average loan and the high turnover rate. At the time, capital of only about R11 million was required to sustain more than 40 000 loans. If binding commitments are to be required of the Land Bank in respect of the uses to which its profits are put, it would not be out of place to seek a commitment to expanding this innovative and valuable aspect of its operations. At present, it is still a small player in rural microlending (HSRC, 2002, p98), but with considerable potential to help advance the development of this market.

ISSUE 8

WHAT IS THE APPROPRIATE ROLE OF FOOD GARDENS IN PROMOTING FOOD SECURITY?

The importance of adequate nutrition for as part of a comprehensive strategy for households coping with HIV/AIDS has already been explained (see Issue 2). Its importance for all households, particularly those in low-income communities – and even more those with children as members – is elaborated on in Issue 11, but needs little explanation to appreciate. Inadequate nutrition substantially raises the likelihood of poor health. Poor health, in turn, lowers productivity levels, whatever sorts of activity – economic or non-economic - are involved and whatever the age of the individual. Moreover, the negative effects are often not just current, but may be much longer-lived, for example, through permanent damage done to the development potential of human resources. There may also be significant negative externalities, for example in the form of medical treatment at public expense.

While cash income, whatever its source (see Issue 3), remains by far the most important single determinant of household food security and consequently of the adequacy of nutritional intake, various non-cash options exist for supplementing cash income, including the food parcels already being distributed and for which an increased budget allocation has been provided in the MTEF (Inter-Governmental Fiscal Review, 2003, p109), food stamps (see Issue 9) and domestic food gardens.

Of the three, however one views it – whether from a fiscal, a developmental or a nutritional point of view - domestic food gardens appear most attractive in principle: they should not create dependency; the quantum of food delivered should not be directly limited by the quantum of public funds allocated; and they should improve the flow and composition of nutrition. An optimistic perspective is therefore to view fiscal assistance for food garden development as seed money – literally and figuratively – with substantial leveraging potential. A less sanguine understanding is that it delivers a far less certain quantum of food for the same quantum of public funds and is unlikely to generate much sustainable development. The difficulty is to know nearer which end of the spectrum the truth lies.

A brief review of the evidence

Food gardens in urban communities

'Domestic food gardens' are often equated – or conflated - with 'urban agriculture'. However inaccurate this is – they are clearly just as much a rural phenomenon as an urban one and may, in fact, be of greater relevance in the former (see below) – most of

the literature on domestic food gardens focuses on urban agriculture and many of the conclusions that apply in urban areas also apply in rural areas, though needing a degree of adaptation to take account of differences in the environment and in resource constraints. The first section of this brief review addresses urban-based evidence and draws heavily on the Austin and Visser (2002).

Elsewhere in Africa, agricultural production in urban areas has taken on considerable importance - Nairobi, Lusaka and Harare come immediately to mind – and many of its potential advantages in terms of food security, income generation and even natural resource management have been realised, either by design or by default. But in South Africa, nowhere is it yet more than a fringe activity. A quick tour of the difficulties facing urban agriculture in South Africa is helpful in understanding why it has not yet escaped the margins, though a proper investigation of how cities in other African countries have been able to deal with what one can only imagine to be similar sets of constraints has still to be conducted.

First, in most provinces and municipalities there is no clear, coherent policy to encourage, guide and manage the implementation of urban agriculture in South Africa. The 1996 White Paper on Agriculture recognises its potential contribution to food security, but, among the provinces, it has only really been in Gauteng that the (Provincial) Department of Agriculture, Conservation, Environment and Land Affairs (DACEL), appears to have devoted significant funding to it.

The Department's sub-directorate of Household Food Security and Poverty Alleviation manages about 60 urban agriculture projects, of which about one third have been outsourced to NGOs. Support, over a maximum of 3 years, is provided in the form of extension services – provided either by the Department or by NGOs - and funding for some implements and annual inputs. A prerequisite for support is access to land with secure tenure. Often, this is a major obstacle, if not so much in Gauteng, then in other municipalities, where, rightly or wrongly, local authorities remain to be convinced of the permanence of the activity and/or of the involvement of the lessees. Locating food gardens in the grounds of schools and clinics has obvious advantages in this regard. But even with the resources that have been allocated by DACEL, insufficient capacity remains an important constraint, with applications for assistance often taking long periods to process.

Among the major cities, Cape Town and, to a lesser extent Tshwane (Pretoria) and Buffalo City (East London), are notable for their support for urban agriculture, though, until recently, this was given mainly by a small group of NGOs. School and community gardens have been the cornerstones of success in Cape Town. More than anywhere else, it would appear that food gardens have started to generate cash income for their operators in Cape Town. Net incomes of about R100 per month are mentioned for 100 square metre plots (Austin and Visser, p2-10).

However, even in Cape Town, lack of co-ordination between the various municipal departments, NGOs and community-based organizations (CBOs) whose participation is required for urban agriculture to function has been a constraining factor. These institutional shortcomings at a local level are mirrored at a national level, where the span of Departments involved – Agriculture, Provincial and Local Government, Environment and Tourism, Health, Housing and Water Affairs and Forestry, to name only the most obvious ones – has made policy co-ordination a substantial challenge at national level, with none having prioritised it highly enough to want to drive a joint initiative.

Beyond institutional constraints, there are social constraints and resource constraints. One of the latter has already been referred to, namely access to sufficient land with secure tenure. A second almost universal resource constraint is access to sufficient water. In both instances, while municipalities are invariably able to subsidize, there needs to be a clear basis for doing so for urban farmers in preference to the many other groups who could equally well justify claims for similar or other forms of subsidy. Moral hazard is obviously an issue here. Questions also arise about the inherent sustainability of the activity if it has to be subsidized and about whether such subsidies do not send incorrect signals regarding resource use. None of this is to say that subsidizing urban agriculture is unacceptable per se, rather that clear, carefully substantiated and monitored policy decisions are called for in each instance.

Among the diverse range of possible social constraints, those that that are frequently encountered include: lack of commitment of participants once land has been secured, in the face of competition from other income-earning options; a culture of dependency that often leads to the collapse of urban agriculture when public sector support is scaled down or withdrawn, especially when initiatives have been driven from the top rather than from the ground; infighting between competing groups for control of resources; skill deficiencies on the part of participants and/or of project co-ordinators; and theft. One has only to read through the reports of interviews with households and focus groups in Aliber and Modiselle's study (see *Food gardens in rural communities,* below) to appreciate how important the last of these is. Almost every group, both urban and rural, saw theft as a major disincentive to domestic cultivation. Regrettably, none of these constraints seems to have an obvious and inexpensive solution.

Food gardens in rural communities

The discussion up to this point has been framed in an urban context. How important are domestic food gardens - and domestic livestock production – in rural communities? And to what extent do they appear to suffer from the same and/or other constraints?

As already pointed out, food gardens are no less a rural phenomenon than an urban one. In fact, evidence from Aliber and Modiselle's 'Pilot Study on Methods to Monitor Household-level Food Security' conducted for the National Department of Agriculture in 6 poor communities (2 urban and 4 rural) late in 2002, though no more than indicative

(see Issue 9), suggests that they are more important in rural areas, both in terms of the proportion of household income that they contribute, and in terms of the addition that they make to nutritional diversity. Rural households that engage in cultivation appear to have a substantially greater diversity of food intake – not least of vegetables – than those (also rural) that do not. But, by comparison to households in low-income urban communities, even rural households engaging in cultivation do not appear to enjoy as great a diversity of food – including vegetables – as their urban counterparts. Ease of access to well-stocked retail food markets – with cash in hand -is evidently more important for nutritional diversity than ease of access to agricultural land.

It is also evident from the interview reports in Aliber and Modiselle's study that a significantly greater proportion of households engages in domestic food production – both crop and livestock - in rural communities than in urban communities. Practice therefore indicates that, though they may still be present in some form, on balance, the problems that beset urban agriculture are not as serious in rural communities. If one were to surmise which constraints, if any, are more serious in rural communities, they might well include access to extension support, especially by NGOs, and, in many instances still, to water.

Conclusions for medium-term policy formulation

Urban areas

- It is clear, especially in urban areas, that each Rand of public expenditure added to the cash incomes of low-income households, via social grants, will have a significantly greater marginal effect on food security – at least in the short term - than were it added to support for food gardens.
- However, while there is no case for a major shift of public expenditure into food garden support in urban areas, it is also clear that, where provinces and municipalities have prioritised such support, it has been in response to strong demand from communities and has provided valuable assistance for activities that have already demonstrated their potential to supplement food security. If such demand is evident in Johannesburg, Pretoria and Cape Town, then there is good reason to expect that it will also be present in other major urban complexes, such as Durban, Bloemfontein, Port Elizabeth and East London, particularly now that many such municipalities have been expanded to incorporate large areas of peri-urban land. Perhaps best through the forum for the country's largest cities that the Department of Provincial and Local Government recently established, all major cities should be encouraged - if not required - to conduct an assessment of the extent of urban agriculture within their boundaries and of the demand for facilities to support such activities, if they have not already done so. Depending on the outcome, it might become appropriate to make specific budget allocations for urban agriculture. Even as a percentage of budget growth (let alone as a

percentage of total city budgets), such allocations would inevitably be small at first – partly for policy development in the first year or two – with growth thereafter contingent on impact and evidence of additional demand, as revealed by ongoing monitoring and evaluation. A large part of such expenditure should be earmarked for NGO support. If shown to be productive, this process could be broadened over time to include smaller urban areas.

- At present, urban agriculture is many Departments' stepchild, but no Department's baby. To accelerate the processes just outlined, it is essential that one Department take the lead in co-ordinating the inputs of the wide range of other Departments whose support is needed both for policy development and for successful policy implementation. In urban areas, given the driving role of municipalities, there are strong grounds for asking the Department of Provincial and Local Government to assume responsibility for overall inter-Departmental co-ordination.

Rural areas

- Though in need of corroboration by more extensive research, available evidence indicates that agriculture for own consumption – whether in the form of vegetable gardens or in the form of small-scale livestock husbandry – is more important for household food security in rural communities than it is in their urban counterparts. Given this and that about 70% of the poorest households are located in rural areas, there is a convincing case for increasing the public sector's support for such production, with the objective of raising its average contribution to income from the current very low 3 to 4% (see Issue 3), in the first instance, to, say, something over 5%.
- Perhaps the most cost-effective way of achieving this is to add fiscal support to the Department of Water Affairs and Forestry's campaign to ensure that no household is further than 200 metres from a reliable source of clean piped water. The benefits in terms of time saved that can be reallocated to other activities, including domestic agriculture – which is almost always conducted in residual time after other household essentials, such as water collection, rather than as a priority – and in terms of the availability of recyclable 'grey water' (not to mention health) are obvious.
- In rural areas – in contrast to urban – the logical drivers and co-ordinators of agriculture for own consumption are the respective Provincial Departments of Agriculture, whose own extension activities should be focused on and geared specifically to the needs of this aspect of agriculture, as distinct from production for the market by historically disadvantaged (or well established) commercial farmers, for which outsourcing or public-private partnerships may well offer the best way forward (see Issues 6 and 7). Inter alia, the training received and delivered by the Departments' extension staff should cover the use of 'grey water' for vegetable garden irrigation – it is understood that much of the water used for household purposes, e.g. for cleaning and washing, can safely be re-used for

irrigation, if handled correctly. In respect of the budget for extension services, correcting imbalances between allocations for staffing, capital items and consumables may make it unnecessary to increase the total in order to achieve the objectives just outlined (see also Issues 6 and 7).

ISSUE 9

WHAT INFLUENCE DO FOOD PRICE FLUCTUATIONS HAVE ON FOOD SECURITY? AND HOW MIGHT THEIR INFLUENCE BEST BE MITIGATED?

Food price policies and food price volatility have a very real effect on welfare, especially in lower income countries and communities. Of that there is no shortage of evidence. But, more often than not, it is only the high profile, short-run, negative manifestations of these policies that gain attention – not that these are any the less real or any less in need of a suitable response - while the more subtle and usually the more positive long-run manifestations are overlooked. It is important to note both and to consider appropriate responses to each in the light of what is also known about the other.

The impact of food pricing policies and of food price volatility: shorter-term perspectives

There can be little doubt that sharp food price increases that take place over a period of time short enough not to allow nominal incomes – particularly wage rates - to adjust upwards too, do indeed have a negative impact on food security. It is also correct that the brunt of such increases is borne by the poorest, who, as is well known (see Engel's Law), tend to spend the largest proportion of their income on food.

The very rapid increase in the price of staples that took place in the second half of 2001 - notably in the price of the benchmark commodity, white maize – focused public attention on the issue of food price fluctuations and led government to launch a number of initiatives to investigate, monitor and mitigate the causes and consequences.

Among these was a request by the National Department of Agriculture to the Integrated Rural and Regional Development research programme of the Human Sciences Research Council to conduct a pilot study to establish a methodology for monitoring and evaluating the impact of such price increases on low-income communities in both rural and urban areas. Although the sample that was permitted by the timeframe and the budget was too small to draw statistically valid inferences – and was, in any event, not drawn on a strictly random basis – a by-product of the research was a set of results that provided valuable initial insight into the impact of the price increases on low-income households. A further caveat is that it was not possible to track and allow for the influence of all of the other changes in households' circumstances that may also have helped alter their food consumption patterns. So the results are inevitably impressionistic – but no less interesting on that account.

During the 6 months, April – October 2001, the retail price of (white) maize meal paid by consumers in the 6 communities surveyed – 4 rural and 2 urban – rose, in most

instances, by between 25 and 35 %, while sugar increased by around 20% and rice – an imported substitute for maize meal – by anything between about 25 and 65%. Average spending on these items increased by 28%.

Participants in the focus group interviews – corroborated in the main by the individual household interviews – 'agreed that high food prices had tended to force households to reduce the number of meals per day and change the composition of their food consumption; they had opted for cheaper foodstuffs of lower quality or bought inferior substitutes for their normal foods. Many participants spoke of the emergence of new, cheaper brands whose safety they doubted. In general, (they) seemed keenly aware of the importance of getting enough protein in their diets and many substitutions were aimed at ensuring protein in the diet, given that meat and eggs were no longer affordable…Poorer diets were often cited as having an especially negative impact on children, who for lack of sufficient nourishment often had difficulty concentrating at school' (Aliber and Modiselle, 2002, p24).

Significantly, the authors add, 'participants frequently asserted that government was not doing enough to counter the rises of food prices and questioned whether, at some point, (it) would step in to do something'.

To repeat, this was a very small sample and one has to be cautious not to extrapolate too readily. But all of this is exactly what one would expect and that one reads about in the literature. Regrettably, there is very little reason to suppose that this small snapshot is not part of a much broader picture. The fact is that sharp rises in food prices do hurt the poor and do attack already tenuous levels of food security. The question is what best to do about it without losing sight of the longer aspects of the issue.

The impact of food pricing policies and of food price volatility: longer-term perspectives

Enough time has elapsed since the deregulation of agriculture began in South Africa in the early 1980s and since its climax, with the passage of The Marketing of Agricultural Products Act in 1996, to evaluate its impact fairly thoroughly. As one would expect, during the decade and a half that the deregulation process spanned, there were many predictions about the negative outcomes that it would have, inter alia, on food production and on the level and volatility of food prices.

In practice, as Bayley (2000) shows in his excellent study, few of the dire predictions have come to pass, rather, more of the optimistic forecasts than one might have dared to hope. Between 1992 and 1999, at the time of the study, food prices remained almost unchanged in real terms and even volatility levels were relatively low. 'Such food price stability is all the more impressive', he points out, 'when it is considered that liberalization of agricultural marketing and trade (took) place in the context of an

exchange rate that…weakened significantly in real terms…(and that) the… agricultural sector was still in transition…(with) farmers (having) to adjust production patterns fully to new circumstances and (with) farmers and processors alike (having to learn to) manage their price risk' (p78).

Given this long period of relative stability, it is perhaps not surprising that the real prices of most agricultural products did turn upwards shortly afterwards, although a study completed for the National Agricultural Marketing Council in November 2002 still concluded that the real prices of basic food products decreased between January 1998 to December 2001.

Among other important positive outcomes have been the continuation of the general upward trend in overall production and productivity levels, greater investment in agriculture, an increase in the real value of agricultural exports accompanied by an extension of the positive balance of trade in agricultural products, a decline in land prices and the contraction in value of public funds called for by agricultural subsidies to one of the lowest levels in the world (in relative terms). Only in respect of employment and the slowness with which historically disadvantaged farmers have been absorbed into the commercial mainstream have the results been disappointing.

While public policy laid the foundations for this generally welcome set of outcomes, the private sector responded with its own accommodating and enhancing initiatives. Arguably the most important of these was the development of futures markets (SAFEX's Agricultural Markets Division (AMD)) to help manage price risk for key locally produced agricultural commodities, in particular yellow and white maize. Not only have these facilitated better risk management, more competitive price formation and more efficient resource allocation in the private sector, but they have, in effect, relieved the public sector of any responsibility to hold strategic stocks, at least in respect of the various major agricultural staples traded (mainly yellow and white maize, sunflower seed and potatoes), since the market now generates the price signals needed to allow the private sector to manage the risks of holding stocks both during and between marketing years.

The volatility of futures prices is often seen as the main cause of sharp rises in food prices. While there is clearly a causal relationship between the two – driven by the former - recent research (Kirsten, 2003) indicates that the retail price of (white) maize meal is several times less volatile than the futures price and is also less volatile than the Rand/USDollar exchange rate, which in turn influences futures prices. It is also not generally appreciated that the viability – and therefore the benefits - of futures markets is premised on the volatility of prices. In principle, this could lay them open to manipulation, with possible adverse effects for retail food prices, but, in practice, this is highly unlikely.

What the longer run perspective reveals is the extraordinary benefits that consumers and farmers alike have generally reaped from a more market-driven pricing policy.

Considerations for medium-term policy formulation

When sharp food price increases occur, as they did in 2001 and 2002, and will inevitably continue to do periodically, it is essential not to lose sight of these benefits – and consequently to risk undermining them – by attempting to reshape the foundations of the pricing and marketing framework. In contrast, there may be more scope for the state to extend and improve short-term ameliorative role that it already plays through non-price interventions targeted at low-income households.

The acid test of the current agricultural pricing and marketing framework will come *when* there is a serious supply shock for white maize, the region's most important staple. As Bayley observes, this is not a matter of 'if' but 'when', given that relatively little white maize is grown outside southern Africa and that so large a part of the crop is, in turn, grown in South Africa in most years. Drought, such as occurred in the early 1980s and again in the early 1990s, is the most likely cause.

He goes on to outline a number of mechanisms by which the market can be expected to prepare for shortages – partly through hedging on local and international markets and partly through carrying physical stocks – and to respond to them when they do happen – chiefly through substituting yellow for white maize (yellow maize should at least be more readily available on the international market) and through importing white maize from elsewhere (production would probably rise in response to the price premium) (pp97-100). But the retail price of maize meal will inevitably rise on local markets, inducing the same symptoms of food deprivation that Aliber and Modiselle's study documented, only on a magnified scale, if the supply shock is severe.

When this happens, the pressure on the South African government to intervene in ways that do undermine the foundations of the deregulated framework may be intense. Specifically, there are likely to be calls to regulate the price by introducing price ceilings and/or export bans – though the latter will be of little relevance at a time of domestic shortage – and for the public sector to reintroduce the carrying of strategic stocks.

South Africa has little experience of effective agricultural price ceilings below import parity, given the disproportionate political power of the commercial farmer lobby in years gone by. But further north, Africa's experience with urban-biased policies that kept downward pressure on agricultural producer prices shows clearly how this creates disincentives to produce, thereby exacerbating domestic shortages, upward pressures on retail prices and the need to import. Similarly, effective ceilings on wholesale and retail prices send strong signals to processors to carry the minimum of stocks.

Should South Africa carry strategic stocks of grain?

If there is indeed a case for carrying such stocks, it is likely to be strongest in the instance of white maize, which is most vulnerable to supply shocks.

Clearly, having a physical stock on hand in times of shortage has substantial advantages: security, time and shipping cost saving and price cushioning. But against these, a number of negative factors must be weighed: storage costs; opportunity costs (difficult to estimate because of the unpredictability of price movements subsequent to the purchase of the stock, but at least including the interest payable annually – perhaps around R50 million at present for a stock of 500 000 tonnes); the pressures of managing the stock efficiently and impartially in the face of powerful lobby groups whose demands are likely to vary from month to month and year to year, depending on market conditions; the disincentive signalled to the private sector to perform a task that almost every international study indicates it does more cost-effectively than the public sector (Kirsten, 2003); and the inability, ultimately, to prevent severe price fluctuations in times of severe shortage.

Bayley concludes that even the case for the public sector to carry a strategic store of white maize is weak. Recently, the National Department of Agriculture indicated that it is considering carrying 'virtual stocks' of some grains. It is not clear how this would be operationalized and whether it would alter the costs and benefits materially. There would seem to be an onus on the Department to explain the workings of the envisaged scheme sufficiently for it to be evident whether the net balance of disadvantages that has applied to the carrying of physical stocks will be more than fully offset. Even if the scheme does offer significant explicit cost savings, it would still appear that the public sector would be assuming responsibility for managing the maize industry's price risk – a responsibility that clearly lies beyond its mandate.

Options for non-price intervention

Most of the options for relieving the impact of food price increases that do not involve interventions in fundamental food pricing mechanisms, such as those just discussed, revolve around increasing poor consumers' income or reducing their expenditure. In terms of the relatively neutral impact that such measures have on the operation of markets, this approach is certainly preferable in principle. Not only does it minimize the distortion of production patterns, but it should also be clearer when to phase the intervention concerned out and less difficult to do so. The return of the relevant retail prices to more normal levels should be the signal and consumer resistance should then be relatively low.

Effective targeting and administration pose challenges, as has already been noted. Piggybacking them onto existing social grants and using the current institutional

infrastructure to distribute them would appear to be the least-cost solution, even if less than perfect.

It is beyond the scope of this paper to examine the wide range of cash grants that already exist or that might be added for this purpose. But one option for augmenting income with a food-specific non-cash grant that is impervious to price rises is a food stamp system that is denominated in physical rather than monetary units, e.g. in kilograms of maize meal of a specified quality, as opposed to Rands. Moll (1982) draws attention to a number of such programmes that have operated successfully in other countries.

ISSUE 10

HOW CAN THE DEVELOPMENT OF PROACTIVE AND REACTIVE SYSTEMS TO MINIMIZE AND RESPOND TO FOOD EMERGENCIES BEST BE UNDERTAKEN OR ASSISTED?

Over the past decade (proceeding from the International Decade of Natural Disaster Reduction), attention to disasters and emergencies has shifted to include a 'risk-reduction' and more proactive approach (ISDR, 2002). Previously much attention had been focused on emergency response, event driven and 'mopping up' procedures with a strong focus on relief ('biscuits and blankets' approach). While not disregarding such emergency responses, the focus now, in much of the disaster management literature and in the wider development community, is on coupling *emergency response* (in the short-term) with a *risk-reduction approach* (in the longer-term). The key feature that links shocks such as drought, for example, to human capital formation and long-term food security is that "temporary" shocks such as drought can have "permanent" effects (von Braun et al., 2003, 15). Southern Africa provides such a complex, contextual disaster and emergency case.

Southern Africa is currently facing a severe food shortage with several countries in the region reporting heightened food insecurity driven by a range of factors including climate, governance and wider economic factors (Morris, 2002; Vogel and Smith, 2001). In South Africa food insecurity, much like its northern neighbours, has also become the focus of renewed attention associated with drought (e.g. Limpopo Province) but also accompanied by several structural issues such as food prices (e.g. rising prices for maize) (Watkinson and Makgetla, 2002).

Paradigmatic shifts have also occurred in the field of food security. Five phases of food security policy and practice have been identified: Global food security (1974-80); food entitlement and structural adjustment (1981-85); the golden age (1986-90); a focus on poverty (1991-95) and finally, since the mid-1990s, a phase that acknowledges the human right to food (Maxwell, 2001). Embedded in these phases is the debate between bolstering food production (a more Malthusian approach of the 1970s) and that of consumption and access (analysis that has marked food security policy since the late 1970s). An emphasis on enhancing agricultural production and improved access to food through provision of productive employment opportunities, job programmes and other socio-economic issues (e.g. in the case of South Africa land reform) have become key focal points.

Improving food security – a structural perspective

Haddad and Zeller (1996) illustrate how *one can attempt to do more with less*, particularly when examining the role that 'safety nets' can play in enhancing food

security through food subsidies, targeted income transfers, public works, school feeding, social funds, pension schemes, and small credit and are designed to protect the income entitlements of particularly vulnerable groups during times of stress (Haddad and Zeller, 1996) (see Appendix 1, for more details). One way of enhancing livelihoods and incomes is, for example, through job creation via public works programmes and conditional cash or food transfers (e.g. PROGRESA program in Mexico, von Braun *et al.*, 2003). Such programmes can be used as both an intermediary strategy as well as a short-term, expanded strategy during an emergency e.g. a drought period. Such scaled-up programmes during periods of food stress have usually been the determining feature of successful projects (e.g. Botswana: Hay, 1988; Dreze, 1989; Buchanan-Smith, 1990). During the early 1980s droughts in Botswana, for example the Labour-Based Relief Programme, a cash-for work programme, in Botswana reached an average of 70 000 participants.

Despite some of the successes of such programmes there remains a need to further investigate some of the following: What is the political economy of social assistance programmes and public works programmes given the rapidly changing political landscape in South Africa? How well targeted are the public works programmes? How can such programmes be made sustainable? (see also Haddad and Zeller, 1996). In the South African context it may be useful to research, for example, the interface of such programmes e.g. public works progammes; the Basic Income Grant (Thurlow, 2002); school feeding schemes; and a variety of others during both 'normal years' and crisis years. Are they effectively reaching their targets? Are they sustainable in 'normal' years? What are the implications of such schemes on livelihoods and the wider economy and also at the local level? (Simmons and Lyons, 1992). How does one cater for those who participate (able-bodied) and those who cannot actively participate (Ravallion, 1990)? From such an analysis one can then begin to identify ways in which they could be scaled up during 'emergency' or crisis periods. Research would thus have to focus on a number of issues including the need for co-ordination between various institutions, NGOs and CBOs.

Disaster risk reduction, preparedness, response and recovery

Having addressed some of the structural aspects related to food security in emergency and normal years we now examine relevant aspects of disaster reduction and management. Prevailing practice with respect to protecting food security in disaster-prone communities has not kept pace with research on protecting livelihood security in rural areas exposed to recurrent shocks. The likelihood of loss to both sudden onset shocks as well as external stressors is driven by prevailing conditions of socio-political, economic and environmental vulnerability. Current planning efforts usually tend to exclude chronic processes that erode food security (e.g. drought) or powerful sudden onset wide area events. Such weather systems (e.g. extreme storms and cyclones) trigger multiple impacts across sectors and communities that result in destruction of

essential infrastructure, disrupted services, access to markets, damaged irrigation systems, plus asset loss and temporary displacement for affected communities. As a result, many well-intentioned development interventions in rural areas are not yet 'disaster proofed'. This results in unnecessary disruptions to critical services and household livelihood systems that undermine food security, particularly for poor rural households with pre-existing vulnerabilities.

Current institutional emergency responses to either sudden or slow onset hazards seldom incorporate considerations of prevailing vulnerabilities – that are often differentiated within and between communities affected by the same hazard process (Box 1, see Appendix 3). In this context, levels of HIV or TB infection are considerable drivers for the likelihood of loss, particularly in protracted periods of stress, such as a prolonged drought. Households/communities shouldering significant HIV burdens are more vulnerable to external shocks, and have significantly constrained resources to meet basic food security requirements. Current compensation mechanisms, also neither address risk reduction nor recovery priorities for households with fragile sources of livelihood and food security (for further details contact Holloway and DiMP, UCT).

Vulnerability assessments - risk reduction tools

As evident from much of the discussion thus far, vulnerability assessments are increasingly being recognized as a pivotal way of helping to identify those most at risk to periods associated with climate variability and other periods of stress. Investigations of coping and other livelihood strategies used during normal and 'abnormal' periods (e.g. those of stress) have indicated that knowledge of these strategies is critical because it helps frame effective mitigation activities (e.g. strategies and actions to assist people during times of stress) (see for example Longhurst, 1986; 1992; Davies, 1996). Various NGOs including humanitarian groups, as indicated above e.g. SCF, have experience in undertaking vulnerability assessments (Moseley and Logan, 2001). As indicated below, this is an area for urgent research development.

Early Warning Systems (EWS) – preparedness and response?

In its more traditional use early warning in the food security context has been used as a tool to mitigate the negative effects of stress e.g. climate (for alternative uses of EWS see Appendix 2). Early warning information can potentially allow a user to make appropriate choices in the light of expected seasonal climatic characteristics (e.g. switch to a more drought resistant crop or cultivar, destock, prepare for waterlogging). Gaps and weaknesses in the ability of the early warning system in South Africa to fulfil such a function remain, however. Stakeholders in the early warning system have identified areas of priority concern at the point of producing forecasts and warnings. Research capacity (both within the South African Weather Service and at other forecast producing/supporting institutions) comprises the greatest constraint in improving the science of forecasting.

Since combining multiple source (skilful) forecasts has been shown to be superior to reliance on a single forecast source, SAWS initiatives to combine forecasts in a scientifically sound manner need to be supported. Secondly, initiatives to provide forecasted parameters in addition to seasonal precipitation totals require encouragement and support [3]. Lastly, initiatives underway at SAWS and linked forecast-producing institutions to improve the existing forecast and warning products (for example, the use of Model Output Statistics, investigating the role of Indian Ocean sea surface temperatures, improving monitoring and measurement) require support as forecast producers continually seek to improve the science of climate prediction in South Africa.

All stakeholders surveyed as part of the early warning system characterization identified application of forecasts as the greatest challenge when the system is considered as a whole. Intermediary institutions and processes play a critical role here. Key to this process is the Directorate of Agricultural Risk Management (ARM) of the Department of Agriculture who has training and intermediary projects both ongoing and under development. In partnership with the Agricultural Research Council's Agrometeorological Division (ARC-Agromet) and the South African Weather Service, ARM's Early Warning Subdirectorate has led a programme to improve early warning awareness in the agricultural sector. The programme was established with the explicit intention of disseminating forecasts to the developing agriculture sector and is intended to train agricultural extension officers on the interpretation, understanding and dissemination of weather and climate information to farmers and rural communities.

Institutions involved in the Early Warning Subdirectorate programme are aware of a critical need to extend this kind of training to disaster management personnel in the country, to municipalities and to the general public. For example, cabinet representatives have also recently requested that this training be extended to other climate-sensitive sectors. NDA-ARM and SAWS are currently looking at availability of funds to continue and extend the programme.

The institutions and processes identified above serve critical intermediary roles in applying early warning information. All require support to improve their ability to increase warning information utility. The NDA-ARM training, as shown above, has great potential to be extended to other climate-sensitive sectors (early warning plays, for example, an essential role in disaster management). The NDA-ARM training done to date should also be reviewed through external pilot projects to assess strength and weaknesses, and to refine future directions. The agricultural advisory is in a preliminary stage, and even limited (but targeted) support would aid in its development and potential in coupling appropriate management and response strategy recommendations to early warning information. With support, the advisory could be interactively developed for other

3 A gap analysis undertaken for the SADC climate information system (RRSU 2002) shows that users in agriculture rank intraseasonal rainfall quality prediction as their greatest need. 12 SADC countries (100% of those surveyed, including South Africa) requested the provision of predicted intraseasonal precipitation characteristics, should these be viable.

climate-sensitive sectors (e.g. health, disaster management, water), and could be made specific at the provincial, district and even municipal level (for example, locally specific crops and stock diseases affected by climate).

Forecast/warning message characteristics may constrain their utility. Message content must be understandable and usable. Concerns here include language itself (e.g. forecast or warning message content must be in a locally used language or dialect), and terminology used. Support of intermediary processes (such as extension and development of NDA-ARM and SAWS training programmes and materials) would be helpful in this regard. Secondly, the way in which forecast/warning messages are disseminated may constrain their utility. Users have, for example, also requested that the advisory be made locally specific and coupled with the disseminated message or warning. For example, a warning of extreme cold and windy conditions would be coupled to a locally specific advisory for an area suggesting coping strategies for livestock farmers, householders, municipal managers and others. Thirdly, forecast or warning content needs to be optimized for user needs. As shown above, users have requested that for seasonal forecasts, parameters in addition to seasonal precipitation totals be made available. Requests are made for forecasted season onset, length, dry-spell frequency and season cessation to be made available, for example.

Finally, users may be constrained in their ability to respond to forecast or warning information, even should they wish to do so and know how they would like to respond. Access to key resources (e.g. building materials, credit, supplementary irrigation) is most commonly cited as a constraint on users' response capacity and refers again to the structural dimensions of food security. Mitigation of climate risk thus needs to be more closely coupled to the recognition that the environment in which affected individuals and communities operate has multiple stressors. Mitigatory strategies, or initiatives in support of mitigatory strategies, need to be significantly more closely coordinated with initiatives dealing with stressors other than climatic risk (e.g. public health initiatives, poverty reduction initiatives, support for developing agriculture).

Regional issues: food security in an SADC context

Some, but not all of the constraints to food security in the region, that have been outlined elsewhere (Glantz, Betsill and Crandall, 1997; Ncube and Chisvo, 1999; Mano, Isaacson, Dardel, 2003; SADC FANR VAC Assessment, 2003; NEPAD; 2003), include the following:

- *The state of regional and national preparedness*: In the early 1990s drought, for example, it was found that governments and humanitarian agents usually only initiated responses when the rains had failed and crop amounts had visibly decreased, this despite earlier warnings. One reason for this late response was the view that drought is seen as an *event* rather than the result of a *process* (Glantz, Betsill and Crandall, 1997). There is thus a need to find ways to press

governments to use resources wisely and to combine efforts, so that early warning is not seen as a reactive operation separate from government but is part of ongoing data collection and monitoring (e.g. nutrition data, clinic information), thus a case for an expanded food information system.

- *The need for disaster management and contingency response at a regional level*: Some countries in the region have disaster management plans or strategies. There is a need to see where these can be co-ordinated to improve regional disaster mechanisms, both as emergency contingency plans (e.g. grain reserves etc) and also longer-term risk-reduction strategies. High level meetings of this type, for drought, have been held in the past e.g. during the late 1990s with a series of recommendations (e.g. building human capacity to design, implement, monitor and evaluate drought policies and programmes; strengthen national and regional EWS; ensuring contingency planning for drought management; developing databanks on EWS for food security and market information analysis; promoting technology development and transfer etc (Ncube and Chisvo, 1999).

Conclusions for medium-term policy formulation

In this brief section, some of the various dimensions of food security, both within the region and nationally, have been presented. In a country and a region where development issues are a high priority it would make sense to try and twin disaster management and development wherever possible. Some shorter-term actions, including relief efforts and preparedness have been suggested. These are essential, particularly when food stress is heightened by such events (e.g. in the Western Cape with the recent flooding event). In the medium-term, however, such actions need to be complemented with a longer-term, risk-reduction approach. This will require serious investments in developing the capacity of public institutions, government and the public (the interfaces between these), research support, appropriate data collection and use (in many cases these data are collected but are not effectively shared by various groups); and enhancing analytical capacity for strategy development (e.g. vulnerability assessments, a livelihoods information system etc).

Although this is a very wide field, the following policy priorities for the medium-term, as motivated above, can be identified:

- Urgent attention should be given to the training and skills development of various government personnel and relevant others to enable appropriate vulnerability analyses in urban and rural contexts and at national and sub-national levels. Once such training has been given then departments can begin to co-ordinate information, with a variety of other interested groups, in the design of vulnerability assessments that can assist in the identification and targeting of those most vulnerable to food stress.
- Support for improved research capability (research staffing, training of junior scientists, project support) needs to be emphasized in any attempt to improve

traditional early warning and possible expanded early warning systems (e.g. livelihood monitoring systems) capability in South Africa.

- Support is critically needed for targeted initiatives to: combine multiple source forecasts; investigate feasibility of predicting intraseasonal precipitation characteristics; improving skill of existing forecast and warning products.
- Four areas of targeted support would yield high benefits: increased support to existing initiatives at NDA-ARM's Early Warning Subdirectorate; support for a small pilot project to evaluate the outreach of NDA-ARM training to date; support extension of NDA-ARM training to Disaster Management personnel and other climate sensitive sectors (e.g. water, health, energy); support further development of the agricultural advisory, including:
  - establishment of a technical committee for support and review
  - development of the advisory for other climate-sensitive sectors.
- Targeted support in two areas would be highly beneficial in improving forecast utility to end-users: Knowledge management to consolidate findings from forecast applications studies done to date in South Africa; development of a strategy plan developed interactively with key stakeholders in Early Warning to improve forecast characteristics dissemination, content and enabling environments to increase forecast utility.
- SADC member countries begin to co-ordinate contingency plans and risk-reduction strategies as a matter of urgency. Where these are not in place, country disaster plans and contingency plans be prepared and implemented.
- Regional Early Warning units need to be researched with a view to assessments of their current relevance, their roles in assisting and dovetailing with VAC assessments and the possibility, where resources permit, of establishing food information systems that include vulnerability related data.
- Various national departments begin to archive and collate all related documents that have been drafted over the past 20 years (to begin with) including those High Level Meetings that have been co-ordinated as SADC meetings. By having a repository of information research of lessons learnt or lost can be undertaken and a 'disaster risk reduction' inventory can be compiled.

Specifically in respect of research:

- Research the role, function and effectiveness of social security programmes and policies, across and within institutions and government departments with reference to enhancing household and national food security. This research should focus on various spatial scales e.g. national, provincial and local and temporal scales (e.g. scaling up of programmes during crisis years).
- Research the underlying conditions of vulnerability, as well as the livelihood strategies/institutional support mechanisms that either increase or diminish losses and hardships in times of crisis. This is important for planning appropriate risk-reduction strategies that can be integrated into local development initiatives and then sustained by local structures.

- Research events classified as ‘local’, ‘provincial’ or ‘national’ disasters retroactively to capture essential ‘lessons learned’ on how to improve the appropriateness and effectiveness of preparedness and response interventions. This is critical for generating a “South African-owned’ body of knowledge and experience that can better inform disaster management decisions, rather than prevailing responses that are often costly and mismatched with actual needs.
- Research alternative forms of post-disaster support for compensation of losses, recovery and risk reduction efforts. This would explore the implications of lost medium-long-term employment opportunities to food/livelihood security, as well as the identification of better-tailored strategies that would avert future losses, with concomitant strengthening of food security. This specific research would require differentiation with respect to gender, age and household composition (i.e. including consideration of child-headed households in disaster-prone rural areas).

Appendix 1

Social security and food security

The role and impact of a variety of structural influences on food security have been examined internationally (e.g. Maxwell and Devereux, 2001; Millennium Project, 2003); regionally (e.g. Mano, Isaacson and Dardel, 2003) and locally (e.g. Watkinson and Makgetla). In several of these assessments some of the key themes that have emerged include investment in agricultural development; assessing the impacts of HIV/AIDS on food security; more detailed investigations on poverty, national governance and macro-economic stabilization. A variety of other structural issues related to food security have and should also be considered. These relate to ways of targeting interventions so as to reduce food insecurity (see for example Table 10).

Table 10: Dimensions of Social Security

	Private Provision	**Public Provision**
Insurance Function	Pensions Health care Unemployment insurance Inter- and intra- transfers e.g. gifts, - remittances, - reciprocal informal consumption credit	Pensions Health care Health insurance Unemployment insurance
Assistance Function	Interfamily transfers Intrafamily transfers Voluntary contributions	Child allowance General consumer subsidies Public works Credit schemes Cash transfers Social funds Relief programs

note: 'public' denotes governments, NGOs and CBOs. Private denotes individuals, households and markets (adapted from Haddad and Zeller, 1996). Relief programmes should include research into the role of social services and compensation for disasters and does not only refer to humanitarian relief.

Appendix 2

Early Warning Systems

The role of information, such as that contained in EWS, in disaster reduction is well documented. Some have, however, called for EWS to move beyond the narrow focus on extreme events and food supplies to what has been termed 'livelihood monitoring systems' that regularly assess non-famine processes (e.g. seasonal under-nutrition). What may such a system look like and require at both national and sub-national levels? At a *national level* a food monitoring system can be implemented that builds on information related to both food self-reliance and household food access. Early Warning Systems here take on a food information focus rather than only a warning device for threats associated with climate variability e.g. drought and floods. At a *sub-national* level much attention has been devoted to devising ways to monitor and strengthen indicators that may help to improve assessments of food situations of specific groups usually based on dividing the country geographically or functionally (by population sub-groups). One approach is that used by FEWS NET and others, the food economy or agroecological zones (e.g. SCF- Seaman, 1996, World Food Programme, 1997; VAM and others e.g. Boudreau, 1998). Several vulnerability assessments have been undertaken, more recently those associated with the VAC (Vulnerability Assessment Committee) in the region, and information from these could help inform a livelihood monitoring system.

Appendix 3

Box 1: Seasonal farm workers affected in the March 2003 Montagu floods (after DiMP, UCT, 2003).

Between 23-24 March 2003, a powerful weather system swept across the Western Cape, triggering flooding in Montagu as well as elsewhere. Over 500 households in the BKS housing settlement in Ashbury, near Montagu were severely rain-affected. Many households were evacuated and provided with food at soup kitchens.

Most of the residents of the BKS settlement were casual farm workers, who are dependent on seasonal employment on commercial farms, that concludes around the end of March and does not resume until September. In the meantime, they eke out a living with erratic weekly work, augmented with Social Services grants.

The heavy rain that fell consistently on Sunday and Monday 23-24 March and triggered flooding disrupted weekly employment opportunities. Therefore, these casual workers received no weekly wage on Friday to buy groceries. Moreover, due to electricity outages that week, all their perishable food spoiled. Community-run soup kitchens closed on Wednesday 26 March. By the weekend, these workers had no food in their homes, no cash to buy groceries, and no access to soup kitchens.

In this example, a clearer understanding of the fragility of the livelihood systems of seasonal farm workers might have ensured that soup kitchens had remained operative until the following Friday 4 April when workers expected their weekly wages (or food parcels provided in the interim, after the soup kitchens closed).

Just as a more strategic approach to protecting food security in disaster-prone communities is required in development action and emergency preparedness and response, there are pressing needs to revisit arrangements to support compensation and recovery in the aftermath of events classified as ‘local’, ‘provincial’ or ‘national’ disasters.

Issue 11: What are the most cost-effective ways of improving public health services and public education to reduce malnutrition?

Issue 11: What are the most cost-effective ways of improving public health services and public education to reduce malnutrition?

ISSUE 11: What are likely to be the most cost-effective ways of improving public health services and public education to reduce malnutrition?

In the face of evidence that approximately half of South Africa’s population live in poverty, many of whom suffer from malnutrition, government is faced with the challenging question: What are likely to be the most cost-effective ways to reduce malnutrition? In order to address this question, the relationship between malnutrition,

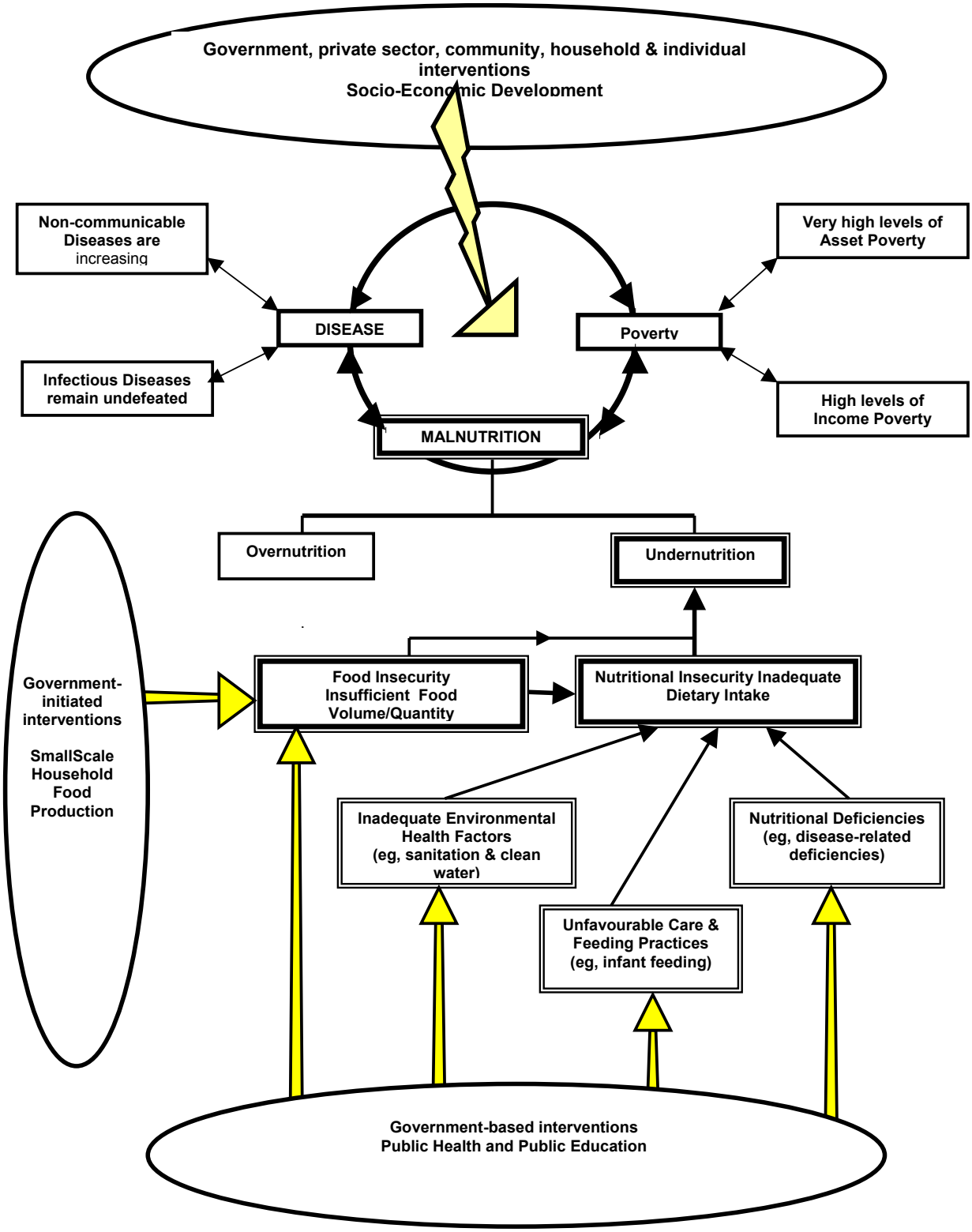
disease and poverty needs to be explored. Malnutrition is an inevitable result of disease and poverty, and in turn, it exacerbates disease and poverty in a vicious malnutrition-disease-poverty cycle (see Figure x). Presently, infectious diseases (e.g. HIV/AIDS) remain undefeated and non-communicable diseases (e.g., diabetes) are increasing in South Africa. At the same time, most South Africans have high levels of both asset (e.g. lack of productive assets such as land) and income (e.g. wages) poverty. In combination, these factors not only exacerbate malnutrition, but also complicate interventions to combat it.

Three key government intervention areas warrant attention:

- firstly, general socio-economic development, and the amelioration of the low economic and assets base of impoverished communities, are necessary for the vicious malnutrition-disease-poverty cycle to broken be in a lasting way.
- secondly, the development of more viable land-based livelihood strategies needs to be promoted, particularly in rural areas. Similarly, direct access to household food production needs to be facilitated in both urban and rural areas where large landless populations reside in order to improve independent household food security.
- thirdly, more effective public health and public education interventions are required in order to utilise existing nutritional resources optimally, and improve nutritional levels whilst decreasing the disease profile and poverty status of the population incrementally. The interventions must be cost effective to the state and available, accessible and affordable to the population, particularly to the poor. Four causative and/or precipitating factors that significantly influence inadequate dietary intake are: (i) food insecurity (e.g. insufficient volume or quantity of food), (ii) environmental health risk factors (e.g., inadequate sanitation and clean water), (iii) nutritional deficiency (e.g. disease-related deficiencies), and (iv) unfavourable care and feeding practices (e.g. infant feeding), (see again Figure x).

This presentation focuses on malnutrition in terms of undernutrition, and particularly inadequate dietary intake, and highlights some key public health and public education interventions in each of the above four causative factors. These interventions need to complement the Integrated Nutrition Programme and the overall anti-poverty strategies of the government.

Figure 6: The Malnutrition-Disease-Poverty Cycle in South Africa



Malnutrition: undernutrition

Malnutrition can result from overnutrition or undernutrition. Overnutrition due to excess volume of food with certain nutrients often results in obesity, is a growing problem particularly amongst South African women. Whilst it is predictable that insufficient food quantity would result in inadequate dietary intake, dietary intake might also be a problem even in households where there appears to be sufficient volume of food. Key manifestations of malnutrition include wasting (thinness), stunting (shortness) and being underweight. Secondary consequences include poor health, less resistance against infections, lack of energy, decreased cognitive ability and reduced work productivity.

For nutritional security, there is an ideal daily requirement of proteins, vitamins and minerals that varies between groups of individuals according to their differing needs, such as pregnant women, infants, and the elderly. The nutritional status of an individual is influenced by several factors: quality as well as the quantity of food consumed, the health status of the individual (especially in regard to communicable diseases such as HIV/AIDS), the ability to digest, absorb and utilise nutrients (which is decreased due to certain illnesses and diarrhoea), accessibility of health services, food distribution within the household, feeding practices, food hygiene, sanitation, and access to clean water.

Key public health and public education intervention areas

Food insecurity: insufficient food volume

Two basic kinds of interventions are possible in regard to general food insecurity.

Firstly, rural and urban household food production can be stimulated. This would entail cooperation between various governmental departments, whereby the Agriculture and Social Development departments should taking leading roles. Public education should focus particularly on small-scale basic household food cultivation (see Issue 8) and food preparation skill development implemented in all schools, adult education programmes, and community based learning partnerships (e.g. in cooperation with community health workers). In this context, the deliberate promotion of household food production (e.g. in the above education programmes, in the media and by influential public personalities) should be promoted as a valuable asset and cultural good.

Secondly, given the extent and severity of food insecurity in certain communities, a medium-term strategy would inevitably need to involve forms of food relief that target impoverished households and communities. Although fostering dependency on food aid is an unfavourable long-term intervention, large-scale food relief can effectively prevent further decline into destitution and chronic poverty (see Issue 2). Since the majority of poor people are particularly dependent on their physical strength as a

source of livelihood, the effects of food insecurity on poor health are devastating. The long-term costs of not acting in this area are indeed extremely high.

Previous nutrition interventions in South Africa have generally concentrated on food aid in, for example, the form of feeding schemes introduced at clinics, crèches, schools or soup kitchens. To date, school food programmes have not been a major success, particularly in the light of substantial financial resources invested in these programmes during the last decade. However, the extent of poverty and food insecurity endured by about half of all South African children continues to necessitate school feeding in poverty stricken areas. However, much more attention should be given to basic nutritional education in schools, adult education, community based learning partnerships (e.g. in cooperation with community health workers) and in health facilities (e.g. clinics). Qualitative research to investigate the most appropriate implementation methodologies is warranted.

It is most likely that direct state interventions in the form of food relief will remain necessary for the foreseeable future to address the insufficient food volume in large parts of the country. This reality demands the composition a comprehensive, detailed and pro-active food emergency strategy, which will also have to account for future potential regional food crises in Southern Africa, due to potential natural disasters and social pressures (see Issue 10).

Inadequate environmental health factors: sanitation and clean water

There is sufficient evidence to support a causal relationship between insufficient hygiene/poor sanitation, increased susceptibility to disease (especially diarrhoea related diseases), and a deterioration in nutritional status. Considering that around 15 million South Africans still lack sufficient sanitation, this appears to be a most urgent point of intervention, whereby unconnected clinics, schools and areas with large a concentration of people should be given top priority. Increased rollout of sanitation must be designed and implemented in conjunction with hygiene facilities (e.g., water close-by) and social interventions that promote personal hygiene (particularly the washing of hands after using a toilet) as an important life skill. An extension of the Water, Sanitation and Hygiene (WASH) awareness campaign, and of extensive hygiene education in the school curriculum. The development of environmentally friendly sanitation systems, especially in larger urban areas, also warrants more attention (see accompanying 'Infrastructure' position paper).

Nutritional deficiencies: disease-related deficiencies

In order to address disease-related deficiencies adequately in impoverished communities, it is of paramount importance to establish accessible health care that can act on a curative and a preventative basis. Certain preventative primary health care

interventions, (including immunisation and deworming), as well as curative primary health care (such as providing antibiotics for ARI and vitamin A treatment for measles), should always accompany, or even precede, nutritional intervention in order to be most cost-effective.

The low nutritional status of the poor in South Africa related to both inadequate quantity and insufficient nutritional quality of food, is based on the limited nutritional intake found in maize meal that many poor people, especially children, depend on for a substantial part of their diet. The most cost-effective means to address the poor nutritional intake is through fortification, as it addresses many nutritional insecurity issues directly. However, not all nutrition requirement groups can benefit from fortification (e.g. infants who rely on breast milk for their nutrition). The nutritional needs of these smaller groups need be addressed through supplementation programmes. Overall, in the light of the emerging international body of knowledge, more research in relation to micronutrition supplementation, particularly in regard to vitamin K, seems warranted.

South Africa has a high ratio of infectious diseases (such as TB and HIV/AIDS) and high infant mortality due to gastrointestinal diseases (especially diarrhoea). Gastrointestinal diseases result in decreased dietary intake, loss of appetite, poor absorption and loss of nutrients in stools, leading to undernutrition, which in turn increases susceptibility to disease and impairs the immune function of the individual. Good nutritional status, on the other hand, helps to prevent secondary infections. Disease-specific nutrition support seeks to break the vicious cycle of disease and malnutrition. The development of more specifically targeted disease-specific nutrition counselling, support, treatment and information in the public health system thus requires more attention.

Inadequate care and feeding practices: infant feeding

Women and girls are important targets for education on nutrition and eating practices because of their pivotal dual productive and reproductive roles (i.e. high physical work levels, pregnancies and child care). In addition, the within-household food distribution may favour men over women and boys over girls, so even if a household has access to sufficient food, this does not necessarily mean that the nutritional needs of all its individual members (particularly women and girls) are met, who are then at greater risk of disease and malnutrition. In addition, foetal and childhood malnutrition makes individuals more susceptible to the consequences of overnutrition and non-communicable diseases such as diabetes. Obesity, in turn, is a risk factor for diabetes (type 2), ischaemic heart disease, hypertension and cancer. Since dietary habits are formed early in life, it is crucial to promote the principles of a well balanced diet at a young age.

Nutritional status care practices, including hygiene, weaning and health care seeking behaviours, and feeding practices (e.g. breastfeeding and infant nutrition), should aim to facilitate the optimal and most sensible use of existing household nutritional resources. There are three target areas of care and feeding practices that warrant special attention in Adult Public Health and Public Education programmes:

- *prelacteal feeding:* breastfeeding shows a strong correlation with higher nutritional status. Unfavourable feeding habits frequently start during prelacteal feeding, since there is a growing tendency to accustom babies to food by introducing them to solids too early (particularly in cases where the mother needs to return to work). Premature solid feeding increases the number of infections.
- *specific feeding practices:* each specific age group of children (e.g. infants versus toddlers) has unique nutritional and care needs in terms of frequency of feeding, food viscosity, quantity, nutrient density, hygiene, persistence and patience. In order for improved feeding practices to be sustained, it is important to address both breastfeeding techniques as well as complementary feeding habits simultaneously.
- *feeding and illness:* poor feeding patterns are likely to occur during and immediately after illness due to lack of either food and/or the required knowledge to make informed decisions by the caretaker. The concept of recuperative feeding during the recovery from illness is crucial to ensure that the required nutrients for recuperation are obtained. Furthermore, household members with food insecurity and diseases typically care and feed their children less because of increased time spent on gathering food, fuel and water, or feeling too weak and sick (see Issue 2).

It has to be cautioned that public health and education-based interventions, no matter how comprehensive, cannot succeed in combating malnutrition in isolation in the long term and needs to occur in conjunction with socio-economic developments. More specifically, poverty-reducing programmes should be closely integrated with nutrition-orientated projects, as well as visa versa, e.g. in Integrated Development Programmes (IDPs). If the conditions at home remain unchanged in terms of short-term food insecurity and long-term chronic poverty, even the most comprehensive educational programmes will have only a limited impact.

South Africa's campaign to achieve food security and improved health is challenged by growing urbanisation and alterations in food demands, as well as the effects of HIV/AIDS on households. Demographic transitions are often accompanied by changes in nutrient intake and dietary patterns, and it is necessary to acquire a comprehensive understanding of the determinants of these changes. Informed knowledge of nutrition transitions would assist in health promotion and disease control through more appropriate intervention programs based on relevant policies and strategies. Nutritional changes accompany demographic changes, and consequently many impoverished households encounter altered diets. More research into the long-term effects of these nutritional changes and into appropriate cost-effective government interventions is required.

REFERENCES

Aliber, M. 2001. *Study of the incidence and nature of chronic poverty and development policy in South Africa: an overview*. Background Paper 3. Chronic Poverty Research Centre.

Aliber, M & Modiselle, S. 2002. *Pilot study on Methods to monitor household-level food security.* Report for the National Department of Agriculture: Pretoria.

Aliber, M. 2003. *Small-Scale Agriculture as Revealed by the Labour Force Survey*, Version 2.

Archer, E.R.M. (in press). Identifying Underserved End-User Groups in the Provision of Climate Information. *Bulletin of the American Meteorological Society*.

Austin, A and A. Visser 2002. *Study Report: Urban Agriculture in South Africa.* Council for Scientific and Industrial Research Report no. BOU/1243, Pretoria.

Baier, E. G. 1997. *The impact of HIV/AIDS on rural households/communities and the need for multisectoral prevention and mitigation strategies to combat the epidemic in rural areas*. FAO: Rome.

Bayley, B. 2000. *A Revolution in the Market: the Deregulation of South African Agriculture.* Oxford Policy Management, Oxford

Bradshaw D, Masiteng K & Nannan N. 2000. Health Status and Determinants, Chapter 4. *South African Health Review 2000*, 89-124.

Benson, C. & Clay, E. 1998. The Impact of Drought on Sub-Saharan African Economies. *World Bank Technical Paper No. 401*, World Bank.

Boudreau, T. 1998. The food economy approach: a framework for understanding rural livelihoods. *ODI Relief and Rehabilitation Network Paper*, 26, May, London: Overseas Development Institution.

Bonti-Ankomah S & Mlambo P.M. 2000. *Situational Analysis of Households' Food Security and Nutrition Programmes in South Africa*. National Institute for Economic Policy, December 2000.

Bonti-Ankomah S & Mlambo P.M. 2000. Situational Analysis of Households' Food Security and Nutrition Programmes in South Africa, National Institute for Economic Policy, December 2000.

Bonti-Ankomah S. 2001. *Addressing food insecurity in South Africa*. Paper presented at the SARPN conference on Land Reform and Poverty Alleviation in Southern Africa, Pretoria, 3-5 June 2001.

Brough, D. 2001. *African farming skills and diversity being lost to AIDS*. Pretoria News, 4 December.

Bryceson, D & Banks, L. 2000. End of an era: Africa's development policy parallax. *Journal of Contemporary African Studies*, 19 (1): 5-25.

Charlton, K.E and Rose, D. 2002. Prevalence of household food poverty in South Africa: results from a large, nationally representative survey. *Public Health Nutrition*, 5(3): 383-9.

Cohen, D. 1998. *Poverty and HIV/AIDS in Sub-Saharan Africa*. HIV and Development Programme Study Paper No. 27, UNDP.

Cousins, B. 2001. *Not rural development, but agrarian reform: beyond the neo-liberal agenda*.Unpublished paper presented at the Department of Land Affairs Land Tenure Conference, Durban, November.

Davies, S. 1996. *Adaptable Livelihoods: Coping with Food Insecurity in the Malian Sahel.* Oxford: Macmillan.

de Klerk, M. 1984. *The Incomes of Farm Workers and Their Families: a Study of Maize Farms in the Western Transvaal.* Carnegie Conference Paper no. 28, Southern African Labour and Development Research Unit, University of Cape Town.

Department of Agriculture, 2001. *The Strategic Plan for South African Agriculture.* Pretoria: Department of Agriculture.

Department of Agriculture. 2002. *The Integrated Food Security Strategy for South Africa.* Pretoria: Department of Agriculture.

Department of Health. 1995. *South African Vitamin A Consultative Group.* Pretoria: Department of Health.

Department of Health 1998. *South Africa Demographic Health Survey*, Pretoria: Department of Health.

Department of Social Development. 2002. Transforming the Present Protecting the Future. *Draft Consolidated Report*. Report of the Committee of Inquiry into a Comprehensive System of Social Security for South Africa (Taylor Committee). Pretoria: Government Printers.

De Waal, A & Tumushabe, J. 2003. *HIV/AIDS and food security in Africa*. Available at http://www.sarpn.org.za/documents/d0000235/P227_AIDS_Food_Security.pdf

Devereux, S. 2001a. Social pensions in Namibia and South Africa, *IDS Discussion Paper, 379.* Institute of Development Studies, University of Sussex.

Devereux, S. 2001b.Food Security Information Systems, in *Food Security in Sub-Saharan Africa,* Devereux, S. and Maxwell, S., ITDG Publishing, London, University of Natal Press, Pietermartizburg, South Africa, 201-228.

Devereux, S. & Maxwell, S. (Eds). 2003. *Food Security in Sub-Saharan Africa*. ITDG Publishing, London.

DiMP (Disaster Mitigation for Sustainable Livelihoods Programme) UCT. 2003. *Report of impacts of the March cut-off low – Western Cape*. Report commissioned by the Provincial Department of Social Services and Poverty Alleviation, Western Cape, FAO, and Provincial Development Council, Western Cape.

Donahue, J; Kabbucho, K & Osinde, S. 2000. *HIV/AIDS – Responding to a silent economic crisis among microfinance clients.* Unpublished report, MicroSave Africa

Dreze, J. 1989. Famine prevention in Africa. The Development School of Economics Research Programme, Paper 17. London School of Economics.

Drimie, S & Van Zyl, J. 2003. *HIV/AIDS and food security in Swaziland, Zambia and Zimbabwe.* Input into the Third Round Food Security Assessment, SADC-FANR VAC, Harare, Zimbabwe.

Du Guerny, J. 2001. *Agriculture and HIV/AIDS*. Paper prepared for EASE International, May.

Düval G.H. 2002 . *Towards an appropriate Extension Approach for South Africa*. Unpublished report. University of Pretoria, South Africa, December 2002.

Eicher C.K. 2002. Mozambique: *Draft review of the implementation of the Extension Master Plan and Proposals for Improvement*. Report prepared for the National Directorate of Rural Extension, Ministry of Agriculture and Rural Development, Maputo, Mozambique, July 31, 2002.

Food and Agricultural Organisation. 1999. HIV/AIDS and agriculture: an FAO perspective. *FAO Fact Sheet.* Rome.

Food and Agricultural Organisation. 2000. AIDS – a threat to rural AFRICA. *FAO Fact Sheet*, December. Rome.

Food and Agricultural Organisation HIV/AIDS Programme. 2002. *HIV/AIDS, food security and rural livelihoods*. www.fao.org

Fourie, P & Schonteich, M. 2001. Africa's new security threat: HIV/AIDS and human security in southern Africa. *African Security Review*, 10 (4).

Glantz, M., Betsill, M. & Crandall, K. 1997. *Food Security in Southern Africa: Assessing the use of and value of ENSO Information.* NOAA Project, NCAR, March.

Gros, G.J. 1994. Of Cattle, Farmers, Veterinarians and the World Bank: The Political Economy of Veterinary Services Privatisation in Cameroon. *Public Administration and Development*, 14: 37-51.

Gulati, A., Sharma, P.K. & Kahkonen, S. 1996. *The Food Corporation of India: Successes and failures in Indian foodgrain marketing.* IRIS-India working paper no.18, IRIS center, University of Maryland, College Park, USA.

Haddad, L. & Zeller, M., 1996. *How can safety nets do more with less? General issues with some evidence from southern Africa*. FCND Discussion Paper No. 16. Food Consumption and Nutrition Division, International Food Policy Research Institute, Washington D.C.

Hay, R.W., 1989: Food, aid and relief development strategies. *Journal of Social Development in Africa,* 4: 7-25.

Holloway, G., Nicholson, C & Delgado, C. 1999. *Agroindustrialisation through Institutional Innovation: Transaction Costs, Co-operative and Milk Market Development in the Ethiopian Highlands.* MSSD Discussion Paper No. 35. International Food Policy Research Institute, Washington DC, Washington.

Human Sciences Research Council*. 2001. Micro-finance in rural communities in Southern Africa: country and pilot sute case studies, policy issues and recommendations.* Report prepared for the Integrated Rural Development Program of the W.K. Kellogg Foundation, Southern Africa by the Human Sciences Research council.

International Fund for Agricultural Development (IFAD). 2001. *Strategy paper on HIV/AIDS for East and Southern Africa*. Working document.

IPCC. 2001: *Climate Change 2001, Impacts, Adaptation, and Vulnerability*. Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University press.

ISDR. 2002: *Living with Risk: a global review of disaster reduction initiatives.* Preliminary version, prepared as an inter-agency effort coordinated by the ISDR Secretariat with special support from the government of Japan, the WMO and the Asian Disaster Reduction Centre, Japan.

Johansson, R. 1998. *National and Household food security: Effects of Zambian economic reform.* Staff report. USAID/Zambia: Lusaka.

Kassier, 1992. *Report to the Committee of Inquiry into the Marketing Act*

Knudson, O & Nash, J. 1990. Domestic price stabilization schemes in developing countries. 1990. *Economic Development and Cultural chang,* 539.

Labadarios, D. (ed.). 2000. *The National Food Consumption Survey (NFCS): Children aged 1-9 years, South Africa, 1999.* Pretoria, South Africa.

Loewenson, R & Whiteside, A. 2001. *HIV/AIDS: implications for poverty reduction*. Paper prepared for the UNDP for the UN General Assembly Special Session on HIV/AIDS, 25-27 June 2001.

Longhurst, R. 1986: Household food strategies in response to seasonality and famine, *IDS Bulletin*, 17.

Longhurst, R. 1992: *Country experiences in famine mitigation, Famine Mitigation*. Occasional paper, Prevention, Mitigation and Preparedness Division, OFDA/USDA.

Lund, F. 1993: *Inserting social security between relief and development. Paper presented at the Conference on Food Security in South Africa*. National Consultative Forum on Drought, Johannesburg, June, Centre for Social and Development Studies, University of Natal, Durban. Mimeo.

Mabeza-Chimedza, R. 2000. Transforming agricultural service delivery institutions for greater responsiveness. *Agrekon,* 39(4): 412-431.

Makhura, M.T.; Ndou, K.S.; Maifo, M.C.; Sethole, M.R.S. & Mapeto, M.K. 1999. Group Discussion Findings on Farmers' Needs for Agricultural Transformation in the

Manaorolla, J. 1991: *The food security index*. Mimeo, USAID, Washington DC.

Mano, R.; Isaacson, B. & Dardel, P. 2003: Identifying policy determinants of food security response and recovery in the SADC region: The case of the 2002 Food Emergency. *FANRPAN Policy Paper*, FANRPAN, March 2003.

Marcus, T. 2000.Crafting in the context of AIDS and rural poverty: a livelihood strategy with prospects. *Transformation*, 44.

May J. 1998. *Poverty and Inequality in South Africa*, Pretoria, South Africa.

Mbaya, S., 2003. *The Southern African food security crisis*. A paper presented at the meeting: Food Security in Southern Africa: Causes and Responses from across the Region, on the 18th March 2003. Human Sciences Research Council, Pretoria.

McLachlan, M. & Kuzwayo, P. 1997. Input on Nutrition into the Poverty and Inequality Report.

Mutangadura, G; Jackson, H & Mukurazita, D (eds). 1999. *AIDS and African Smallholder Agriculture*. Southern African AIDS Information Dissemination Service (SAFAIDS), Harare.

Maxwell, S. 2001: The Evolution of thinking about food security, in *Food Security in Sub-Saharan Africa*, Devereux, S. and Maxwell, S., ITDG Publishing, London, University of Natal Press, Pietermaritzburg, South Africa, 13-27.

Millennium Project. 2003. *Halving Global Hunger*. Background paper of the Task Force 2 on Hunger, April, 2003.

Moll, P. 1984. *A Food Stamp Programme for South Africa.* Carnegie Conference Paper no. 223, Southern African Labour and Development Research Unit, University of Cape Town.

Morris, J.T. 2002: *Executive summary of the first mission of the special envoy to Lesotho, Malawi, Mozambique, Swaziland, Zimbabwe and Zambia*. United Nations, Rome.

Moseley, W.G. & Logan, B.I. 2001: Conceptualising hunger dynamics: a critical examination of two famine early warning methodologies in Zimbabwe, *Applied Geography*, 21: 223-248.

National Department of Agriculture 2003. *Agricultural Advisory*. Available at http://www.agis.agric.za. Accessed June 2003.

National Treasury. 2003. Intergovernmental Fiscal Review 2003. Pretoria: Government Printers.

NEPAD Secretariat. 2003: *The Food Crisis in Africa*, May Issues NEPAD, Midrand.

Ncube, P. & Chisvo, M., 1999: *Regional Drought Management Strategy for SADC*, Revised Draft, submitted to SADC-FSTU, Harare, Zimbabwe.

Nel, J.H & Steyn, N.P. 2002. *Report on South African food consumption studies undertaken amongst different population groups (1983 – 2000): Average intakes of foods most commonly consumed.* Department of Health, Medical Research Council.

Northern Province. *Report on the Investigation into Market Access, Report on Phase 1.* National Agricultural Marketing Council, Pretoria.

Nutrition Information Centre of the University of Stellenbosch (NICUS). 2002. *The Depreciation of the Rand: Mothers and Children will be the Hardest Hit*. NICUS, Stellenbosch.

Randela, R. 2000. *Socio-Economic Impact Analysis of Disease Control Programmes with special Reference to Ticks and Tick-Borne Diseases*. Unpublished MSc Thesis. University of Pretoria, South Africa.

Ravallion, M., 1990: *Reaching the poor through rural public employment.* World Bank Discussion Papers. The World Bank, Washington, D.C.
Ray, S.K. Food Management revisited. *J. Ind. School Poli. Econ,* 6(2): 313.

RIACSO. 2002. *HIV/AIDS and the southern African Humanitarian Crisis*. Report from Consultation organised by UNAIDS and RIACSO, 6-7 November, Johannesburg.

Rose, D., Bourne, L. and Bradshaw, D. 2002. *Food and Nutrient Availability in South African Households: Development of a nationally representative database*. Medical Research Council, South Africa.

SADC FANR Vulnerability Assessment Committee. 2003. *Towards identifying impacts of HIV/AIDS on food insecurity in southern Africa and implications for a response: findings from Malawi, Zambia and Zimbabwe*. Harare, Zimbabwe.

SADC FANR Vulnerability Assessment Committee. 2003. *Towards identifying impacts of HIV/AIDS on food insecurity in southern Africa and implications for response: Findings from Malawi, Zambia and Zimbabwe.* Harare, Zimbabwe.

SADC-RRSU 2002. Proceedings of the Annual Agromet Workshop. 11 – 15 November 2002, Harare. SADC-Regional Remote Sensing Unit.

Seaman, J. 1996: The food economy approach to Vulnerability Assessment and the RiskMap Computer Programme, in FAO, Second Informal Meeting on Methodology for Vulnerability Assessment: *Summary Report*, Rome, FAO.

Shung-King, M.; Giese, S.; Hendricks, M.; Iriam, J.; Abrahams, E.; Guthrie, T.; Hussey, G.; Jacobs, M. & Proudlock P. Child Health, Chapter 19, *South African Health Review 2000*, The Press Gang, Durban, December 2000, 365-391.

Simister, J. & Piesse, J. 2002. *Household Consumption Decisions and Nutrition in South Africa.* Centre for the Study of African Economies (CSAE), St Catherine College, Oxford.

Simmons, C. and Lyons, S., 1992: Rhetoric and reality: the management of Botswana's 1982-1988 drought relief programme. *Journal of International Development,* 4: 607-631.

Statistics South Africa. 1996- 1998 October household survey data.

Statistics South Africa. 2000. *Measuring Poverty in South Africa.* Pretoria, South Africa.

Statistics South Africa and UNDP. 2003*. Social Development Indicators for the Government of South Africa's 10-Year Review: Millennium Development Goals (Final Draft).* StatsSA and UNDP, Pretoria.

Thurlow, J. 2002: Can South Africa afford to become South Africa's first welfare state, *USBIG Discussion Paper, No. 43*, November, 2002.

Topouzis, D. 2000. The implications of HIV/AIDS for household food security in Africa. Paper presented at ECA/FSSDD workshop, Addis Ababa, 11-13 October.

UNAIDS. 2002. AIDS Epidemic Update, December 2002., Joint United Nations Programme on HIV/AIDS (UNAIDS) and the World Health Organization, Geneva, Switzerland.

Vink and Kirsten. 2000. Deregulation of Agricultural Market in South Africa: Lessons Learned. *FMF Monograph,* 25. Published by the Free Maket Foundation. Sandton, South Africa.

Vink and Kirsten. 2002. *Pricing behaviour in the South African food and agricultural sector.* Report for the National Treasury.

Vogel, C. 2000. Usable Science: an assessment of long-term seasonal forecasts among farmers in rural areas of South Africa. *South African Geographical Journal*, 82(2): 107-116

Vogel, C. & Smith, J. 2002: The politics of scarcity: conceptualizing the current food security crisis in southern Africa. *South African Journal of Science,* 98(7/8): 315-317.

Von Braun, J., Hazell, P., Hoddinott, J., Babu, S. 2003. *Achieving Long-term Food Security in Southern Africa: International Perspectives, Investment Strategies and Lessons.* Paper presented at the Southern Africa Regional Conference on Agricultural Recovery, Trade and Long-term Food Security, March 26-27, Botswana, 2003.

Vorster, H.H, Oosthuizen, W., Jerling, J.C, Velman, .FJ & Burger, H.M.1997. *The Nutritional Status of South Africans: A review of the literature from 1975-1996*. Health Systems Trust, Durban.

Wanmali, S & Islam, Y. 1997. Rural Infrastructure and Regional Development. In L. Haddad (ed): *Achieving Food Security in Southern Africa*: New Challenges, New Opportunities. International Food Policy Research Institute, Washington D.C

Watkinson, E & Magetla, N. 2002. *South Africa's food security crisis*. Report for National Labour and Economic Development Institute (NALEDI).

Watkinson, E. & Makgetla, N. 2002: *South Africa's food security crisis.* Paper prepared for National Labour and Economic Development Institute (NALEDI).

World Food Programme, Various vulnerability analyses, WFP.

Zulu, P, M & Mlawu, J.F. 2002. *The Road to Wealth and Job Creation: Development through Roads Construction and Maintenance in Kwazulu Natal*. Paper Presented at the Rural and Urban Development Conference, 18-19 April 2002, Gauteng.