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*The third in this series of Indicator SA articles (see Bernstein, Adams here) focuses on the effects of the drought on commercial agriculture, rural communities, subsistence farmers and the economy as a whole, as well as specific impacts on growth, income, expenditure and employment. It also briefly evaluates the effects of rural restructuring on the impact of future droughts. The article is based on several reports on the drought, including two recent studies by the South African Reserve Bank and the Development Bank of Southern Africa.*

South Africa has recently experienced (and in some areas is still experiencing) one of the severest droughts of the past century. Agricultural production in the summer rainfall regions has been markedly lower than expected in a normal rainfall year. Although the relative contribution of the agricultural sector to Gross Domestic Product (GDP) has declined sharply since the 1960s, agriculture still plays a prominent role in the economy. The drought thus not only influences the economy via its direct effect on the agricultural sector, but also through the linkages of agriculture with the rest of the economy.

The drought affects different communities in different ways. Farmers, for instance, are particularly vulnerable. It takes only a month or two of low rainfall to destroy dryland crops in farmers' fields. This is a risk that South African farmers face on a regular basis every season; it is one for which they (should) plan either by ensuring that they have sufficient savings or by taking out some form of insurance.

Commercial farmers, however, have one important resource - their effective political lobbies. For this reason, concern should be focused upon the plight of the poor communities who, in many cases, have no organised voice, nor structures in place to ensure that their needs are recognised and met.

The impact of drought has also to be assessed against the current extent of poverty in South Africa. An estimated 42% of the population live below the poverty line; 40% of working age people have no formal job; and less than 10% of new entrants to the job market can find a formal job. This means that even if drought is not in itself a major problem, it may be the last straw for many communities which are already at the limits of survival.

The prospects for improvement over the short-term are not good with negative per capita 'growth' in the South African economy. We need to look to the welfare of the poor beyond the immediate period of drought. Much of the grinding poverty that lies behind these figures is hidden in the homelands.

### *Limits of Survival*

The impact of the drought on poor rural communities and subsistence farmers has been very different to that of the commercial agricultural sector. The issue is not really one of production losses, but one of the human impact. For poor people, this translates into decreased levels of employment, income, food, nutrition and health.

While the aggregate production losses in terms of crops, livestock, portable water

*What about the plight of the poor communities who have no organised voice, nor structures in place to ensure that their needs are recognised and met?*

*Drought may be the last straw for many communities which are already at the limits of survival*

supplies, etc., are not as large as those of the commercial sector, they form a vital part of the rural household's entitlement or ability to obtain food. The impact of this loss in terms of survival is therefore crucial.

It is often mistakenly assumed that the self-provision of food can be equated with security of food supply. People in the so-called 'rural areas' cannot support themselves by subsistence farming alone. Research indicates that a high percentage of rural households are in fact net consumers of food, even though many of them are engaged in food-crop agriculture. Sales of food are also highly skewed with a small minority of households accounting for more than 80 per cent of the sales. Certain areas are now totally reliant on outside assistance. Livestock losses in these rural areas are particularly severe (up to 60 per cent in certain areas), due to the poor condition of rangelands and overstocking.

It is important also to dispel the myth that people in these so-called 'rural areas' (many of them are better described as 'displaced urban areas') support themselves by subsistence farming. In only a few areas are there natural resources to allow the majority of families to live off the land. The main sources of income for South Africa's rural poor are remittances from the cities, pensions and, for a small minority, homeland salaries. Because they have no access to productive resources - or to jobs in the productive economy - they are desperately dependent on the fortunes and misfortunes of others. Informal security systems are important, but are insufficient if the entire community is affected.

The impact of the drought on employment is compounded by the national employment crisis and the decreasing potential for self-employment. The consequence of economic crisis and drought may be measured in terms of unemployment and income statistics; the real measure of its impact is in terms of food, nutrition and what it does to the ability of people to feed themselves. One reality we face is that millions of South Africans face hunger. The other is that we do not know how many are threatened.

What drought has done is to make some people more vulnerable to hunger; it is not clear that, in itself, it is the major cause of hunger, simply a contributing factor and, for many families, the last straw. Drought-related health problems, apart from nutrition, include diseases caused by lack of cleanliness (many kinds of

diarrhoea, for instance) as well as more serious diseases transmitted in the absence of safe water - such as typhoid and cholera. While there are reports of sporadic cases of cholera, what is clear is that the general health of the population - and of children in particular - has deteriorated in areas where people are hungry and have inadequate water supplies.

Most affected by these problems are communities in the homelands; commercial farmers usually have resources to ensure that domestic supplies at least are maintained. There are unfortunately no soundly based estimates at national level of the scale of the problem. What makes the poor particularly vulnerable is not just that they lack resources. They neither have the political lobbying power nor the structures to ensure that their needs are recognised and met.

## Poverty in Perspective

There is a distinct difference between famine (as a result of, for example, drought or floods), and the quieter and more persistent phenomenon of regular under-nutrition and deprivation, both from the view of diagnosis and action. It is, therefore, instructive to view the consequences of the drought on agriculture, the environment, and rural people in a national context of endemic under-nutrition and poverty.

The drought certainly has had a negative impact on the other, already struggling, sectors of the economy. This is in terms of agriculture's decreased contribution to the national economy as well as a further influx of rural people into the urban areas. However, the ongoing national economic problem, while further exacerbating the impact of the drought (lack of markets for agricultural produce, etc.), is in itself a far greater cause of poverty than the drought.

Employment losses in the agricultural sector should be compared with the job losses in other sectors such as mining and manufacturing. Official unemployment is in the region of 20 per cent, but 42 per cent or five million people cannot find employment in the formal sector. Ninety per cent of the 300 000 annual new entrants into the formal job market cannot be absorbed each year. This far exceeds labour displacement as a result of the drought.

In previous droughts, the majority of rural families had access to migrant remittances.

*The impact of the drought on employment is compounded by the national employment crisis*

This source of income is much less reliable. The number of people requiring assistance can be estimated according to two norms. According to income norms, about 17 million people (42 per cent) have an income lower than the minimum subsistence level in 1990. The current drought has therefore exacerbated the existing and persistent structural problems in the national economy.

## Macro-Economic Impact

Agriculture's direct contribution to GDP has varied between 5 per cent and 7,3 per cent over the previous ten years. Although the agricultural sector's relative contribution to GDP is small and still declining, it nevertheless plays an important role in the creation of wealth in South Africa, specifically in the rural areas.

The share of agricultural production in total output has been severely affected at times by poor weather conditions and droughts. In 1992 the drought and the expected poor harvest of summer crops not only led to a further decline in the contribution of agriculture to GDP, but it also causes a lower-than-expected economic growth rate. It is well known that the agricultural sector has very important linkage and multiplier effects on the rest of the economy.

The *forward* linkages originate from the agricultural sector's delivery of a wide range of raw materials to the secondary sectors. A report by the Economic Advisory Council of the State President indicates that according to the input-output table of the national economy, approximately 58 per cent of the value of agricultural production was delivered to secondary industries for further processing, whereas the delivery of agricultural production to processing industries amounted to 8,2 per cent of the total value of manufacturing production.

The *backward* linkages with other sectors arise from the fact that the agricultural sector is an important purchaser of the products and services of other sectors. The manufacturers of livestock feed, fertilisers, insecticides, agricultural machinery and implements can be singled out as fairly exclusively dependent on sales to farmers. If production in the agricultural sector should decline because of drought conditions, this will inevitably influence activity in these industries.

The total impact of changes in the production of one sector on the other

## The Drought and Commercial Agriculture

*The 1991/92 drought has had a severe impact on commercial agriculture in South Africa through reduced rain-fed crop yields, reduced availability of water for irrigation, the reduced capacity of rangelands to support grazing, and the lack of drinking water for livestock. The statistical indicators show that:*

- South Africa needs 6,5 million tons of maize per annum whereas the crop estimate for 1992 is 2,4 million tons, with only 1,4 million tons delivered to the Maize Board - import costs amount to approximately R2,2 billion.
- The wheat crop was 1,2 million tons which necessitated imports of 1 million tons at a cost of R550 million.
- The production of grain sorghum in 1991/92 was 95 000 tons whereas domestic consumption during 1990/91 totalled 283 000 tons.
- The production of sunflower seeds for 1991/92 is 173 000 tons as against 589 000 tons in 1990/91 and 559 000 tons in 1989/90.
- The wool-clip decreased from 101,7 million kg in 1990/91 to 77,75 million kg in 1991/92.
- The sugar crop dropped to 1,7 million tons from 2,3 million tons.

## Impact on Livestock

The impact of the drought on livestock numbers is partially hidden by the long-term herd cycle:

- Since reaching a low of 7,8 million in 1986, the cattle herd is expected to increase to 8,85 million this year as part of a trend likely to peak at 10 million in 1996.
- The 28,6 million sheep herd (1991) is expected to decrease to 28,5 million this year, and peak at 31 million in 1996.
- These averages, however, exclude the TBVC areas (Transkei, Bophuthatswana, Venda and Ciskei) and disguise the fact that certain areas experienced severe losses.
- Losses in certain of the rural areas was as high as 60%. This had a devastating effect on rural households that depend on their livestock for survival.
- Livestock are furthermore not only held as capital to generate economic growth in these areas, but also to satisfy a complex set of socio-cultural needs.

sectors of the economy can be calculated by means of sectoral multipliers. The agricultural multiplier has been calculated as 1,6, which means that for every R1 million of agricultural production, additional output amounting to R600 000 will be generated in all the other sectors together. This multiplier is calculated as an average for the country as a whole, but it may differ considerably for different regions, depending on the importance of agriculture in a particular region. It is thus possible that the multiplier could be larger

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in rural areas that are mainly dependent on agriculture.

In order to determine the effect of the drought on the main economic aggregates, a baseline simulation based on the assumption of a normal agricultural year is compared with an alternative simulation taking drought conditions into consideration. In the baseline simulation the gross value added by the agricultural sector is presumed to be determined by the long-term growth trend of 2,5 per cent per annum. Under normal conditions agricultural production meets most domestic requirements, which means that there is little need to import agricultural products.

The South African Reserve Bank gave a statistical account on the macro-economic effects of the drought (June 1992), through the simulation of a 14 per cent decrease in agricultural output on their macro-economic model.

*The possible effects of the drought in 1992 included:*

- the economic growth rate might have been 1,8 percentage points lower as a result of the drought;
- as many as 69 000 job opportunities might have become redundant;
- the inflation rate (measured by the consumer price index) could have been approximately 0,8 percentage points higher than it would have been during a normal rainfall year;
- the surplus on the current account of the balance of payments might have been R1,2 billion lower due to a rise in food imports and a decline in food exports; and
- the drought would have tightened the overall financial position of farmers, business enterprises associated with the farming industry and government.

## Individual Impacts

These macro-economic indicators give an indication of the impact of the drought on the whole economy. It does not, however, give an indication of how it actually affects individuals or communities. Some communities are more vulnerable to the impact of drought than others. The fact is that we are all influenced by the drought, in one way or another.

For instance, a decline in production in the agricultural sector does not only have a

direct impact on economic growth. Because it requires inputs, such as machinery and implements and chemicals, from other sectors and, in turn, provides inputs to other sectors, e.g. food processing, it also affects the economy in indirect ways. The estimated decline in farm income and associated decline in the profits of related industries would have had a negative effect on personal disposable income per capita in South Africa of approximately R70 (see multiplier effect above).

The lower personal disposable income per capita would inevitably lead to lower private consumption expenditure. Furthermore, the higher inflation rate as a result of the drought, especially increased food prices, would also have an adverse effect on private consumption expenditure. Between January and October 1992, the price of vegetables increased by an average of 31,5% and milk and fresh eggs by 17,5% compared to the figures for the same period in 1991.

It is thus clear that drought affects household food security very directly. On the supply side, South Africa was able to supplement its food supplies by imports, thus ensuring the availability of food. However, on the demand side, many households' food security, in both rural and urban areas, were threatened because of their decreased incomes and/or higher prices of food.

About 49 000 job opportunities would have been lost in the agricultural sector during 1992, apart from the 20 000 job losses in other sectors associated with agriculture. If the dependents of people losing their jobs in the agricultural sector are also taken into account, about 245 000 people would have been forced to find another livelihood or become dependent on the state for transfer payments.

Lastly, although it is difficult to determine the number of people who migrated to urban areas on account of the drought, it could have contributed to an increase in the rate of urbanisation over the short term. This would have exerted even more pressure on the already short supply of housing and urban infrastructure.

Apart from the Nutritional Development Programme for which R440 million was budgeted in 1992/93, the central government has also allocated an amount of about R4 billion to farmers for financial assistance. The opportunity cost of the latter amount is huge. In the absence of the

*The economic growth rate might have been 1,8 percentage points lower in 1992 as a result of the drought*

drought, the R4 billion could have been spent alternatively. Rough calculations indicate that for this amount 170 000 classrooms could have been built or about 533 000 serviced sites (at a cost of R7 500 per unit) could have been provided. This does not take into account the thousands of jobs that could have been generated by the provision of such infrastructure.

## Restructuring Agriculture

The commercial agricultural sector is undergoing a restructuring phase which is linked to the unsustainability of the current system in terms of economic, political, financial and ecological principles. It is clear that comparative advantages and market principles are playing an increasingly important role in the South African economy and specifically agriculture. This has already impacted heavily on the structure of agriculture and will continue to do so in the near future. These trends of rural restructuring will receive new impetus once a political settlement has been reached.

Deregulation and market liberalisation have had major effects on commercial agriculture: crop production has shifted eastwards to the higher rainfall areas; livestock production is taking place on marginal crop land; agriculture has intensified considerably in especially higher potential areas; and farm sizes seem to have decreased. Where commercial agriculture was extremely rigid at the beginning of the 1980s, this movement towards free market principles in agriculture has drastically increased the responsiveness of agriculture, especially in the grain sectors. This is adequately illustrated by the increase in elasticities of substitution between the major inputs such as labour, land, machinery and energy from 1980 to 1990.

The increased responsiveness and flexibility of agriculture to changes in prices of inputs and outputs will also impact positively on the sector's ability to both counter the negative effects of drought and revive itself after severe drought. This will decrease the adverse impact of drought on the economy and agriculture in particular.

It is clear that the drought has influenced all South Africans, not only those in the

agricultural sector. Its influence is felt in terms of *inter alia* job losses and lower incomes, higher prices, particularly for food, and foregone economic opportunities due to state expenditure that has to be allocated to ensure national and individual food security.

The impact of the 1992 drought is obviously severe and especially harmful to the producers of summer crops. Although the agricultural sector's contribution to the Gross Domestic Product has declined continually since the 1960s, it nevertheless still plays a very important role in South Africa's national economy, especially because of its interdependence with the other sectors.

The results obtained with the macro-econometric model of the Reserve Bank indicate that the average inflation rate could be approximately 0,8 percentage points higher as a result of lower agricultural production. Although most food prices probably increased at a faster rate because of the restricted supply of agricultural products, meat prices usually tend to rise at a slower rate and may even decline during periods of drought. Meat prices may, however, start affecting consumer prices at a later stage when grazing conditions improve again.

The direct negative effect of R2,1 billion on the current account balance as a result of the lower maize crop could be partly neutralised by a decline in imports because of the lower level of economic activity. This, together with the lower exports of agricultural products, could result in a net negative effect of approximately R1 200 million on the current account, which could be further affected by the adverse effect of the drought on agricultural products other than maize.

The drought will not only tighten the overall financial position of farmers, but also that of the government and other business enterprises associated with the farming industry. The Minister of Agriculture has already granted additional financial aid to farmers for the next three years. This demonstrates the fact that the drought not only has a once-off impact on the economy, but that its effect will still be felt in forthcoming years. IDPA

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