

Water for Agriculture in Zimbabwe

Policy and Management Options for the
Smallholder Sector



Edited by

Manuel Manzungu, Aidan Senzanje and Pieter van der Zaag

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PART IV

POLICY ASPECTS

Introduction

The chapters in this section raise a number of policy aspects. Matiza in Chapter 12 discusses the issue of drought and irrigation. Is it economic for government to give drought relief than invest in irrigation? The author argues that the money going to drought relief is better invested in irrigation. This is important, she notes, given that the climate of Zimbabwe is such that even in a normal season some areas have to receive drought relief.

Muir-Leresche looks at the economic issues facing any water reform endeavours. She argues that there is a need to take account of some fundamental economic principles. In Chapter 14 Matinenga discusses legal issues that are relevant for water reform. He notes that although the present Water Act has some shortcomings, it was in itself, not a bad legislation. For example there were a number of progressive provisions in the act, which unfortunately were not used by the local or national authorities to the advantage of disadvantaged groups. This is food for thought for the proposed reform; reforms by themselves may not amount to much if there is no credible operational plan and accompanying commitment to implement the reforms. In Chapter 15 Bolding *et al.* put forward what they call a realistic approach to water reform in Zimbabwe. According to them, reforms must address the main issues comprehensively and systematically. They draw on international literature to put forward some bold suggestions. Manzungu *et al.* in Chapter 16 explore the topic of integrated water resource management. They note that although the subject is popular, its conceptual underpinning is lacking. The authors put forward their own concept of integrated water management.

CHAPTER 12

Drought relief and irrigation¹

G. MATIZA

Agriculture is a dominant sector in Zimbabwe contributing 40% of exports, 50% of manufacturing and 70% of employment. The sector carries the heavy burden of food security. It is no wonder then that the performance of the Zimbabwean economy is directly related to the performance of the agricultural sector. This contribution is however compromised by the country's climate. Zimbabwe is situated in a zone of erratic rainfall with only 35% of the area receiving 700 mm annual rainfall that is adequate for intensive and semi-intensive farming. Rainfall is the main factor determining the suitability of land for agricultural production. Land suitable for intensive farming is situated in Natural Regions I and II, and to a lesser extent, in Natural Region III, regions which are endowed with good rainfall. Because of history, these well-endowed areas are mostly under the ownership of the White minority large scale farmers while the majority Black smallholder farmers are situated in the dry arid areas. Sixty percent of the smallholder farmers are situated in the semi-arid zones characterized by low agricultural production on account of the poor rains received there.

Natural calamities like droughts, as is true for the rest of Southern Africa, are no exception to Zimbabwe. Drought has been frequent in the last decade occurring in the 1980–81, 1983–85, 1987–88, 1990–91, 1991–92 and 1994–95 agricultural seasons. The drought of the 1991/92 season was the worst ever recorded. It is also during this period that the Zimbabwe economy contracted by 10%. Cereal production amounted to only 22% of the previous five year average. Agriculture's contribution to GDP fell to an all time low of 10%. That this figure did not drop lower was largely due to tobacco production, which it must be pointed out, received supplementary irrigation.

Significantly, supplementary irrigation, or irrigation in general, is mostly found in the large scale commercial areas and not in the smallholder farming sector. Combined with the fact that smallholders farm in semi-arid areas, it is no wonder that smallholder producers are much more prone to experiencing

¹ The figures cited in this chapter were obtained by the author from various unpublished sources when she was with the National Economic Planning Commission.

crop failure and high rate of livestock mortality than their large scale counterparts.

Irrigation data aptly illustrates this scenario. Out of the estimated 150 000 hectares of land developed for irrigation in Zimbabwe, 82% of the area is under large scale private farms and plantation estates. Virtually all sugar cane and wheat is irrigated, and 55% of tea, 70% of coffee, and 45% of cotton. Recently, emphasis has been on high value crops such as horticulture and tobacco. As of 1994, only 7% of the irrigable area had been developed for communal and resettlement farmers. The remaining 11% of irrigated area is managed by the parastatal, Agricultural Rural and Development Authority (ARDA).

There is no doubt irrigation is of crucial importance to agriculture and to the national economy at large. In this chapter attention is focused on the very important role irrigation plays in food security both at the household and national levels. Irrigation can drastically reduce the drought relief bill of government as it reduces costly food imports. Government expenditure on food dramatically increases in times of poor agricultural performance (because of drought) when the government has to implement a number of drought relief programmes to avoid widespread famine. Famine in poor seasons is widespread in the smallholder farming sector with the exception of two groups of farmers;

- a) farmers who have off-farm incomes (urban-rural transfers play an important role), and
- b) those that had access to water for secure farm production.

THE COST OF DROUGHT RELIEF

During the drought of 1991–1992, a total of 6.2 million people were registered as requiring food aid compared to 600 000 people in normal years. Some 750 000 children under the age of five required child supplementary feeding by July 1992. At the peak of the drought the number of children requiring drought relief reached 1.06 million. With only 362 000 Mt of maize produced (less than 20% of the average for the years 1988–1990), and an estimated monthly consumption of 200,000 Mt, Zimbabwe had to import 2.4 million Mt of maize to make up for the shortfall. In monetary terms these imports cost the government a total of Z\$2.8 billion with maize imports alone costing Z\$2.3 billion. For the grain imports the government used a total of US\$159 million or Z\$1 034 million from its own resources and received a total of US\$144 million or Z\$936 million from donor assistance in the form of grants, soft loans, commercial loans and outright grain donations. The use of internally generated resources strained the government. It was forced to divert funds from development programmes and to increase its borrowing. In addition to these food imports, substantial resources were spent in the transportation and distribution of food relief. Transport facilities were pooled from a wide range

of sources which included the public sector (Central Mechanical And Equipment Department — CMED, District Development Fund — DDF, Social Welfare, National Railways of Zimbabwe / Road Motor Services and Zimbabwe National Army), the private sector and NGOs.

The above chronicle is an indication of the cost of the drought relief programme (which is quite substantial). This cost could have been partially alleviated if adequate drought mitigation and preparedness measures had been in place. Harnessing of water through dam construction and subsequent application of water through irrigation for agricultural purposes is one such measure. Provided adequate care is taken, irrigation does contribute to the economic growth of the country. The benefits to the individual farmer are even higher with possibilities of doubling income under irrigation in comparison to dryland farming.

THE ROLE OF IRRIGATION IN REDUCING DROUGHT RELIEF COSTS

Irrigation not only ensures crop success (and reduces dependence on food hand-outs), it also increases the yields for most crops compared to dryland farming. A study of KFW-funded smallholder schemes in the driest Natural Regions IV and V clearly indicated this benefit. The performance of the six schemes showed that yields of irrigated grains were almost six times higher than yields of rainfed grains. The potential of irrigation to meet the food security objective, not only at the household level but also at national level, cannot be doubted. The possibilities of producing beyond subsistence levels in the rural areas increases with the introduction of irrigation, which in turn positively contributes to the income of rural households.

Research indicates that smallholder irrigation schemes can earn profits ranging from Z\$2 000/ha to over Z\$6 000/ha. Most households in these schemes prefer to cultivate food crops. In most schemes maize, groundnuts and beans are predominant summer crops, while horticultural crops are mainly grown in winter. Maize, as the staple food crop, is the dominant crop (grown on 45 to 100% of the area on all irrigation schemes, with the exception of ARDA-managed schemes where cotton is the dominant crop). Wheat is the most prevalent winter crop in ARDA schemes and for large scale commercial farmers. Very little winter wheat is grown on smallholder irrigation schemes. Agritex encourages the production of high value crops, especially horticulture to increase the profitability of smallholder schemes. Some schemes, for example in Manicaland, are noted for their tomato or bean production.

SUPPORT FOR THE SMALLHOLDER SECTOR

Irrigation development for the small- and large-scale farming sectors is able to meet both household food security and national food security needs. The

primary objective of irrigation on communal schemes is food security. However, for these schemes to be economically sustainable, they should produce beyond subsistence levels. As already stated this contributes to national food security. Experience has shown that this potential exists in the small scale and communal sectors. However, in order to maximise the performance of smallholder schemes, it is critical to enhance and reform the management of these schemes in general. Improved management through community participation and through transferring scheme ownership to irrigators, coupled with a more reliable provision of water, could significantly increase the efficient utilisation of resources. That is to say smallholder agriculture needs to be supported in many ways to bring it to the level of the large scale farming sector.

The issue of support to the smallholder sector should receive adequate attention. Today's impressive contribution of the large scale commercial sector (the large scale farmers produce virtually all the wheat, barley, sugar, and large proportions of cotton, coffee, tobacco and oil seeds) is a result of long term and massive support from the public sector both before and after independence. If support is available, the smallholder sector can make a positive contribution on many fronts. For example, smallholder farmers have substantially increased their maize production since independence albeit under dryland production, mainly because of improved marketing facilities and other services. Supporting smallholder agriculture appears to be a viable long term strategy that the government is advised to continue in more tangible ways in the light of the Economic Structural Adjustment Programme (started in 1990) where cost cutting measures have tended to reverse the gains the smallholder sector had made since independence in 1980.

From the food security perspective, support to the smallholder sector is strategic since government's policy towards the liberalisation of the agricultural markets has resulted in the large scale commercial sector largely moving out of maize production, in favour of high value horticultural crops for export. Horticultural production has grown considerably over the last few years in the commercial sector. The value of horticultural crops grew from Z\$3.5 million in 1985/86 to Z\$48 million in 1993/94. The major growth has been recorded in cut flowers. The food security void left by the large scale sector has been filled by the smallholder farming sector which has increased considerably its maize production since independence in response to improved supportive measures in marketing and extension. Communal area farmers' share of maize production has increased to 70% since independence. While production may be adequate in good rainfall seasons, it is very vulnerable to unreliable rainfall patterns. Thus, to ensure food security of Zimbabwe's main staple crop, irrigation development for the smallholder sector is crucial.

CONCLUSION

From an economic point of view there is a case for investing in irrigation development, rather than in drought relief. Drought relief is a consumptive expenditure and is very costly. A comparison of the cost requirements of drought relief and irrigation development indicates that in the long term investment in irrigation is economically more cost effective and implies a more efficient utilisation of resources. Moreover, irrigation offers more opportunities for the development of local communities, as there are a lot of backward and forward linkages realized through investment in irrigation. In contrast, drought relief undermines the resourcefulness of the community and does not promote any growth. It may actually promote or encourage a dependency syndrome.

From a financial point of view, drought relief programmes call for more resource input even in normal rainfall years. In a normal year it is assumed that at least 660,000 families require drought relief at a cost to the government of approximately Z\$71 million. The total drought relief programme including child supplementary feeding, transport, and administration is not anything less than Z\$150 million per year. In comparison, the following resources would be required for irrigation development: assuming that 600 000 families require 79,200 tonnes of grain per year, and assuming yields for irrigated maize of 6t/ha, one would have to develop irrigation facilities on 13 200 ha. At an estimated cost of development of \$70 000/ha (including dam construction), the investment requirements would therefore amount to about Z\$924 million. This investment is equivalent to the cost of drought relief over a period of six to seven years.

While there is a lot of economic sense in pushing for irrigation development, infrastructural development is only a partial solution. Technical and financial support services should be in place. This is because production in the smallholder sector is severely constrained by technical, financial, marketing and managerial factors. Also, the unreliability of water supplies has affected a great deal the performance of smallholder irrigation schemes. If these constraining factors are not resolved, the objective of food security will be severely compromised. For example the pace of development in this sector is very slow. The average annual increase of the area under smallholder irrigation is less than 1,000 ha. This is mainly because Agritex has a capacity constraint in human and financial terms. This therefore limits the number of beneficiaries to about 2 000 per year. A time span of 25–30 years seems adequate for the development of the existing irrigation potential.

Apart from the challenges facing the design and construction of schemes, management challenges are also real, as already noted. Management capacities of smallholder farmers need to be strengthened. However, sustainable smallholder irrigation development does not depend on models being imposed on farmers. Credible farmer participation is the key.



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