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THE EVOLUTION OF IRRIGATION POLICY IN ZIMBABWE; 1900 - 1986 *

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When Zimbabwe attained Independence in 1980, it inherited a dual irrigation structure. The larger sub-sector is composed of commercial, large scale production based on producing cotton, wheat, tobacco and soyabean, to mention the important ones. The smaller sub-sector is composed of small-holder schemes, scattered over the Communal Areas of Zimbabwe, where the majority of small farmers live. These schemes are largely based on food crops for home consumption as well as vegetable production for 'local' and urban markets.

The devastating drought of 1981 - 1984 has re-focussed the government's policy of reducing dependency on rainfed agriculture where this is feasible. One of the key issues is the role of small-holder irrigation in this regard, and how small-holders could reduce dependency on government, as far as developing and running the schemes is concerned. Problems related to achieving this overall objective stem from historical process and evolution of the schemes.

This paper traces the historical process of government intervention in irrigation development since the beginning of the Twentieth Century to date. This process was accompanied by dynamic and ever changing nature of multiple policy objectives.

We will examine how farmers closely identified with earlier developments and how government intervention starting in the 1930's reversed this process over a long period. So while current government policy emphasizes farmer participation and management of small holder irrigation schemes, there are obstacles in the way, emanating from the past, that are in the way of achieving the
The period 1912 to 1927, has been described as the period of 'incorporation into indigenous agriculture' (Roder, 1965). The Manicaland Province schemes were the first to be developed and they dominate the history of small-holder irrigation up to the end of the Second World War.

White settlers had started irrigating crops by the beginning of the century in the Manicaland area of Eastern Zimbabwe. In 1908, Mutambara Mission was opened up by missionaries and an irrigation furrow was dug by the missionaries. Subsequent involvement by local peasant farmers can be summed up from the following quotation:

"African irrigation at Mutambara had its beginnings in 1912. This was a year of severe famine .... The people near Mutambara Mission took inspiration and encouragement from the example before them and built new ditches to irrigate new gardens. The missionary aided their efforts by supplying wheat seed and sweet potato vines." Roder (1965).

Famine is given as the first major reason why peasant farmers engaged in irrigation in Manicaland Province. As a result, farmers were active participants in the construction and running of their irrigation schemes.

The first active involvement by government in irrigation development is linked to Emery Alvord's appointment as 'Agriculturalist for the Instruction of Natives' in 1927. Alvord shaped the development of irrigation in Manicaland starting in 1932 until he was appointed Director of the Department of Native Agriculture in 1951. In his new capacity, Alvord became responsible for irrigation development in black areas (now Communal Areas) in the whole country.

When Alvord became actively involved in irrigation development, he was interested in aiding existing projects where local farmers had a significant
measure of control, (Roder, 1965). Farmers developed small irrigated plots of about 1 hectare or less in size, but they continued to rely heavily on rainfed farming. The main justification for this government aid was famine relief. For a number of decades, Alvord reported that irrigation was a success in famine relief although this was difficult to substantiate. The important point is that the government did not interfere with the farmers' use of irrigated land.

In 1933, however, this liberal policy began to fade when the government took over the management of the Mutambara project in Manicaland from local farmers. A number of other schemes in Manicaland were also re-organised on authoritarian lines. A water rent of five shillings per acre was imposed in 1932 and subsequently doubled to ten shillings per acre in 1942 (Hughes, 1974). Restrictions were introduced to stop rainfed cultivation by farmers. The government agriculturalists started introducing compulsory crop rotations but these measures were unpopular with the farmers.

Before government intervention in the 1930s, irrigation schemes were built by the communal efforts of local people. The government justified their increased control over the schemes by the fact that they were committing more funds and resources into the irrigation schemes. Since the government had taken over the task of constructing schemes, less consultation and co-operation of local farmers was sought in the development process.

After the Second World War, there was a government drive to expand Manicaland irrigation schemes in order to settle peasant farmers from designated white areas to African Reserves (Reservations). The Land Appropriation Act of 1930 demarcated the country into black and white areas. This Act was amended in
1950 to force black farmers to move to designated areas within a five year period. A number of new irrigation projects were conceived as a means of absorbing the displaced and expanding black population. For example, the Director of Irrigation in Southern Rhodesia reported that:

"... to accommodate the growing native population every available acre will have to be put to maximum use. There are extensive dry areas particularly in the Southern and South-Western parts of the Colony where the only means of bringing land to proper use will be by large scale gravity, or where gravity is not possible, by large scale pumping. These schemes will be very costly, and by ordinary standards, uneconomic, but it may well be found that any other solution to the population problem will be still less economic and far more undesirable. (Annual Report, Department of Irrigation, 1950)

The political expediency of settling black farmers following the amended Land Apportionment Act of 1950 led to the establishment of a number of new schemes that did not meet standard social and economic criteria. This also led to expansion of projects and development of new projects into sandy soils, and the introduction of pumping projects which were more costly to operate than gravity schemes.

The reduced popularity of schemes, combined with rising construction, operation and maintenance costs led to the Department of Native Agriculture reviewing its irrigation development programme. In 1957, the Department employed an economist for the first time to look at profitability of small-holder irrigation schemes. The economist came to the conclusion that the small-holder schemes were all uneconomic (Hunt, 1958). An Irrigation Policy Committee was set up in 1960 to examine the strategy of using irrigation as means of settling black farmers. The recommendations of this Committee were as follows:

(a) Irrigation was not the best way of settling displaced farmers. The
population pressure in black areas was temporary and would slacken as more found employment on white farms.

(b) It would be more productive for government to invest in the industrial sector than irrigation.

(c) Future projects should be based on voluntary agreement where settlers will be able to meet the costs of construction, operation and maintenance. (Irrigation Policy Committee, 1961).

As a result of these deliberations on the irrigation policy, construction of irrigation projects was stopped during most of the 1960 to 1968 period.

After the Unilateral Declaration of Independence (UDI), by the Smith government in 1965, there was a new commitment to developing irrigation projects in Communal Lands (then Tribal Trust Lands) as part of the new philosophy of developing rural growth points in black areas to facilitate separate development from white areas. The government set up a parastatal, the Tribal Trustlands Development Corporation (TILCOR) to develop growth points in what are now known as Communal Lands, where small-holder farmers are concentrated.

The growth points based on irrigation were designed to have a large 'core estate' to provide services to settlers. The core estate operates like a large scale commercial farm, heavily mechanized and using high levels of inputs. The existence of a core-estate and the settlers would therefore justify further investment into other commercial and industrial ventures. Other social services like markets, schools, clinics and postal services were also incorporated. In summary, the government's political commitment to developing black areas separately from white areas justified investment into irrigation based growth points.
After the Independence of Zimbabwe in 1980, moves were made to merge TILCOR and Sabi Limpopo Authority (SLA) into the Agricultural and Rural Development Authority (ARDA). Until 1981, the Sabi Limpopo Authority was responsible for the development of large scale commercial and white settler irrigation in the Sabi-Limpopo catchment area. The government of Zimbabwe has indicated that irrigation will play an important role in transforming the rural sector in the Communal Lands. Government has broader plans in establishing growth points and rural service centres, some of which are, or will be based on irrigation.

As a result of the 1981 to 1984 drought, government decided to encourage irrigation and has set up a fund, the National Farm Irrigation Fund (NFIF, 1985) for this purpose. A total of 12 million of the 18 million dollars is earmarked for large scale farmers to produce wheat, tobacco and other cereals. 6 million dollars has been earmarked for small-holder schemes in Communal Lands. Government policy has explicitly and implicitly encouraged small-holder farmer involvement in these new efforts. However, substantial problems still exist in trying to implement new schemes in Communal Areas. Before discussing these, the current scope of small-holder irrigation development will be reviewed.

SMALL-HOLDER IRRIGATION DEVELOPMENT IN ZIMBABWE.

Zimbabwe has an estimated 151,000 hectares of land under irrigation as shown in Table 3. Approximately 62 per cent of this area is farmed by large-scale commercial farmers who collectively farmed approximately 93,000 hectares of irrigated land in 1985. About 16,000 hectares of irrigated land are farmed by 6,000 families on 81 schemes in Communal Lands. There are, in total, 72 government supported schemes totalling 4,269 hectares farmed by 5,825 families (Table 4). These are under the Department of Agricultural Technical
and Extension Services (AGRTTEX) in the Ministry of Lands, Agriculture and Rural Resettlement. ARDA has nine schemes totalling 5,320 hectares of which 761 hectares are farmed by 529 settler farm families. The rest of the 4,559 hectares are ARDA 'core estates' operated on a state farm basis.

**TABLE 3: ZIMBABWE: AREA UNDER IRRIGATION BY TYPE OF FARMERS, 1984.**

<table>
<thead>
<tr>
<th>Type of Farmer</th>
<th>Hectares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial farms</td>
<td>93,000</td>
</tr>
<tr>
<td>Company estates</td>
<td>30,000</td>
</tr>
<tr>
<td>Commercial settler</td>
<td>11,500</td>
</tr>
<tr>
<td>ARDA estates and settlers</td>
<td>11,000</td>
</tr>
<tr>
<td>Communal Lands : Schemes</td>
<td>4,400</td>
</tr>
<tr>
<td>Communal Lands : Private</td>
<td>700</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>151,000</strong></td>
</tr>
</tbody>
</table>


**TABLE 4: ZIMBABWE: AGRITEX IRRIGATION SCHEMES IN COMMUNAL LANDS, 1983.**

<table>
<thead>
<tr>
<th>Province</th>
<th>Number of Schemes</th>
<th>Area (ha)</th>
<th>Number of Plot Holders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manicaland</td>
<td>11</td>
<td>2,189</td>
<td>2,149</td>
</tr>
<tr>
<td>Matebeleland South</td>
<td>18</td>
<td>1,161</td>
<td>1,173</td>
</tr>
<tr>
<td>Mashonaland West</td>
<td>1</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Mashonaland Central</td>
<td>5</td>
<td>48</td>
<td>-</td>
</tr>
<tr>
<td>Matebeleland North</td>
<td>8</td>
<td>79</td>
<td>220</td>
</tr>
<tr>
<td>Masvingo Province</td>
<td>15</td>
<td>418</td>
<td>1,062</td>
</tr>
<tr>
<td>Midlands</td>
<td>14</td>
<td>369</td>
<td>1,205</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>72</strong></td>
<td><strong>4,269</strong></td>
<td><strong>5,825</strong></td>
</tr>
</tbody>
</table>

Source: Derived from DERUDE (1983)
In 1985, AGRITEX, the national agricultural extension service took over the management of all small-holder irrigation schemes in Communal Areas (Table 2). Meanwhile, ARDA schemes hold a few small-holders. As is the case with AGRITEX schemes, policy objectives stress the need to increase economic viability and involvement of small-holders in management. ARDA schemes are however organised on different lines from AGRITEX schemes. A typical ARDA scheme is split between a large 'core-estate' (state farm) and a small settler section. The 'core-estate' is farmed as a large unit by an ARDA management team. A Settlement Officer is member of the ARDA management team, responsible for small-holder settlers. The objective is for the 'core-estate' to provide land preparation, water supplies, credit and other services to the settlers. The ARDA team, through the Settlement Officer, provides the extension service. ARDA controls the settler accounts and recovers credit through a stop order system on commodities sold by the settlers. This has caused problems of farmers getting paid late in some cases. This system of production and management also make it more difficult to involve farmers effectively in decision making. The involvement of farmers in management has therefore become an important policy issue.

Since independence in 1980, Irrigation Management Committees (IMC) have emerged as a type of "water users' association". On both AGRITEX and ARDA irrigation schemes, the committee members are elected by the plot-holders. The main role of these committees is to liaise and assist in the management of the irrigation schemes. It is a government policy objective that farmers ultimately will take over the management and maintenance of irrigation schemes. All present schemes are heavily subsidized by government. The IMCs are viewed as
a starting point of a process whereby these subsidies can be steadily eliminated in a fashion equitable to the farmers. The development of this policy is an issue that needs to be given more policy and planning guidance. Existing AGRITEX schemes have IMCs which function closely with the AGRITEX staff on the same aspects of management and farmer discipline, though AGRITEX has the ultimate responsibility for the functions, and subsidizes operation and maintenance costs.

OBSTACLES TO SMALL-HOLDER PARTICIPATION IN NEW IRRIGATION SCHEMES.

The government subsidizes about 89% of the operation and maintenance costs of all AGRITEX small-holder schemes and does not recover any of the capital costs, (Rukuni, 1984b) This level of subsidy is justified on the grounds that most of these schemes in Communal Lands are financially unattractive yet socially desirable for household food security purposes. Present plans are for farmers to increase their contribution towards operation and maintenance to about 25% through water charges.

The government is committed to the continued development of existing and new schemes. The existing schemes are developed to about 20% of their potential area (DERUDE, 1983). New schemes are being identified. The government strategy is to give priority to rehabilitation of existing schemes and expand those with potential before construction of new schemes. Policy is to encourage small irrigation schemes which are constructed and run by local communities. However little investment in small-holder irrigation has taken place since 1980. With policy placing more importance on financial viability, most potential schemes fail to meet the criteria for funding.
The National Farm Irrigation Fund has earmarked approximately 6 out of the 18 million dollars (Zimbabwe) for funding small-holder schemes where these are appraised as financially viable. However, because of the traditional communal land tenure system operating in these areas, farmers can only borrow funds as a group for developing in-field works.

Group borrowing is necessary as a means of borrowing security and also, equally important, to ensure that a cohesive group of irrigators is formed. The group is then expected to take over most of government's present activities on existing schemes, including management, and paying for water, operation and maintenance. Under these conditions, which are significantly different to those on existing schemes, none of the 6 million dollars has been borrowed by small-holders from the National Farm Irrigation Fund and other similar sources of funds.

The basic contradiction seems to be that, whilst most of the existing schemes were developed for famine relief and other political reasons which ignored financial viability, the same schemes, when appraised by new criteria for financial viability, prove sub-economic. Farmers on existing schemes have found it attractive to continue paying the modest operation and maintenance costs. This seems to be the precedent negating more active farmer involvement in new schemes especially as it means they end up paying for capital costs, operation and maintenance.

This is the present policy dilemma in the development of small-holder irrigation in Zimbabwe. No short-term solutions are obvious. An intensive process of policy development, new schemes identification and action oriented research is required to complete the long lesson, to get farmers into cohesive groups.
willing to invest funds and labour into schemes they will run themselves, thereby relieving the government of the burden of subsidizing costs of capital, operation and maintenance.

**SUMMARY**

Irrigation history in Zimbabwe dates back only to the beginning of the 20th Century. Whilst the bulk of irrigation is under large scale commercial agriculture, it is the small-holder irrigation sub-sector that faces problems with more challenging policy questions. This paper shows that the process of getting small-holder irrigators to fully participate in capital financing, operation and maintenance of irrigation schemes has suffered set-backs in the Zimbabwean experience. This has become a long costly lesson which has taken the order of 80 years to date and not yet completed.

Small-holder farmers fully participated in early schemes developed for famine relief. Government intervention in the early 1930s brought more restrictive use of irrigation by farmers in an attempt to achieve economic viability. Government has since borne the burden of subsidizing capital, operation and maintenance costs. Present attempts to organise farmers for purposes of borrowing funds for irrigation and reducing government assistance have not yet materialized. It is now government policy for small-holder farmers to fully participate in financing and management, but the long lesson has not been completed yet. It will probably take Zimbabwe into the next century to go the full circle; i.e. farmers' initial full participation, to alienation, and back to full participation again.

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