

Annual Report 'In the shadows of a conflict' programme, Mozambique, 2007-2008

Dr. Alex Bolding, principal researcher, December 2008

TABLE OF CONTENTS

1	RESEARCH OBJECTIVES	2
2	RESEARCH SITES, BACKGROUND, AND METHODS	2
3	RESEARCH STAFF	4
4	RESEARCH OUTPUT IN 2007 & 2008.....	5
	4.1 Thesis work by students.....	5
	4.2 Conference and seminar papers.....	6
	4.3 Presentation of study results to policy makers, local communities and international research networks	6
5	A LOOK AHEAD	6
	ANNEX 1: ABSTRACTS OF SELECTED RESEARCH OUTPUTS.....	8



1 RESEARCH OBJECTIVES

The research objectives for my part of the overall research programme¹ are limited spatially, temporally and in terms of kind of migrants from Zimbabwe. At the Lusaka planning workshop (7-8 June 2007) it was agreed in principle to limit the spatial focus in Mozambique on Manica Province, particularly the border zone. In terms of time horizon, it was agreed to study effects precipitated by changes in Zimbabwe since the year 2000. This does not preclude data collection on events that have taken place before 2000, but it does define the frame and historical context. The research should be about what is specific about migration since the year 2000 in comparison with previous patterns/practices. Lastly, my part of the research focuses mainly on smallholders, former farm and estate labourers that were based in Zimbabwe but of different nationalities (predominantly Mozambican, but also Zimbabwean and Malawian), and other types of recent migrants seeking a livelihood in Mozambique (e.g. gold panners, seasonal labourers, hawkers, traders, money changers). Amanda Hammar will focus on the large scale commercial farmers, their work force and other white Zimbabweans that have ended up in the agro-industry and mining sector in Manica Province, as well as new inhabitants of Chimoio city. Randi Kaarhus has a specific focus on agrarian and land debates and policies, both in Maputo and Manica Province, and intends to select several or one case study concerning a community land delimitation.

My research objectives tie in with the following overall objectives:

1. To record and analyse the narratives of migrant farmers and farm workers in order to understand how they view the events that led them to leave Zimbabwe and why they chose their particular destinations. This objective includes new considerations of how they view themselves in terms of citizenship and levels of identity.
2. To assess how they entered their new communities, how they established themselves, and how they have been treated and regarded by their new hosts at various levels including national, regional and local ones.
3. To assess changes in patterns of use and ownership from a gender perspective.
4. To determine and analyse impacts of the migration on recipient communities with respect to agricultural production, labour markets, access to land, and community conflicts.

The final two objectives (5 & 6) of the overall programme do not pertain to my research effort, but to that of Amanda and Randi.

2 RESEARCH SITES, BACKGROUND, AND METHODS

Basically, three field research sites have been selected, two rural sites directly located on the Mozambican end of the mountainous border zone with Zimbabwe, and one urban setting:

- Pandagoma in Phanze, Messambize river valley, Bárúè district
- Penhalonga & Msambuzi in Machipanda, upper Revue river, Manica district
- Chimoio city.

¹ The full name of the Norwegian funded research programme is: 'In the shadow of a conflict: Impacts of Zimbabwe's Land Reform on rural poverty and development in Mozambique, South Africa and Zambia'. In this annual report which covers the period July 2007-December 2008, only the research effort hosted by the Universidade Católica de Moçambique in Beira, will be treated.

The two rural research sites contrast in terms of population density, proximity to urban markets, history of settlement and intensity of conflicts on leadership, access to land and access to forest resources. Yet both sites have witnessed a steady influx of people from Zimbabwe, mostly returning Mozambican labour migrants with previous experiences in irrigated agriculture and the production of commercial crops (tea, coffee, tobacco) at invaded white commercial farms and tea plantations in Zimbabwe. Amongst these former farm labourers are people of other nationalities as well (Malawian, Zimbabwean). In addition to these new settlers who open up new irrigation furrows and dry land (often on steep mountain sides, investing in bench terraces), there is an increasing flood of destitute Zimbabweans arriving illegally on a daily basis, as Zimbabwe's economic and political crisis deepens. The majority of these daily immigrants are hawkers, selling anything they can carry (from food to complete bedsets) in exchange for meticaais. They also offer their labour for agricultural activities or gold digging, often in exchange for a meal or some mealies and sugarcane. In Vila de Manica, there is a veritable flood of hawkers selling their commodities on overcrowded roadside markets, young girls engaging in sex work, and young men plying the main road to Zimbabwe as money changers.

Whereas Pandagoma shares all the characteristics of a frontier area, with pioneer settlement starting only in 1969, the Penhalonga area is characterised by a long history of settlement and exchange with Zimbabwe. In Pandagoma, returning Mozambican labour migrants have been at the forefront of opening up new (irrigated) land, in three subsequent waves of settlement of increasing magnitude: (a) around Independence (1969-1978); (b) after the 1992 Peace deal between Frelimo and Renamo (1994-1998); and (c) since the outbreak of the Zimbabwe crisis (2001-now). Some of the new settlers have taken up commercial production of crops like tea, coffee, tobacco and paprika. Whilst there is still plenty of unexplored forest land and a great potential for taking out more irrigation furrows, agricultural production in the area has been negatively affected by the Zimbabwe crisis. The collapse of the Zimbabwe dollar and agro-industry across the border has robbed the Pandagoma community of easy input supply and product markets. Yet, the community of Pandagoma is far removed from the weakly developed agro-industry in Chimoio, with bad access roads, no access to credit and high transport costs.

In contrast, the Penhalonga and Msambuzi area in Manica district is characterised by a high population density, heavy pressure on natural resources, proximity to urban markets, and an age-old exchange of people between Mozambique and Zimbabwe. The latter sea-saw dynamic of population movement has been instigated by various drivers such as restrictive conservationist land use policies in Zimbabwe (1940s & 1950s), forced labour policies in Mozambique (1950s & 1960s), droughts, and wars. Many families who reside in Penhalonga or Msambuzi have relatives who stay in Zimbabwe and vice versa. Chief Nhacuanicua, traditional ruler of the Penhalonga area, resorts under the paramount Chief Mutasa, who resides in Zimbabwe. During the Frelimo-Renamo civil war many internally displaced people and refugees flocked to the relatively safe Beira corridor, which included the Msambuzi and Penhalonga valleys. A study that was undertaken in 1991 by GTZ, towards the end of the war, found that population pressures were extremely high in the upper Revue and Msambuzi valleys. Both valleys harboured some 169 irrigation furrows commanding some 410 hectares of irrigated land, used by 806 farming households. Since then population densities have further increased, despite serious limitations in available land, due to the prevalence of the IFLOMA forestry estate and foreign investors

developing commercial farm land. Preliminary findings from a re-study of the 1991 GTZ study reveal that despite the existing pressure on land and water resources, many more irrigation furrows have been opened up in Penhalonga. Also many young households are opening up land on steep hillsides, using bench terraces. Since the outbreak of the Zimbabwe crisis, gold panning has taken a tremendous flight in the area, negatively affecting fish ponds supplied by irrigation furrows and silting up canals.

This study aims to undertake a number of research activities, in order to acquire the necessary information associated with the above mentioned 4 objectives:

- On the basis of the detailed GTZ study undertaken in 1991, a re-study is done covering all members of irrigation furrows in Penhalonga and Msambuzi valleys. In this way a unique picture of the dynamics of irrigated agriculture can be obtained, including background information on the origins, settlement patterns, and life histories of its members. A similar survey has already been undertaken in Pandagoma;
- All irrigation furrows and irrigated plots, on both research sites, will be mapped by means of a GPS. Later, the mapping exercise will be expanded to include all forms of land use (dry land, wetland, forestry, range land). Thus a rich picture emerges of who has got access to land and other natural resources;
- Targeted qualitative research (life histories, migrant narratives) will be undertaken focused on particular groups of immigrants from Zimbabwe (e.g. day labourers, gold panners, hawkers, money exchangers).

To contextualize the results from the furrow irrigation studies in Manica Province and the effects produced by the Zimbabwe crisis, a 'control' area has been selected in Tsangano district, Tete Province, in the mountainous border zone between Mozambique and Malawi. A separate study on furrow irrigation in Tsangano district, that is unaffected by the Zimbabwe crisis, will bear out the specificity of observations made in Manica and Bárue districts.

Finally, in Chimoio city the focus of the research efforts will lie on the provision of drinking water in a number of townships (bairros). The aim here is to establish how different groups of drinking water users (including temporary dwellers) acquire access to this vital resource.

3 RESEARCH STAFF

The possibilities for hiring capable Mozambican staff are limited, since almost none are qualified to undertake the kind of qualitative field work required by the programme. Below I list a number of people who were or will at some stage get involved in the research.

- Rodrigues Lino Piloto (82-5758526), fixed research coordinator, running an office with computer at his residence in Chimoio.
- Ana Rita Boane (82-5926200), resident in Chimoio, with work experience as survey taker for DPADR and the National Census, available for work with Randi Kaarhus
- UCM BSc(hon) thesis students from Cuamba (agriculture), Beira and Chimoio (economics)
- MSc students from Wageningen University (WUR- irrigation and/or rural development sociology)
- Internship students from the Instituto Agrário de Chimoio.

Since its start in July 2007, the programme has facilitated student research by 2 Mozambican Licenciatura (BSc-honours) students from the UCM in Cuamba, and 3 MSc students enrolled in the Masters Programme on International Land and Water Management of Wageningen University (2 Dutch students, 1 Malawian student). Of the former, two students will complete their studies in 2009. It is envisaged that two Mozambican Mestrado (MSc) students from the UCM in Beira, enrolled in the newly started MSc programme on 'Planeamento e Desenvolvimento Regional com Enfoque nos Distritos' (District Planning and Regional Development), will undertake their thesis work in 2009, facilitated by the 'In the shadows' programme. Another two internship students from the IAC will also undertake research work in Manica in 2009.

In addition to the student research, field work has been undertaken by both the principal researcher, Dr Alex Bolding, and the Chimoio-based research coordinator, Rodriguez Piloto. Field research was undertaken by Alex Bolding in June 2007, April-May 2008 and September 2008. The research coordinator, Mr Piloto, has been continuously accompanying students and visiting researchers in the field to assist with introductions, interviews and GPS measurements.

4 RESEARCH OUTPUT IN 2007 & 2008

The research output so far consists of academic theses, conference and seminar papers, and study reports disseminated amongst policy makers, researchers and practitioners in Mozambique and beyond.

4.1 Thesis work by students

By December 2008, three students had completed their thesis work, whilst another two are in various stages of implementation of their research project, aiming to complete in 2009. The list below highlights the research topics addressed by these two Mozambican, two Dutch and one Malawian student. Four more students (all Mozambican) are expected to start research work in 2009.

BSc(hon.) theses, defended at the Faculty of Agriculture of the UCM, in Cuamba:

Silota, G. de J.L., 2007, 'Práticas do uso da terra e da água e a necessidade de reabilitação dos sistemas e esquema de irrigação dos produtores de pequena escala no distrito de Báruè', BSc(hon) thesis, Universidade Católica de Moçambique, Faculdade de Agricultura, Cuamba.

Nhamaleze, Cristóvão, E.Q., 2008, 'Estudo do desenvolvimento dos sistemas de irrigação de pequena escala utilizados pelo sector familiar no posto administrativo de Machipanda distrito de Manica', BSc(hon) thesis, Universidade Católica de Moçambique, Faculdade de Agricultura, Cuamba.

MSc theses, Irrigation and Water Engineering Group, Wageningen University:

Schippers, Jilles, 2008, 'Making the water(net) work. Towards an understanding of water management practices in farmer-managed irrigation in Manica District, Mozambique', MSc thesis, Irrigation and Water Engineering Group, Wageningen University, Wageningen, Netherlands.

Bruijne, Judith de, 2009, 'Water sources, water uses and water provision arrangements in two townships in Chimoio, Mozambique', MSc thesis, Irrigation and Water Engineering Group, Wageningen University, Netherlands.

Nkoka, Francis, 2009, 'Building or destroying? The impact of external intervention on farmer managed irrigation system's performance in Tsangano, Mozambique', MSc thesis, Irrigation and Water Engineering Group, Wageningen University, Wageningen, Netherlands.

4.2 Conference and seminar papers

So far two conference/seminar papers have been presented. These will in due time be published in internationally refereed journals (for abstracts of these papers, see annex).

Bolding, A., 2007, 'The dynamics of smallholder irrigation furrows along the Mozambique-Zimbabwe border: a resilient force of agrarian modernisation or a last resort for marginal communities?', paper presented at the AEGIS conference, panel 37, 'The political economies of displacement in Southern Africa', Leiden, 11-14 July (to be submitted for publication in *Journal of Southern African Studies*)

Bolding, A., 2008, 'Going for (liquid) Gold. The differentiated impact of the Zimbabwe crisis on gold panning and furrow irrigation in central Mozambique', paper presented at a CERES-IWE research seminar entitled 'Good news from Zimbabwe? Promising initiatives emerging from the crisis', 12 November 2008, Wageningen.

4.3 Presentation of study results to policy makers, local communities and international research networks

Various opportunities have been used to disseminate results from the different studies undertaken amongst policy makers, local communities and an international researcher network (the CGIAR challenge programme).

Report presented to NGO Kwaedza Simukai, Manica, Mozambique:

Schippers, J., 2008, 'Water management for irrigation in the area of Penhalonga, Mozambique: observations and recommendations', Internship report, Wageningen University.

Report presented to EU Review mission (reviewing 10 years of expenditure on irrigation in Mozambique, 1998-2008):

Bolding, A., 2008, 'Extent and dynamics of smallholder furrow irrigation along the Mozambique-Zimbabwe border: former Zimbabwe farm workers investing into irrigation and gold panning', report presented to EU Irrigation Expenditure Review Mission, Chimoio, 16 September 2008.

Report presented to Challenge Programme 66 'Water rights in informal economies':

Post Uiterweer, N.C., 2008, 'Mukudu, Maira and Penha Longa furrows – a case study in the Revue river', Challenge Program Project 66 Water rights in informal economies in the Limpopo and Volta Basins, First full draft, December 2008.

5 A LOOK AHEAD

Despite difficulties in identifying qualified Mozambican students to undertake relevant research work under the auspices of the programme, quite some ground has been covered. The prospect for more Mozambican involvement in 2009 is bright, with the new start of a Masters programme in District Planning and Regional Development at the UCM in Beira. The change of guard at the GIS group of the UCM, where Ludger Kaup gave way to Dominic Kwesha as new director, has resulted in an even more efficient and speedy administration of the programme. I would like to thank the rector, vice rector Padre Ponsi, director of CIG-UCM, Dominic Kwesha, and his team of lecturers for their unwavering commitment to the programme. Equally, I would like to pay my debts to Rodriguez Piloto, who despite considerable odds, has proven to be a steady and much-appreciated companion in executing and facilitating the research at field level.

The deepening crisis in Zimbabwe has, ironically, made the overall theme of the research programme progressively more relevant and, to some extent, urgent. The entry point for research

has maintained a strong focus on water (both for irrigation and domestic use as well as for washing gold) and seems to be paying off by generating insights in livelihood options for both destitute refugees from Zimbabwe as well as returning Mozambican labour migrants from the collapsing commercial farming and estate sector in Zimbabwe. It is suggested to maintain this focus on water, whilst progressively paying more attention to the livelihood effects generated or denied to different groups of water users.

I'm confident that 2009 will prove to be another year of fruitful research and engagement with ongoing debates on poverty and rural development.

ANNEX 1: ABSTRACTS OF SELECTED RESEARCH OUTPUTS

Bolding, A., 2007, 'The dynamics of smallholder irrigation furrows along the Mozambique-Zimbabwe border: a resilient force of agrarian modernisation or a last resort for marginal communities?', paper presented at the AEGIS conference, panel 37, 'The political economies of displacement in Southern Africa', Leiden, 11-14 July (to be submitted for publication in *Journal of Southern African Studies*)

In the course of the past century a dynamic indigenous furrow irrigation culture has emerged in the mountainous border region of eastern Zimbabwe and west-central Mozambique, inhabited by Shona speaking people. Its importance and existence has hitherto remained virtually unknown, despite the key role attributed to irrigation in the commercialisation of agrarian production, provision of food security, and poverty eradication. This paper demonstrates its importance in terms of irrigated area (10% of all irrigated land in both countries), contribution to food security and increased commercial production, and capacity to provide displaced people with a livelihood.

Studies of the ancient terracing and irrigation cultures of the Nyanga Highlands (Zimbabwe) and Engaruka (Tanzania) suggest that furrow irrigation was not primed on the need for intensified agricultural production (Sutton 1984). Rather the Nyanga terrace people are seen as 'losers' who turned to irrigation to survive the harsh environment they found themselves in, whilst Engaruka became the victim of its own success (conceptualised as 'over-specialisation'). The main question addressed in this paper is whether the spread and decline of furrow irrigation based informal economies represents a drive towards agrarian modernisation or a last resort for survival of displaced smallholders, war refugees, and expelled migrant farm workers.

The paper seeks to first identify the origins and geographical spread of these furrows: are they part of a long standing indigenous irrigation culture; were they copied from white settler farmers by their African labour force; or were they spread by entrepreneurial Mission-educated agriculturists? Second, the construction, management and maintenance of these irrigation furrows is characterised and contrasted with existing literature on similar irrigation ventures in Tanzania and Kenya. Next the paper presents three contrasting case studies on irrigated valleys in the upper Revue (Manica district, Mozambique), the upper Pungwe (Báruè district, Mozambique), and the upper Nyanyadzi rivers (Chimanmani district, Zimbabwe). The case studies focus on the different, historically situated, drives behind expansion and contraction of furrow irrigation; the identity, life-histories, modes of organisation and production strategies practised by the smallholder irrigators; and the local importance and marketing linkages of the informal economies thus established.

Several waves of expansion of furrow irrigation occurred, moderated by different drives, like the promotion of furrow irrigation by labour-hungry Rhodesian settler farmers (1890s onwards); Mission induced agrarian modernisation by migrating Africans looking for land (1910-30s), and the inhibitive effects of segregationist and conservationist policies in Rhodesia (1940s & 1950s). Recent waves of furrow expansion have been fed by returning Mozambican labour migrants (after 1975 Independence and 1992 Peace Deal), internally displaced war refugees (1980s), impoverished smallholders in the wake of the 1992 Drought, and Mozambican, Malawian and Zimbabwean farm labourers after the start of the political and economic crisis in Zimbabwe (2000-).

Whilst their importance has always lain in providing a livelihood and refuge in remote mountain valleys for people on the run, some furrow irrigation based informal economies have been able to link up with urban markets or contract crop based marketing outlets, providing the impetus for agrarian intensification and modernisation.

Bolding, A., 2008, 'Going for (liquid) Gold. The differentiated impact of the Zimbabwe crisis on gold panning and furrow irrigation in central Mozambique', paper presented at a CERES-IWE research seminar entitled 'Good news from Zimbabwe? Promising initiatives emerging from the crisis', 12 November 2008, Wageningen.

This presentation reports on research work in progress in central Mozambique along the mountainous border zone with Zimbabwe, where two concurrent 'booms' have occurred since the outbreak of the Zimbabwe crisis. In the densely populated Manica district, artisanal gold panning, both along rivers and at large scale mining sites, has taken a great flight. In the remote Baruè district, a huge expansion in area under furrow irrigation has occurred. Both activities have resulted in real gains in the wealth and livelihood security of resident smallholders. However, the cases of Pandagoma (Báruè) and Penhalonga (Manica district) display very different dynamics in terms of the impact of the Zimbabwe crisis. Whereas in Pandagoma returning Mozambican, and to a lesser extent Malawian and Zimbabwean, labour migrants with work experiences on white farms and tea and coffee estates in Zimbabwe, have been at the forefront of the accelerated development of irrigation furrows and commercial production of tea, coffee, tobacco and paprika; in Penhalonga an increasing number of returning relatives and destitute Zimbabweans has created further pressure on the already intensively used natural resource base of the area (land, water, forest, gold). Thus, where Pandagoma and the wider environment of the Messambize valley offer real opportunities for new comers to take out an irrigation furrow, open up new rain-fed land and engage in cattle ranching; in Penhalonga new comers, particularly those of Zimbabwean origin without resident families in Mozambique, have been forced to engage in manual labour (tending to irrigated crops or digging for gold) for poor remuneration (a meal or some food items) or else engage in different forms of petty trading or, in the case of women, into prostitution.

Schippers, J., 2008, 'Making the water(net) work. Towards an understanding of water management practices in farmer-managed irrigation in Manica District, Mozambique', MSc thesis, Irrigation and Water Engineering Group, Wageningen University, Wageningen, Netherlands.

Farmer managed furrow irrigation in Africa has received scant attention in policy and academic circles. This stands in stark contrast to its significant contribution to livelihoods in mountainous areas and beyond. As part of the recently studied 'islands of intensification', the small scale irrigation sector in Africa has gained some interest. This study aims to increase an understanding of the performance of this small scale irrigation schemes with specific concern for the water management practices water users perform.

The functioning of farmer managed irrigation systems (FMIS) has been conceptualized by a wide array of researchers. The various concepts they have coined to explain the performance of these schemes have been analysed in this research and from them a coherent conceptual framework has been drawn up. The analysis of this 'water network' allows for a study of water resource flows that incorporates the dynamic social and physical environment in and through which actors operate. The framework has specifically been employed to study the (re)shaping of water management practices in four different situated case studies. Water management practices are understood to include the allocation of water flows, the maintenance of irrigation infrastructure and the mediation of conflicts.

From four situated case studies it was concluded that the current water management practices in furrow irrigation in de Manican hills can best be explained from four different angles. Firstly, the day-to-day practices of water organisation are elucidated by appreciating actors' hydraulic position within the hydraulic network. Secondly, the principle of 'giving everybody a chance' has been found leading the organisation of water flows. Thirdly, it is important to recognise irrigated agriculture and its related water management practices as a component of an 'African irrigation paradigm'. That is, irrigated agriculture is part of a larger livelihood portfolio available to local actors. In the highly dynamic socio-material environment multiple 'escape options' exist that render the relative importance of irrigated agriculture for livelihood purposes to fluctuate considerably over time.

The occurrence of collective action in water management was found to resemble the normal distribution curve when -following Wade 1988- collective action and water availability were contrasted on two axis. That is, both water abundance and water scarcity prompt actors to refrain from collective efforts to manage water sources. The curve does not completely explain the occurrence of collective action since actors were also found to utilize their hydraulic position to mediate downstream users into collective action.

These findings have subsequently been contrasted with some of the literature on FMIS, namely Ostrom (1990), Coward (1979, 1986) and Fleuret (1985). It was found that their conceptualisation of water management does not allow a full understanding of water management practices in the Manican hills. 'Design principles', the concept of 'hydraulic property' and the 'reflection of a social order in material ordering' have little explanatory power when contrasted with the practice of water management for irrigation in a fluid and dynamic socio-material ordering that was encountered in this study.

A final recommendation calls for joint efforts to develop a sustainable irrigated agriculture in a 'politicised' manner as it is hoped to provide an antidote to the increasing gold-mining-related environmental degradation.