

Irrigation Management Transfer In Malawi

A Case Study on the Process of Irrigation Management Transfer on Domasi Irrigation Scheme in Southern Malawi



M.Sc. Thesis by Paul Garside

September 2010

Irrigation and Water Engineering Group



WAGENINGEN UNIVERSITY
WAGENINGEN UR

Irrigation Management Transfer In Malawi

A Case Study on the Process of Irrigation Management Transfer on Domasi Irrigation Scheme in Southern Malawi

Master thesis Irrigation and Water Engineering submitted in partial fulfillment of the degree of Master of Science in International Land and Water Management at Wageningen University, the Netherlands

Paul Garside

September 2010

Main Supervisor: Dr.ir. Alex Bolding
Co-supervisor: Ir. Gert Jan Veldwisch
Irrigation and Water Engineering Group
Centre for Water and Climate
Wageningen University
The Netherlands
www.iwe.wur.nl/uk

Contents

Contents	5
List of Figures	7
List of Tables	7
List of Photos	7
Summary	9
Acronyms	11
Acknowledgements	12
1 Introduction and Background	13
1.1 Setting the Scene	13
1.2 Malawi - Climatic and Physical Characteristics	14
1.3 Irrigation in Malawi	15
1.4 Regional Setting	15
1.5 Socio Political Setting	16
1.6 The Scheme	17
1.7 Review of Irrigation Development.....	19
1.8 Problem Analysis and Study Objectives	22
1.9 Setup of the Thesis	23
2 Theoretical Framework and Methodology.....	25
2.1 What Led to the Policy Shift and IMT?	25
2.2 Critical Assessment of IMT in Practice	26
2.3 Conceptual Framework	28
2.4 Research Questions	32
2.5 Research Methodology.....	32
3 The Water Users Association.....	36
3.1 IFAD intervention	36
3.2 Organisational Setup and Evolution.....	38
3.3 Local Government.....	40
3.4 Conclusions	41
4 The WUA Elections.....	43
4.1 Customary Land Claims.....	43
4.2 The Actors	44
4.3 The Elections.....	44
4.4 Third Time Lucky: The Successful Elections	45
4.5 Conclusions Through Various Speech Acts.....	48
5 Maintenance on Domasi Scheme.....	50
5.1 Scheme Infrastructure and Perceived Associated Challenges.....	50
5.2 Extent of Maintenance Work – Dry Season 2009.....	51
5.3 Temporary Labour Projects.....	54
5.4 Plot Fees and Cost Recovery.....	55
5.5 Conclusion.....	58
6 Operation of Domasi Scheme	60
6.1 The Farming Calendar.....	60
6.2 New Measures; a Schedule and Two Water Guards	63
6.3 Water Conflict.....	64
6.4 Conclusions	66
7 Land tenure, Leadership and Rice Marketing.....	68
7.1 Land Tenure on the Scheme.....	68
7.1.1 A Sense of Ownership	68

7.2	Plot Allocation and Accumulation	70
7.2.1	Dry Season Allocations.....	70
7.2.2	Customary Land Claims	72
7.3	The President; Patron and Leader	73
7.3.1	Our President the Patron	73
7.3.2	Is the WUA Transparent Enough?.....	75
7.3.3	Prosecuting the Controlling Patron.....	76
7.3.4	Firing, Hiring and Inspiring; the President’s Search for Accountability	76
7.4	Rice Business and Marketing on Domasi	77
7.4.1	It’s a Buyer’s Market	78
7.4.2	The Responsible Middle Man.....	79
7.5	Conclusions	80
8	Conclusions and Recommendations	82
8.1	Conclusions	82
8.1.1	Intervention and WUA Setup.....	82
8.1.2	The Elections: a Moment of Democratic Accountability?	83
8.1.3	Is Maintenance Sustainable?.....	84
8.1.4	Is Water Distribution Equitable?	84
8.1.1	Local Management Styles and Capture by Local Elite.....	85
8.2	Recommendations	87
	References.....	89
	Appendix I : Discharge Measurements in Main Canal.....	93

List of Figures

Figure 1.3: Regional position of Domasi irrigation scheme	16
Figure 3.1: Previous organisational structure of Domasi WUA	38
Figure 3.2: Organogram of DWUA post 2005 change	39
Figure 5.1: Maintenance work 2009. Technical drawing	51
Figure 6.1: Winter 2009 command area and crop type.....	61

List of Tables

Table 5.1: Percentage fee payments as of 31 st August 2009.....	56
Table 6.1: Farming calendar	59
Table 6.2: Proposed irrigation schedule.....	62
Table 6.3: Water distribution tracking (one week period).....	63

List of Photos

Photo 1.1: Single lane bridge at headworks.....	16
Photo 4.1: Blindfolded candidates and voter queuing up behind	45
Photo 4.2: Queue behind former president (700 voters).....	46
Photo 5.1: Dilapidated gates on main canal missing wheels	49
Photo 5.2: Impact of human erosion along secondary channel	49
Photo 5.3: Damaged road from flooding	50
Photo 5.4: Wooden form used to set dimensions of canal.....	53
Photo 6.1: Structure in drain raising water into plot.....	61
Photo 6.2: Woman irrigating from drain.....	63

Summary

The poor performance of many irrigation schemes as a consequence of bureaucratic state management tendencies and the deepening economic and political crisis of the 1980s, called for greater user participation in irrigation management, subsequently leading to irrigation management transfer (IMT). In Malawi, it was not until the year 2000 when the government implemented fundamental measures in order to transfer the management of its sixteen smallholder schemes to Water User's Associations (WUAs). A 3 month field study was performed on a single scheme in Southern Malawi in order to understand which strategies and practices key actors on the scheme apply during the unfolding process of IMT and what outcomes their actions lead to in terms of the IMT aims of equitable water distribution, sustainable maintenance and accountable governance. Information gathering techniques included informal and semi-formal interviews, group discussions and participant observations while a technographic approach was adopted to simultaneously study the society of users, the scheme and its use. A series of key concepts were developed and used to analyse the various outcomes.

In 1999 the International Fund for Agricultural Development launched a programme of IMT on Domasi. The process revolved around the establishment of a legal WUA composed of various committees and roles. The formal structures are created to ensure all needs for effective irrigation management are present and to improve the likelihood for accountable governance. Physical rehabilitation of the scheme was marred by supply delays and budget cuts and trainings targeted only a small group of local elite. Users altered the imposed formal rules and structures and adapted them to suit the local working context. Managers have adjusted to shifting local circumstances the results of which do not match prescribed intervention plans. A patron-client structure can be used to describe the type of working relationship that exists and the exchanges made between actors.

WUA elections are a definitive democratic means for judging the operational performance and accountability of the office bearers. On Domasi, the elections offer two groups (the WUA and the Traditional Authority) the medium to contest one another for ultimate authority. The TA manages to postpone the elections, where after he then ordains them, in the process publically claiming control over the scheme. In response to accusations of autocracy, the president (by way of various speech acts) tries to expose the WUA as a democratic institution. Voting in the elections was informed partly on the basis of performance and the government is accorded the role of impartial arbitrator.

Sustainability of an irrigation scheme must be perceived through the window of user capacity to perform routine maintenance and periodic repair (Murray-Rust and Vermillion 1989:80, 84). Over a quarter of the main transport routes were maintained, headworks largely de-silted, a secondary canal structurally maintained and large tracts of secondary canal cleared of weeds during the 3 month study period. While the WUA is capable of performing this routine maintenance on an annual basis, heavier structures requiring larger investments and technical input, are out of reach. Equitable distribution is defined as the ability for users to obtain access to sufficient quantities of water to permit a harvest. Plot sharing, command area rotation, the employment of water guards improve equity conditions on the scheme while water scarcity, reduced guard activity and system tampering hampered equity and efficiency measures.

On Domasi, the WUA legally leases the scheme from the government of Malawi. While the whole scheme is legally accounted for, individual plots are owned on the basis of prior appropriation. Local leaders own a greater number of plots than normal users. Plot

accumulation is one inevitable consequence of liberalisation policies such as IMT and is one mechanism for explaining why land is captured by the local elite. The DWUA constitution is ambiguous over land holding size while renting and leasing practices are widespread. These scenarios create opportunity local powerful irrigators to claim plots in their name or in the names of close family members.

Various meetings, general assemblies, farmer discussions, dispute settlement meetings and trainings offer a stage for the WUA president and leaders to perform speech acts. Through these acts the president presents himself as a democratic, transparent and accountable leader. Many farmers endorse the president, influenced by speech acts but also in response to his performance. The president's acts are informed by a commercial agricultural orientation that was previously the responsibility of the irrigation scheme manager. In his efforts to portray his and the WUAs transparent and accountable qualities, he presents a contrast to traditional forms of authority, which takes care of its own clan and assumes authority on the basis of seniority and ancestral claims.

Rice marketing is captured by a local elite, the WUA leaders, whom function as middle men in the business of rice marketing linking farmers with various buyers. Buyers have strategies they can use to take advantage of the system but the middle men can negotiate the price and help to regulate markets on the scheme. The top middle man, the president, is honest and responsible for his clients dealings.

I recommend government be accorded a larger role. The scheme is a public good and consequently government not only has the right to arbitrate but it is also their responsibility to intervene and monitor its use. They should have role in monitoring the WUA fiscal apparatus, in order to enforce the accountable financial management. Secondly, managers must be equipped with the necessary skills to enact water schedules, and calculate water flows through calibration techniques. Lastly, a greater amount of empirically grounded research on irrigation reform in Malawi is needed to enable improved design, operation and management future reform processes.

Acronyms

ADC	Area Development Committee
ADD	Agricultural Development Division
AEDC	Agricultural Extension Development Co-ordinator
DA	District Assemblies
DAO	District Agricultural Office
DADO	District Agricultural Development Officer
DANIDA	Danish International Development Agency
DDC	District Development Committee
DIO	District Irrigation Officer
DO	District Office
DOI	Department of Irrigation
DWUA	Domasi Water Users Association
EPA	Extension Planning Area
ESAP	Economic Structural Adjustment Programme
FAO	Food and Agricultural Organization
GOM	Government of Malawi
GVH	Group Village Headman
IFAD	International Fund for Agricultural Development
IMT	Irrigation Management Transfer
IO	Irrigation Officer
LAC	Land Allocation Committee
MOA	Ministry of Agriculture
MOAFS	Ministry of Agriculture and Food Security
MP	Member of Parliament
MYP	Malawi Young Pioneers
O&M	Operation and Maintenance
SFPDP	Smallholder Flood Plains Development Programme
SMC	Scheme Management Committee
TA	Traditional Authority
TATM	Taiwanese Agricultural Technical Mission
TOT	Training of trainers
UDF	United Democratic Front
VDC	Village Development Committee
VH	Village Headman
WUA	Water Users Association

Acknowledgements

I wish to express thanks to my main supervisor Alex Bolding from Wageningen University for extending your time and knowledge into bringing out the best in my work. Without your support and motivation during the dying stages I would have never finished this thesis in time. To Gert Jan Veldwisch for co-supervising my research. I appreciate your support while I was in the field, our regular email contact keeping me focussed on the tasks always with one foot in the right direction. Thanks to Peter Waalewijn from the World Bank Malawi office for giving me the opportunity to carry out research in Malawi and linking me with the appropriate IRLADP project staff at regional and district level. To Joseph Chisenga from IRLADP and Henrie Njoloma for offering valuable information on past and present processes relating to IMT on Domasi scheme. A warm heartfelt thanks to all the Domasi WUA committee members, farmers and government staff who welcomed me and took the time out to share their knowledge in the process assisting my understanding of the scheme and the many processes that were at work.

I would like to express thanks to my parents Roger and Yvonne, for their constant support both during this research and throughout my time studying in the Netherlands. I hope we will be together again soon. Lastly a heartfelt thanks to my partner Eirin for your everlasting patience, love and support throughout this study and our time in the Netherlands.

1 Introduction and Background

1.1 Setting the Scene

Domasi scheme is one of sixteen government owned smallholder irrigation schemes built in the early 1970s, which has recently over the last 10 years experienced a process of Irrigation Management Transfer (IMT) from the Government of Malawi to user associations. Domasi scheme was built between 1967 and 1975 at a time when many development administrations in Africa were investing in irrigation. The schemes were supported with large amounts of international funding in order to launch a process of agrarian modernisation, rural growth, nationwide unity and political reputation (Bolding, 2004).

Domasi scheme was established as a settler scheme with the intention of establishing a population of enthusiastic smallholder farmers that were inspired by the prospects of more efficient agricultural production and socio-economic advancement. Beginning in the 1980s, in response to worldwide Economic Structural Adjustment Programmes (ESAPs) and fiscal austerity measures, the Malawi Government had to implement budget reductions, which resulted in reduced support for the maintenance and operation of the schemes. In many parts of Sub-Saharan Africa, this deepening economic and political crisis led to a deterioration of scheme infrastructure and poor overall scheme performance. (Veldwisch et al, 2009)

During this same period, the leading role of many governments in irrigation was criticised because they were considered too rigid, hierarchical, centralistic, bureaucratic and therefore irresponsible to user demands. This consequently led to policy shifts in favour of more participatory forms of irrigation management and the adoption of IMT. There was a rapid phase out of support for Malawi's 16 smallholder settlement schemes allowing governments to cut back on their irrigation expenditures and a subsequent transfer of management to users organisations. While some aspects of IMT were adopted in Malawi in the mid 1990s, it was not until 2000 that more fundamental measures were taken. IMT promised improved levels of accountability for operation and maintenance as a consequence of improved user participation. (Veldwisch et al, 2009)

Globally, the transfer of irrigation schemes were fraught with many difficulties, as both state and users attempted to adopt the new modalities. IMT raised questions over who was going to be served, the state, farmers or donors, and would handover solve the problems of irrigated agriculture. Early indications revealed an array of difficulties with handover schemes that stemmed from state refusal to relinquish management control, to inability by irrigators to afford the costs associated with decentralised control. In Malawi, several studies revealed similar issues whereby farmers were reluctant to take on the financial responsibility that came with managing an irrigation scheme. Farmers were concerned that the new structures would remove opportunities, or allow unequal access to scheme land while difficulties during the rehabilitation of the schemes led to delays in the transfer process. (Ferguson and Mulwafu, 2005)

Domasi irrigation scheme, located in the Lake Chilwa basin in Southern Malawi, was one of the pilot schemes funded by the International Fund for Agricultural Development (IFAD) for the transfer of management to a Water Users Association (WUA). This paper sets out to examine the experiences of the presently unfolding process of IMT by the WUA leadership, irrigators, and government representatives during of IMT on Domasi scheme. The paper examines different user strategies and practices and the outcomes in terms of the proposed IMT aims of equitable water distribution, sustainable maintenance and accountable governance.

1.2 Malawi - Climatic and Physical Characteristics

Malawi is a landlocked country in Southern Africa and is located within the latitudes 9°22'S and 17°03'S and longitudes 33°40'E and 35°55'E. The country has a total area of 118 480 km² and approximately 20 percent this area is surface water bodies. The topography zones



Figure 1.1: Map of Malawi

can be divided into 3 general zones, highlands, the plateaus and escarpment plains. The soils can generally be divided into three categories, lithosols, latosols and haplic lixisols. The climate falls under tropical continental, and this is influenced by Lake Malawi, a large water body that stretches across almost two-thirds of the eastern border (see Fig 1.1). There are two distinct seasons in Malawi: the rainy season which runs from November to April and the dry season going from May to October. The dry season can be separated into two periods, one cool and dry, the other hot and dry. The annual rainfall ranges from 700 to 2,400 mm, however distribution depends on the topography and closeness to Lake Malawi. Generally highest rainfall is recorded in the mountainous areas, with less rain more prevalent in lower lying areas. Temperatures, similar to rainfall vary depending on the topography and altitude. General temperatures fluctuate between 28 °C and 10 °C. In 2008 the population of Malawi was estimated at approximately 13 million, with a current annual growth rate of 2.8 percent. This makes Malawi the most densely populated country in the Southern African Development Community region, with an average density of 139 inhabitants per square kilometre (NSO, 2008). Malawi is one of the poorest nations in the world, ranking 166 out of 178 on the Human Development Index (Nationmaster, 2006). Due to expanding populations placing pressure on the land, fallow periods have declined and cultivation has expanded into less productive areas. Deforestation and poor land management practices are causing severe land degradation seriously impacting the natural resource base. Agriculture is the dominant and most important sector earning 37.6% of Malawi's Gross Domestic Product, accounting for 90 percent of the country's export earnings, with 60% rising from the main export, tobacco. A large smallholder sector with many small scale farmers grow food crops for consumption and some cash crops like coffee, tobacco, macadamia and cotton. There is a smaller estate sector composed of large scale farmers that produce almost solely for the export market. In 2001, the total cultivated area in Malawi was estimated at 2.34 million ha, 90% of which was maize, the country's main staple. This is mainly supplemented with sorghum, millet, pulses, rice, root crops, vegetables and fruits. Export crops grown by small holders include cotton, rice, groundnuts, coffee, macadamia and tobacco, and state-grown crops are predominantly tobacco, coffee, tea and sugar. (Ferguson and Mulwafu, 2007, p.214)

1.3 Irrigation in Malawi

The World Bank estimates 28,000 ha of formal or semi formal irrigation exists whereby 6,500 ha is small farmer self-help schemes and 3,200 ha is irrigated under government run irrigation schemes, and 18,300 is under estate irrigation (Ferguson and Mulwafu, 2007, p.214). Estimates of the potential area for irrigated agriculture in Malawi are between a



Figure 1.2: Location of 16 government smallholder schemes

financial support. Semi-formal schemes used some technical support and were farmer initiated. Formal schemes are planned, designed and built by professionally trained staff which included both small holder and estate schemes.

1.4 Regional Setting

The research was carried out on Domasi irrigation scheme located in the Lake Chilwa Basin. The scheme is fed by the Domasi river which has its source high up in the Zomba mountains 20km to the West of the scheme. Five kilometres downstream of the scheme's intake the river empties into Lake Chilwa, a shallow (average depth 2 meters) 683 km² saline lake that lies on the border between Malawi and Mozambique. The basin system drains rivers that originate

quarter and half million hectares. The major part of this potential land is found adjacent to the shores of Lake Malawi, on the Lake Chilwa plain, the Lower Shire Valley and along the many flood plains of the various river systems. These areas inhabit the fertile soils and adequate water sources for potential irrigation sites.

Between 1967 and 1975, 16 government-run smallholder irrigation schemes totalling 3600 ha were built by the Malawi Government. They were established to demonstrate the methods and benefits of intensive cash crop production (Veldwisch et al, 2009). They were located in 5 Agricultural Development Districts (ADDs) spanning the length of the country. Liphasa Irrigation Scheme was the first scheme to be built in the 1940s. In the mid 1950s, two more schemes were established in the Chilwa and Phalombe Plains. Irrigation schemes in Malawi have been categorized into four groups. They are; 1) private schemes greater than 100ha, 2) private small commercial schemes (<100 ha) owned predominantly by individuals, 3) government operated smallholder schemes, and 4) self help smallholder schemes run and owned by farmers. The Department of Irrigation (DOI) classifies the systems depending on their management. Informal schemes were built by farmers with little technical and

from the Shire Highlands in the east, the Zomba Plateau in the west and the Mulanje Massif in the South. The basin is monitored by several biodiversity conventions including Ramsar. It is home to six of Malawi's sixteen smallholder irrigations schemes. To date there have been no serious conflicts of water resources and Malawi is signatory to international treaties that set rules to govern these water resources. (Ferguson and Mulwafu, 2007).



Figure 1.3: Regional position of Domasi irrigation scheme

1.5 Socio Political Setting

The Chilwa area is composed of four ethnic groups namely the Yao, Lomwe, Mang'anja and Nyanja. Their culture, land value systems, kinship and familial structures are very similar. Land ownership, property, inheritance and family structure are based on matrilineal principles (Chilivumbo, 1971, p.316). Zomba district and surrounding districts generally use matrilineal inheritance and succession and matrilineal residence. This aspect serves to differentiate this area from other matrilineal groups, women working land belonging to their own matrilineal group, men using land belonging to their wives (Peters and Kambewa, 2007, p.453). In Malawi senior chiefs control large areas that comprise of many villages. Some villages are bunched under a Group Village Headman (GVH). Every village has a Village Headman, and he or she assumes the village name upon engagement of the position. Senior chiefs are appointed from the reigning family by senior members of that family. The senior chiefs can also be removed if they fail to perform their responsibilities adequately. There are also Paramount Chiefs in Malawi, and in 1995, there were three representing three ethnic groups. The majority of areas however do not have a representative Paramount Chief (Peters and Kambewa, 2007, p.470).

1.6 The Scheme

Construction of the Scheme

Construction of Domasi irrigation scheme commenced in 1969 and was completed in 1975. It was officially opened in 1973 by the former life president Dr. Kamuzu Banda. The scheme was constructed by the Government of Malawi (GOM) together with the Taiwanese Agricultural Technical Mission (TATM) with the aim of boosting peasant agricultural productivity and improving economic development in the different regions. Prior to the establishment of the scheme, approximately 16 families were living and farming in the area. The government consulted the chiefs and soon the required amount of customary land was appropriated for the construction of the scheme. The GVH from Zomba District, refused to grant land for the scheme establishment, arguing that his subjects would lose too much land. The GVH from the neighbouring Machinga District agreed to provide land and so the scheme was eventually built on the Machinga side of Domasi River. Original landowners on the scheme land were resettled outside of the scheme, compensated in the form of land elsewhere or were allocated plots that were convenient within the scheme blocks. By 1971 there were 880 plot holders farming on the scheme and by 1973 the number had risen to 1220. The scheme is approximately 500ha and divided into small square plots of three-eighth of an acre or 0.15 hectares each (Chilivumbo, 1971, p.317).

Like other similar schemes at the time, Domasi was built as a settler scheme. The intention was to establish a population of enthusiastic smallholder farmers that were motivated by the prospects of improved agricultural production and socio-economic advancement (Veldwisch et al, 2009 from Kishindo, 1996). The annual turnover of users on the schemes was higher than 25%, only in the 1990s did this figure drop. A main reason for this was the tendency for settlers to stay and farm at the scheme for one or two seasons to raise some money before returning home again. Other reasons included the lack of field labour assistance, poor access to health facilities as many schemes were not necessarily close to a major urban centre and dislike of the imposed MYP management regime. These schemes therefore became a place where individuals with no alternative form of income could settle and improve their socio-economic status (Veldwisch et al, 2009, p.203).

Scheme Design

Water is taken off from the Domasi river approximately 350m upstream of the 1st secondary offtake. A large gated headworks and concrete diversion funnel water through trash racks into the main canal. The headworks also function as a single lane bridge providing a valuable link between the scheme and the areas lying south (photo 1.1). The first secondary offtake is almost 3km long and takes water to the northern part of the scheme supplying water to blocks I, J and K. It is also the canal that supplies water to the fish ponds located at the start of the canal near the scheme offices. After a further 300m along the main canal is the 2nd secondary canal offtake (see Fig 1.4). This canal is approximately 900m long and feeds block A. Secondary canal 3 of similar length feeds block B. Secondary canal 4 is the longest and runs for more than 3 km feeding blocks C, G and H in the North East portion



Photo 1.1: Single lane bridge at headworks

of the scheme (see fig 1.5). The main canal continues and leads to further secondary canals that feed into blocks D and E. In previous years block F was used as a demonstration farm, but in recent years, several plots have been re-allocated to common irrigators for general farming purposes.



Figure 1.4: Digital satellite image showing Domasi River, offtake and main canal

Source: Google Earth 2010: Imagery date, 2001

All secondary canals are unlined except for a few specific sections. The control structures are of the undershot type, whereby water is forced to flow underneath. All the control structures are adjustable. Larger gates can be adjusted with a handwheel by means of a screw thread. This allows a large degree of freedom as the gates have an indefinite number of settings.

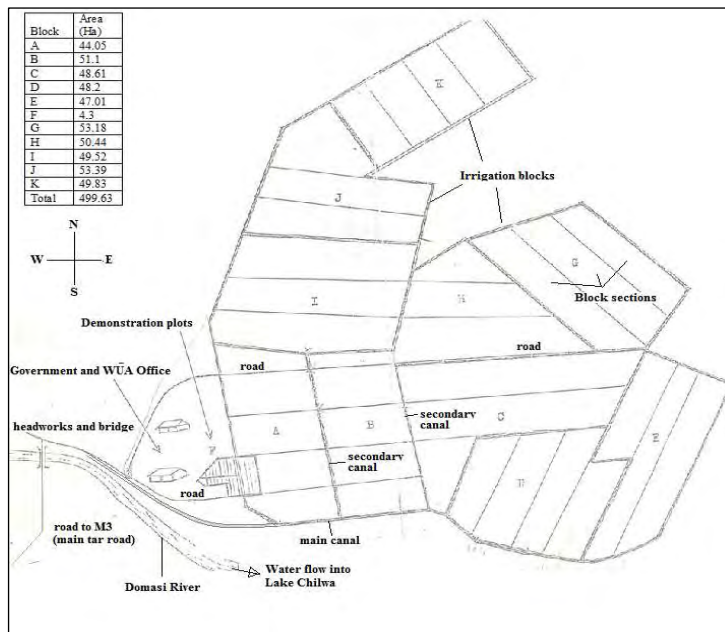


Figure 1.5: Sketch map of layout of Domasi scheme

Cement lined division boxes are located at every offtake from the main and secondary canals while no divisions boxes are present at the tertiary level. A tertiary canal is essentially a non lined rectangular ditch with bunds built up on either side. Takeoffs at this level do not exist, and are constructed at the required point by users with sticks, debris and soil. The scheme uses a double cropping system for rice production. A rainy season crop from January to June and a dry season crop from July to December.

Harvesting of the summer crop takes place in the months of May and June, and the winter harvest in November and December. The scheme uses gravity fed irrigation into paddies or basins termed plots. Maize, and other vegetables are also grown in

conjunction with rice in the dry season. Vegetables are usually grown on marginal strips, such as on bunds or on higher parts of the scheme. These crops make use of residual moisture and are irrigated using watering cans. Water melons are produced on a commercial basis by a small group of growers. Preparation for the summer or rainy season crop begins in December, with the first rains. Plots are tilled and nurseries are established along the edges of the plots. Every farmer prepares his or her own nursery inside the plot. After 30-50 days the seedlings are transplanted into the field. This takes place during early months of January and February. Prior to transplanting the soil is tilled manually using a hoe. Kilombero is a popular variety of rice grown on the scheme due its tasteful flavour and demand from buyers. It has the longest growing time of any variety taking up to 140 days, making it only feasible for farmers to cultivate during the longer rainy season period. Other varieties grown are Supafaya, Lifuwe, Pussa 33 basmati and TCG10. Pussa 33 basmati has the shortest growing time of approximately 110 days and is the most popular variety during the short winter growing season stretching from July to November. Fertilisers applied are the NPK inorganic compound fertilisers and urea.

1.7 Review of Irrigation Development

The Banda Era

The late 1960s witnessed the development of the irrigated settlement schemes for the production of low-cost grain and commodities for export, to instigate agrarian modernisation and rural development and to promote national unity (Bolding, 2004, p.5). Malawi obtained its independence from colonial rule by Britain in 1964 and Dr Kamuzu Banda of the Malawi Congress Party became the first president of the new government. His idea for the settlement schemes was similar, to establish a population of enthusiastic smallholder farmers that were motivated by the prospects of improved agricultural production and socio-economic advancement. To establish the schemes, the government changed customary land into public land under the Customary Land (Development) Act of 1967. The act essentially authorized the minister responsible for lands to declare a particular area a 'development area' (Kishindo, 1996, p.2). Once so affirmed, the customary land was turned into public land. The power of customary holders of this land ceased, and the responsibility of the land transferred to the government. Those who occupied pieces of such land became the tenants of the state (Chirwa, 2002, p.311). In 1967, an irrigation branch which later became known as the Department of Irrigation was installed in the Ministry of Agriculture (MOA) to construct operate and maintain the irrigation infrastructure. The Department of Agricultural Extension assisted in giving crop advice while the state crop marketing board offered inputs at cost price (Veldwisch, 2009, p.202).

A paramilitary wing of the ruling MCP called the Malawi Young Pioneers (MYP) were established in 1965 soon after independence, and tasked to integrate Malawian youth into farming and agricultural development. Training bases were built around the country where primary school graduates could receive 10 months of basic training in leadership, civics, agriculture and community development (Ferguson and Mulwafu, 2007, p.215). After some time the MYP became involved in political affairs, and soon played the role of political 'watchdogs' maintaining discipline and ensuring compliance with party rules for the countries increasingly authoritarian leadership. Irrigation schemes in Malawi became closely identified with the MYP. Schemes were often used as training bases, and for two decades from the early 1970s the schemes were managed in a top-down authoritarian mode. The MYP placed themselves in charge of managing the schemes all the way from main gate to tertiary level.

TATM assisted the government in the technical and managerial aspects of irrigation farming. Traditional authorities assisted the Government and the Taiwanese Mission in handling sociocultural matters in relation to the resettlement of displaced villagers and conflict resolution. Land Allocation Committees (LMCs) were established to manage schemes and were composed of local farmers politically appointed by the government authorities. Chiefs and MCP officials often headed these committees while the MCP discipline officers took on ex officio membership roles. The LACs played a big role in implementing statutory laws and regulations with a large degree of force and intimidation. Failure to respond to the rules set in place were severely punished (Ferguson and Mulwafu, 2007, p.216).

Near the end of the 1980s, the production from the schemes accounted for one third of national rice production and covered 20 per cent of all land under rice cultivation. The schemes were not as productive as was planned however due to several factors. Water shortages, flooding, poor hardware designs, incomplete land levelling, sedimentation, lack of user maintenance and an ill-equipped and understaffed DOI contributed to the poor performances. These factors led to lower than expected rice yields. The poor productivity of irrigation schemes was not isolated to Malawi and generally applicable to schemes in many other areas of sub-Saharan Africa. The GOM's lack of finance for adequate upkeep of the schemes prompted a request to donors to finance machinery and capacity building programmes. The Danish International Development Agency (DANIDA) took over the responsibility of rehabilitating the Malawi's 16 settlement schemes. The effort was divided into two phases, the first (1985-1989) consisted of physical rehabilitation and a management turnover investigation. The Food and Agricultural Organization (FAO) and DANIDA funded a study of three pilot schemes, to test the feasibility of IMT. DANIDA did not complete its work as they were involved in political disagreements with the Malawi government leading to the closure of their operations in Malawi, and the experiments yielded inconclusive results. During the second phase (1989 – 1994) the schemes were prepared for farmer management through the introduction of Scheme Management Committees (SMCs). (Veldwisch et al, 2009, p.205)

The Muluzi Era

In 1994 a referendum was held in Malawi, whereby the Banda regime lost power in a tense multi party democratic election to the new United Democratic Front (UDF) headed by Bakili Muluzi, who became the first democratically elected president of Malawi. Almost immediately the original power structures that were in place on the schemes under the MCP fell apart. There are accounts of violence and retaliation by local scheme citizens against MYP personnel, most of whom fled to other areas before they were caught. The rules that had governed irrigation farming on the schemes fell away and irrigators stopped following cropping calendars and other rules that had previously been established (Ferguson and Mulwafu, 2007, p.216).

SMCs consisted of elected members from plot holders and Government employed Irrigation Officers (IOs) were placed on the schemes to oversee scheme management and serve as ex officio members in the SMC. In practice IOs played a large role in scheme authority and were highly influential in SMC processes. After many years under an authoritative regime, farmers were reluctant to take orders from the SMC leaders and as a result they were deemed ineffective, weighed down also by cases of corruption and poor governance (Ferguson and Mulwafu, 2007, p.216). Studies carried out during these initial years of the SMC revealed poor socio-economic conditions manifested by low incomes, high rates of farmer turnover, land dispossession, gender discrimination, autocratic administration by the SMC and poor participation by the users. During the Banda era a permit system was put in place to control

cultivation and the residence time of settlers. During the multi-party democracy period however they fell into disuse. The permits were no longer respected and people began leasing out plots. This process led to plot concentrations and accumulation but also brought about cropping intensification.

TAs started to return after democracy and started to reclaim the land within these development areas. The TA could argue that the land was theirs originally, that they were the true custodians placing ancestral claims on the land. The LACs and SMCs ruled against these reclamations by traditional powers, using the argument that in fact the scheme still belonged to the government and was still slated as public land (Pauline Peters, 2007, p.466) The scheme managers were the rule makers and they could evict anyone that did not abide by certain rules. They wanted and needed to exclude any influence of the TA who could sit between or intervene in the decision making.

In 1999, UDF introduced and signed into policy the National Irrigation Policy and Development Strategy which promoted the discontinued government support for Malawi's 16 smallholder irrigation schemes and transfer of ownership and management to local users (Ferguson and Mulwafu, 2007, p.212). At the same time IFAD launched the Smallholder Flood Plains Development Programme (SFPDP) which targeted physical rehabilitation, training and transfer of responsibilities to farmers associations on several smallholder schemes including Domasi. At the time, five schemes were selected for rehabilitation and handover to farmers. These were Lufira, Wovwe, Domasi, Nkhate and Bua. Actual handover was to be preceded by three processes, the first being a rehabilitation of scheme infrastructure, the second involved a training programme for farmers and the third was a reorganisation of the management structure (Nkhoma and Mulwafu, 2004, p.1330).

The SFPDP represented the first phase of a long term development effort for the irrigation and water use sector in Malawi. The program was operational from 1998 until December 2006 (Bishop-Sambrook, 2007, p.2) and funded by the IFAD targeting the smallholder utilization of available surface and groundwater resources in the country. Full user participation in all stages of the planning, decision making and implementation was encouraged to reach the main objectives. The overall objectives of the project were to improve household food security, improve the health of families through better nutrition and improved health and drinking water services to communities.¹ Domasi was one of eight schemes that were included under the program for infrastructure rehabilitation, capacity building and management transfer to user associations (Ferguson and Mulwafu, 2004, p.1330).

The Bingu Era

The new Water Policy of 2005 supports and endorses the establishment of catchment management authorities to manage water use. Malawi has been separated into 17 large catchment areas, marked out by hydrological criteria in many instances cutting across political administrative boundaries. These new authorities are in line with the reforms affecting local government operations. Political and administrative tasks that were formally carried out by the line ministries are being handed to the districts and municipalities through the local District Development Committees (DDC) and Plan. DDCs are comprised of Chiefs, Members of Parliament (MPs) in the district, and district officials of parties represented in parliament. Under DDC are the Area Development Committees (ADC) which consist of elected members from various villages, GVHs, Sub-Chiefs, and the Snr GVH as the presiding officer. The ADCs are responsible for reviewing proposals submitted by the Village

¹ (AHT Group AG website. Retrieved: 28th July 2010)

Development Committees (VDC). VDCs consist of elected members from the community and are presided over by a Group Village Headman. VDCs co-ordinate projects at the village level, and occupy the lowest position in the hierarchy (Kishindo, 2003, p.381).

The new policies are in line with the neo-liberal ideology for proper institutional structures that promote the devolution of control from the state, and transfer management responsibilities for natural resources to local government and the private sector. The powers of Traditional Authority (TA) have been reaffirmed, and they are integrated into the new structure through their ex officio participation in District Assemblies, as well as serving as chairpersons of the ADCs (Ferguson and Mulwafu, 2007). The GOM has accorded them larger role upon the realisation that there is a higher likelihood of success if TAs are part of the process. This constitutes a reversal of irrigation policies that were implemented during the Banda era, whereby TAs were excluded from governmental affairs. Within the context of WUA functioning, WUA leaders realise the importance of traditional leaders and provide them with advisory or ex officio roles. This allows the WUA leaders space to govern the scheme more effectively and with enhanced authority.

The Irrigation, Rural Livelihoods and Agricultural Development Project (IRLADP) is a government agricultural project being implemented by the Ministry of Agriculture and Food Security (MOAFS) to raise agricultural productivity and incomes of rural households in the districts of Nsanje, Chikwawa, Blantyre, Phalombe, Zomba, Dedza, Lilongwe, Salima, Nkhatabay, Rumphu and Chitipa. The project started in 2006 co-financed by the World Bank and IFAD with about \$52 million over five years. The project has five components, namely rehabilitation of irrigation schemes, farmer services and livelihood fund, social development and community mobilization and project coordination and monitoring and evaluation. Under the project, 2,500 hectares of irrigation land is undergoing rehabilitation including the main government schemes of Muona in Nsanje, Limphasa in Nkhatabay, Likangala in Zomba and Nkhate. Thirty eight new irrigation schemes are being developed, 18 of which are small scale (10 to 50 hectares). At the time of research, Domasi WUA was expected to receive training in water management and financial management, aspect that were not fully covered in the previous SFPDP. The responsibility for operation and maintenance of the schemes lies squarely on these associations.

1.8 Problem Analysis and Study Objectives

In the 1970s, the leading role of many governments in irrigation was criticised because of the perceived negative consequences, and there were several reasons for this. One argument was that irrigation bureaucracies were too rigid, too hierarchical, centralistic and too controlling. This led to policy shifts in favour of more participatory forms of irrigation management and the way to do this was by way of IMT. IMT promised improved levels of operation and maintenance on irrigation schemes by way of enhanced user participation. The main policy objectives for the transfer of management into the hands of the users was largely two-fold. Firstly, transferring responsibility for scheme operation and maintenance to the users, meant that governments were able to cut back on their expenditures and focus their resources and energy on other tasks. In the second instance, the increased level of responsibility and accountability given to the users would result in better use of the resource. User management was deemed more effective, responsive and demand driven than bureaucratic, agency management. In practice not all IMT policy aims were realised however. WUAs were not always capable of enforcing regulations or raising funds for Operation and Maintenance (O&M) activities resulting in the deterioration of scheme infrastructure. Efforts to decentralise management were resisted by the farmers, or by state bureaucracies not wanting to devolve authority or discharge staff.

The main study objective was to study the effects of IMT as it was implemented in one case study, Domasi irrigation scheme. I will observe the effects that IMT has had in terms of financial sustainability. More specifically I will analyse the functioning of the newly established WUA with particular attention paid to accountability, transparency and leadership; the equity and productivity effects of user operation of the scheme; the sustainability of maintenance undertaken by the users; and lastly the effects of IMT on plot concentration and accumulation of wealth amongst the different users as well as the financial viability of irrigated production by looking at rice marketing.

1.9 Setup of the Thesis

In chapter 2 I provide background information on IMT and its origins. Then a rationale for IMT is provided followed by a critical review in practice. I then present the various concepts I aim to use in order to analyse the findings. Finally I present the main study question, and sub-questions that were used to guide the research.

Chapter 3 introduces the water users association in Domasi and the intervention that initiated the IMT process. Based on various accounts and project documents, I outline the interruptions and obstacles that the intervention encountered on Domasi, then describe how the WUA was formed and the subsequent processes that affected its setup. I then attempt to portray the relationship between the local government and the WUA, and how this informs working ties and the dealings in response to a water abstraction bill. To conclude, I deduce some of the principles and causation for the resulting organisational adjustments

Chapter 4 presents a situational analysis of power relations through the study of one critical event: the WUA elections. The struggle for the control by two authorities, the WUA and TA is described in the run up to two failed elections. I present the outcomes of the election that did occur, and through the presentation of a series of speech acts by various actors offer a framework whereby the processes can be analysed.

In chapter 5 I present the perceived challenges as result of the deterioration of various parts of scheme infrastructure. I describe the ways in which the WUA labour is mobilised and present results from plot fee recovery efforts. To conclude I discuss whether maintenance on Domasi is sustainable.

In chapter 6 I initially describe and analyse water management practices applied by farmers to both access and control the flow of water, predominantly at tertiary level. The latter 6-7 weeks of my field research coincided with lower volumes of water. As a result of the diminishing levels of water I could observe several instances whereby water became a contested resource. I then present the different mechanisms that were employed by the WUA in order to control water distribution. Finally I conclude by analysing the equity and efficiency of distribution measures.

In the first part of chapter 7, land tenure and plot accumulation mechanisms are described and analysed within the framework of institutional capture by the local elite. The section deals with the variety of ways users gain access to plots or raise cash through the use of various arrangements. The part briefly observes past and present gender representation in land tenure on the scheme by way of registered female plot holders and how in the case of matrilineal areas like Domasi, plots remain in the matrilineage. The second section is divided into two segments. The first segment deals with how the president functions, acts and attempts to enforce accountability of the users. The second segment describes the marketing strategies employed by various leaders I then try to draw conclusions from these situations and discuss the overall impacts in the context of the local managing styles.

In the conclusions I try to draw out the main findings from the research and address the main issues that will help to answering my main research questions. Specifically this relates to the strategies and practices key actors on the scheme use during the unfolding process of IMT, what outcomes their actions lead to in terms of equitable water distribution, sustainable maintenance and accountable governance, and using several concepts try to analyse a cause for the observed outcomes. In the last section I present several recommendations.

2 Theoretical Framework and Methodology

2.1 What Led to the Policy Shift and IMT?

In the 1970s, the leading role of many governments in irrigation was criticised because of the perceived negative consequences, and there were several reasons for this. One argument was that irrigation bureaucracies were too rigid, too hierarchical, centralistic and too controlling. This affected aspects such as staff performance and the management behaviour leading to the unproductive manager. Overstaffing, corruption and political influence made the state an obstacle to irrigation modernisation and improved performance. In the mid 1980s, the reduced expansion of irrigated area, characterised by low grain prices, rising construction costs and rapid deterioration in irrigation infrastructure led to a poor overall management performance. In the 1970s and 1980s large reductions in the international prices of rice, grains, cotton and sugar occurred. The prices of these principally irrigated farm products have remained low. While the low prices for food and fibre have benefitted the poor around the world, they have also resulted in lower rates of return from irrigation farming. (Jones, 1995)

The funding for O&M on irrigation schemes has remained constant while the expansion in irrigated areas has increased by a greater factor. Foreign aid and loans from international financing institutions for the development of new irrigation systems was substantially reduced as they shifted their priorities away from irrigation development (Oorthuizen, 2003). Rising construction costs meant fewer dollars per hectare could be spent on rehabilitation efforts leading to the deterioration of irrigation infrastructure. Governments could no longer afford to manage large irrigation infrastructure. There was a need to create a new and efficient management structure to manage these public irrigation systems (Vermillion et al, 1995, p.1).

This led to policy shifts in favour of more participatory forms of irrigation management and the way to do this was by way of IMT. It is not a simple one-sided turnover from the state to the users, rather it manifests itself in different ways and is implemented in a variety of forms. Local conditions such as the water rights, individual rights, the new governing entity's rights, management and staffing and procedures and sources of funding make transfer follow different and often unique paths. On a broader level, factors such as the state law, the structure of its government, the bureaucracy and culture of the people shapes transfers in distinct ways (Frederiksen, 1995, p.22). Thus transfers can take a variety of forms, and depending on these factors, service provision is supplied to differing degrees by the government, agency or farmer entity. It may be that the farmer entity takes full responsibility for the service provision, however in circumstances where there is partial transfer there may be a joint responsibility for the provision of irrigation services (Vermillion and Sagardoy, 1999, p.2).

Since IMT first gained momentum as early as the 1960s, it has taken place on five continents. In the 1960s, IMT was implemented in countries like the United States of America, Taiwan and Bangladesh. The 1970s saw IMT introduced in Mali, New Zealand and Columbia. The lead example in the 1980s was provided by the National Irrigation Authority (NIA) in the Philippines and Mexico's rapid IMT in the early 1990s provided a template for the world. Since the turn of the century, countries such as India and China have embarked on IMT reform, taking the total number of countries to 57 representing 72% of world populations and 76% of irrigated land worldwide (Garces-Restrepo et al, 2007, p.6).

IMT Rationale

In the vast majority of cases, IMT promises improved levels of operation and maintenance on irrigation schemes. These promises include overall improved scheme management consisting of more cost effective management, improved cost recovery that is achieved directly from increases in the rate of user irrigation fees. Improved maintenance operations, more efficient and equitable water delivery and improved productivity if irrigated agriculture is pledged with irrigation management transfer. Several key features help explain and provide grounds for these hypotheses. The large underlying factor feature of transfer of management into the hands of the users is the increased level of responsibility and accountability felt on the part of the users. The users are given control over the resource, its use and management, and consequently develop a more personal, active and dynamic relationship with the resource over a period of time. User management is deemed more effective, responsive and demand driven than bureaucratic, agency management. The management body, that is made responsible for the everyday management of the scheme by the users, have the responsibility of providing satisfactory services. The managers not only feel more accountable as owners of the resource, but also feel accountable towards the people they have been asked to serve, the people that hold them accountable for the service provision. The contractor, or managing body, aims to reduce the costs for the users by implementing cost effective measures while the customers, or users have an interest in keeping user fees to a minimum. This type of relationship stimulates efficiency from both ends of the provider-customer relationship (Oorthuizen, 2003).

Users soon develop more proficient measures to manage the irrigation scheme. These include measures such as improved cost recovery through increased payment of user fees. As users feel a greater sense of ownership (Oorthuizen, 2003) over the infrastructure and responsibility for its upkeep, they are more inclined to contribute to the costs. They become empowered and want to define how their irrigation services will function, who will provide them, and at what costs these services will be provided. At the launch, IMT may increase the cost of irrigation for farmers, however as scheme management impose more cost-effective measures, such as the hire of more affordable local labour, and users enhance their irrigation activities through service area expansion and higher cropping intensities, the overall system productivity will increase which will soon outweigh the costs (Garces-Restrepo et al, 2007 pp.11,12). In some countries, users may develop secondary functions such as managing water used for non-irrigation uses such as fish, livestock or domestic purposes, or developing agribusiness and marketing instruments. Farmers may feel the need to engage in these types of secondary business enterprises (15,16) in order to cross-subsidize the cost of irrigation maintenance and operation and to increase the profitability of irrigated agriculture for their members. Irrigators come to appreciate the possible rewards achievable as a self governing entity, and so begin to recognize the risks involved. In response, they naturally impose measures to fix, as well as prevent future deterioration. Over time they develop a greater sense of liability for the future sustainability over the resource. They develop a personal interest in ensuring proper operation and maintenance is carried out in a sustainable manner such that they can guarantee their scheme is productive over the long term (Vermillion, 1991).

2.2 Critical Assessment of IMT in Practice

It is imperative that I offer a critical analysis of IMT, as it happens in practice. It is all too commonly know by development workers that there is no straight line extending between implementation to outcomes. There are numerous cases whereby factors not related to the development programme affect the outcome. It is therefore important that I provide some

examples of programmes whereby policy objectives were not realised and the causes underlying.

In some instances, even before the handover has begun, reports have indicated that farmers have been reluctant to take over the control and ownership of deteriorated infrastructure. Ferguson and Mulwafu (2005, 2007) offer accounts based on research in Malawi whereby farmers have been wary of taking on the financial responsibility that comes with managing an irrigation scheme. Their prime reasoning was that if such a large institution like the government was incapable of taking care of the schemes, how were they to succeed. On ownership of infrastructure, there have been reported cases whereby governments have refused handover over of actual ownership by official means, often based on the fear that it would end up being captured by local elite. As a result the WUA was unable to use the schemes assets as collateral to raise funds for O&M or marketing. In Zimbabwe, efforts to decentralise management were resisted by the post colonial government. Policy discourse did not fully account for the rights and responsibilities of farmers, and many laws were not made official. Rather than turnover to farmers, an expanding state bureaucracy resisted the devolution of authority. As a consequence of this lack of power, the WUAs were not able to enforce regulations or raise funds (Bolding and Zawe, 2004).

Bolding and Zawe (2004) also explain that austerity measures under the Economic Structural Adjustment Programmes triggered a process of IMT by default in Zimbabwe. The withdrawal of subsidies, and the application of water pricing policies transferred the financial burden onto the users. The rapid transfer or devolution of responsibilities took place more or less over night. In the case of pump operated smallholder irrigation schemes, users were unable to afford the high costs associated with operation and maintenance, the schemes subsequently having to be closed down. In South Africa, following the dismantlement of apartheid, the government slowly withdrew from its past functions, which had included service provision, technical advice, extension and training. Infrastructure deficiencies, improper planning and design and poor operational and management structures attributed to the closure of many smallholder irrigation schemes (Perret, 2002).

In the NIA went through a 5 year transition whereby it was required to become a financial autonomous agency, with respect to its operating budget. The NIA redesigned policies to increase the payments from the water users, in large due to the fact that their salary depended on the amount of irrigation fee collected. Originally water distribution was organised by watermasters, gatekeepers and ditchtenders and users responsible for water management at rotational level. Farmers did not accept the mode of operation suggested by NIA, and non-adhering farmer practices caused reductions in yields. Maintenance of larger structures was neglected or deferred by the users because of incapacity to finance these tasks. Therefore while the NIA reduced its cost of management, the operational and maintenance performance of the system suffered with turnover.

Another conundrum facing turnover is the propensity for their 'capture' and control by local elites, at the expense of equity concerns. Narain (2003) describes how on two large scale schemes in India the local elite had the greatest capacity to bribe the Paatkaris (officers) therefore enhancing their access to water flows. Nikku (2002) in his study of participatory management of irrigation in Andhra Pradesh illustrate the way upper caste, village elite, big farmers and political party workers represent the majority of the leadership committee on the WUA. They have direct stakes in water availability and distribution in order to gain better access irrigate their own land. Rather that pursue democratic, accountable and responsive functions for users, the WUA leadership follows its own interests at the expense of equitable water distribution. In a more positive regard, a large number of schemes experienced a period

of crop liberalisation and intensification of cropping intensities. In the Office du Niger in Mali, irrigation reform initiated in the 1980s and ascribed by the deregulation that accompanied SAPs and IMT policies, led to sharp increases in yields, cropping intensities and income. Between 1982 and 2002, rice yields quadrupled, total production has increased sixfold and the system supports a four-times-larger population. New crops were introduced which included an expansion in vegetable production, that were then sold to new markets (Aw and Diemer 2006).

2.3 Conceptual Framework

Below I have engaged and presented a number of key concepts through which I aim to study the processes that occur on Domasi scheme. Irrigation can be analysed in many different ways respective of focus and discipline. For instance, anthropologists like to study the social and cultural interactions between irrigators whereby the sustainability of irrigation is determined as a consequence of these relationships. Organisational consultants place emphasis on the institutional structures, political scientists on the distribution equity of land and water, developmentalists on the implementation of more efficient systems and economists on the financial returns of irrigation farming (van der Zaag, 1992). As this thesis addresses the process of Irrigation Management Transfer from the Malawi government, considered a development administration, to the users on an irrigation scheme, a conceptualisation of the state is therefore needed to set the framework from which further concepts can emerge.

State Control

The free market was considered the best mode for achieving economic development. However this notion applied to private goods only. In the case of collective goods such as irrigation systems, the free market mechanism fails because of the possibility for free riding and impossibility of exclusion (Ostrom, 1992). This prompted the development of highly centralised, hierarchical irrigation bureaucracies emerging with offices at system, provincial, regional and national level. States were expected to intervene in society to create socio-economic development. In developing countries the private sector generally lacks the capital to make investments in irrigation systems (Oorthuizen, 2003). Governments used investments to control and transform citizens, and enforce rule of law. Similarly, the previous single party system of governance in Malawi constructed irrigation schemes in order to transform the peasant into a modern rice producing citizen (Veldwisch et al, 2009) and to modernise agriculture by kickstarting rural economic development (Bolding 2004). In the present day, states and other actors continue to intervene in irrigation development, one example of which is documented in this study. It is therefore important to conceptualise intervention.

Intervention

The conceptualisation of intervention as a discrete activity that is performed in a set period of time and space limits the capacity or avenues by which intervention can be analysed. Rather intervention needs to be analysed as part of a wider framework of flowing events that are affected by both the past and current actions of the state and civil institutions. One explanation for this is because past experiences of intervention are internalized by actors, both interveners and the target groups who then proceed to attribute different meanings that subsequently determines how they respond to future intervention. This serves to justify the narrowness of conventional interventionist modes of operation and analysis, and calls for new approach. Intervention should be observed as a process of adaptation and negotiation and analysed through the recurring social interactions of the users and agency imposing the

change (Long and van der Ploeg, 1989, van der Zaag, 1992). It becomes imperative therefore to study the practices, strategies and organisation of individuals.

Practice, Strategy and Organisation

The physical infrastructure of an irrigation system invokes a series of social processes. Van der Zaag (1992), distinguishes between the benefits accrued by irrigators as a result of investments in irrigation infrastructure, and the co-ordination between individuals that is required to operate the system. The first refers to how investments are generally beyond the capacity of ordinary farmers, and that those who do make the investments hold the power over access to infrastructure. This manifests in inequalities where individuals and groups of users obtain dissimilar access to the resources. The different groups then relate to each other in various ways based on these differences. For instance, differing contexts relative to time and space, determine the actions and practices of individuals. The spatial positioning on a scheme relative to the water source, and the time of day that a user receives his/her irrigation turn can determine access and consequently shape the practices used. To further promote the concept of 'user practices', van der Zaag employs the idea of social interaction, which recognizes how when people meet or interact, unexpected outcomes emerge. Long (1989) uses the term 'interface' to describe the interactions between actors that differ in terms of their access to resources, relationships and cultural background in which they occur. The manner in which these practices are performed and to what ends then constitutes a strategy. Often, strategies are used to gain improved access to the resource or avoid certain responsibilities. The second aspect Van der Zaag distinguishes relates to the way physical infrastructure shapes and influences users and management entities in various ways. And in order to synchronise the actors such that objectives can be reached, an organisational entity is needed. In irrigation reform, this organisational entity becomes responsible for performing certain functions, becoming downwardly accountable to the users. One of the means by which users are allocated responsibility is by way of financial autonomy. I therefore outline the means by which financially autonomous groups are impelled to act in accountable ways.

Accountability Relations

Financial autonomy results when an irrigation management group relies on the fees of users to pay for the costs of the scheme's operation and maintenance tasks, and in the process demonstrate a high degree of expenditure control. Essentially, by granting financial autonomy to a management entity, or in the case of Malawi to farmer associations, irrigation performance improves because the O&M budget is no longer constrained by bureaucratic centralised structures of the state and because managers become more downwardly accountable to users. According to Uphoff (1991), accountability is the degree to which management performance is controlled by the users. On Domasi this would translate in a way such that the irrigators and members of the association transform into consumers of a service and clients of the associations group of leaders. These leaders come to rely on the fees levied from members and therefore sense the importance in providing an adequate service. Consequently the users will observe carefully how their money is used by the managers (Oorthuizen and Kloezen 1995). If the users are unable to produce enough food for subsistence or for sale, they will cease their farming activities and likely cease paying user fees. On the other hand, if the users are able to perceive a link between the maintenance efforts of the local management team and improved scheme performance, they are more likely to continue supporting these activities through user fees. If the economic productivity of their irrigated agriculture improves, users may even be further inclined to pay fees or accept fee increases.

Operation and Maintenance

Sustainability can be defined in a variety of different ways when used in response to alternative global systems or resources that require sustainable use. In terms of overall resource use, sustainability has been ascribed as the condition whereby the resource is replaced at the same rate at which it is used. In irrigation this might translate into something like, irrigation infrastructure is replenished at the same rate it deteriorates. In this way the future generations of irrigators could survive. When it comes to the maintenance of large scale irrigation infrastructure in developing countries by water user groups as part of a process of irrigation privatisation, the concept of sustainability needs to be addressed in response to the local practices. Many of the large scale irrigation schemes built in the colonial and post colonial eras, were designed to correspond with centralised state funded management. Resources for the rehabilitation sourced from wealthy colonial governments and donors. Several mechanisms militate against sustainable maintenance by users. The first addresses how in some instances, fee collection is performed at expense of service provision. Secondly, the of raising of fees is often perceived as highly unpopular by WUA leaders, as it can cost them their post during elections. The last factor concerns the mode by which IMT processes deal with the dimension of ownership of scheme infrastructure. Often this is because the mode of ownership, informs who the responsible party is for structural maintenance. Local users are often largely incapable of financing the rehabilitation or structural maintenance of large pieces of infrastructure, and in addition, they also often lack the technical skills to perform these functions. As a consequence, sustainability of an irrigation scheme must be perceived through the window of user capacity to perform routine maintenance and periodic repair (Murray-Rust and Vermillion 1989, pp.80-84). More specifically this refers to light repair work on conveyance and control structures as well as drainage structures, the repairing of roads, weakened earth bunds and desilting of canals and other structures. Whilst at the same time structural maintenance should be taken care of through state and donor intervention.

Operation of an irrigation scheme generally relates to the distribution and control of water. Distribution relates specifically to the transfer of certain volumes of water from the source, to the users at various locations and at various times. In reality, water is contested both spatially and temporally making equity and efficiency a subjective reality. Therefore I classify equitable distribution as all users gaining sufficient access to quantities of water permitting them to secure a harvest. Consequently, inequitable distribution has occurred when farmer yields are affected negatively, while simultaneously the organising group possessed the capacity to effectively respond with various measures, but failed to do so.

Rational choice, collective action and patron-clientage

If irrigator practices are going to be analysed, individual choice needs also to be addressed. After all, if an individual or group of irrigators adopt a particular coping strategy, noticeable by practices that demonstrate collective action, it is imperative for researchers to know to what extent the rational choice has impacted individual decision making. According to Ostrom (1992) the rational user will not invest in scheme infrastructure, his or her time, energy or financial resource, on individually rational grounds. When a sizeable number of irrigators reason in a similar manner, and avoid investing in corrective action, the improvement to scheme infrastructure becomes negligible. In the instance a considerable number of users invest in resources, and one rational individual does not, that person will benefit from the work of the others at no personal cost. In this way Ostrom reasons that the logical irrigator will decide to do nothing either way. Tailenders in a canal system invariably have less reason to contribute to the upkeep of the system. On this last point, if the system is

small enough, the tailenders may inevitably have a reason to perform maintenance, on the condition that the benefits outweigh the costs.

Ostrom narrates that without the rules and institutions to govern common pool resources such as irrigation schemes, the resource becomes undersupplied and worn-out. Water that runs through the canals of an irrigation system can be defined as a common pool resource, as it can be used by more than one individual at any one time, and because the water is subtractable. Therefore when water is scarce, conflict and yield reductions result (Wade, 1987, p.96). Rice is intolerant to drying and by keeping a paddy permanently flooded, weed growth can be controlled more easily. Hence there is a propensity for abstracting more water than is authorised or actually needed. On large centrally built irrigation schemes, selfish headenders with greater access to available water supplies, disregard the shortage of water they cause for those lower down in the system. Academics have supposed that users are in fact locked into this system, unable to create the rules necessary to manage the resource effectively. However the notion that users are unable to manage the fair and equitable use of the resource on their own was challenged, with much evidence signifying users are capable of creating institutions to manage the resource in a sustainable way. Ostrom (1992; 2005) argues that users can craft institutions that can safely and effectively manage resource use in a sustainable way and presents eight design principles that account stable local common pool resource management. They are presented in bullet version below.

1. Clearly defined boundaries (effective exclusion of external unentitled parties);
2. Rules regarding the appropriation and provision of common resources are adapted to local conditions;
3. Collective-choice arrangements allow most resource appropriators to participate in the decision-making process;
4. Effective monitoring by monitors who are part of or accountable to the appropriators;
5. There is a scale of graduated sanctions for resource appropriators who violate community rules;
6. Mechanisms of conflict resolution are cheap and of easy access;
7. The self-determination of the community is recognized by higher-level authorities;
8. In the case of larger common-pool resources: organization in the form of multiple layers of nested enterprises, with small local CPRs at the base level.

While Ostrom's design principles offer a practical means by which farmer managed irrigation systems can be assessed, the elements do not fully account for some of the causal relations between certain phenomena. One major factor is the propensity for institutional 'capture' and control by local elites, at the expense of equity concerns. In such instances, 'patronage' may better explain the actions of farmers, vis-a-vis their leaders. It is common in neo-patrimonial societies like Malawi to find relationships informed on the basis of patron-client relations. It may be particularly helpful to conceptualise patron-clientage as a means through which relationships on the scheme are informed. Eisenstadt and Roniger (1980) reveal several core analytical characteristics of patron client relationships. For instance, in patron-clientage, loyalty is expressed along vertical lines at the expense of horizontal solidarity, the exchange of different resources occurs over a medium of asymmetry in power and relations are not fully contractual but built on informal yet tightly binding understandings (Wellman and Berkowitz, 1988, p.199).

2.4 Research Questions

The main research question is as follows:

What strategies and practices do key actors (WUA leadership, Domasi irrigators, and government representatives) on Domasi irrigation scheme apply during the presently unfolding process of IMT?; to what outcomes do their actions lead in terms of the IMT aims of equitable water distribution, sustainable maintenance and accountable governance?; and which analytical frame may explain these outcomes?

The sub questions are as follows:

1. To what extent has external intervention on Domasi informed the current WUA setup and how did these work in practice?
2. Are WUA elections about operational performance and democratic accountability? Which types of authority contest the elections and by which means do they do this?
3. In what ways does the WUA organise activities for routine maintenance? Are the methods cost effective and do they keep the infrastructure in an operational state?
4. How does the WUA arrange water distribution in the face of water scarcity and how successful are the mechanisms that it employs?
5. In what ways does land tenure, leadership and rice marketing inform the local management style and to what extent do the local elite capture the WUA?

2.5 Research Methodology

Research Strategy

I have carried out a type of micro ethnography (Walcott, 2001), in that my research was short by ethnographic standards, and the focus has been relatively narrow and confined to finding information relating to a set of questions. I use a technographic approach to analyse the technology (scheme), its society of users and the mode in which the technology is used (Bolding, 2004, p.112). Rather than study irrigation along the lines of separate disciplines, I have used an interdisciplinary approach to study the scheme and its actors. The strategy used to obtain information from various actors resembled the emerging theory approach. I collected information, and then based on the richness and availability of this information; I made choices over where I should seek further knowledge. If knowledge gained was significant in the face of my research aims, I tried to ‘densify (these) categories in terms of their properties and dimensions’ (Strauss and Corbin, 1998, p.201). I would do this through a process of validation, posing the same information to different informants, and determining whether their responses ‘fit in’ with others. This had the effect of conforming or authenticating pieces of information. I especially found this method useful during the WUA elections, where I found many actors had their own interpretation on certain events. When information leads lacked enough significance relative to the research aims, and the point of ‘theoretical saturation’ (Bryman, 2004, p.305) reached, I would follow a different information trail. Conventional perspectives model irrigation management along Weberian lines of thinking in functional and formal terms (Oorthuizen, 2003, p.8). There is need for a more embedded approach towards understanding irrigation management. I have adopted an actor oriented approach towards understanding irrigation management on Domasi. I try to understand their life-world, values and motivations to assist in the understanding the complex environment of irrigation management (Long 1989). I attempt to observe how the users and leaders give meaning to IMT, how they embrace, adapt, resist or disregard particular aspects (Oorthuizen, 2003, p.21).

I decided to focus the research on one scheme so as to gain detailed and comprehensive understanding over the way reform is taking place. Domasi scheme was chosen for two reasons. Firstly Domasi scheme is considered as somewhat of a success story in terms of IMT by donors and government. It gave me the opportunity to study the effects of management turnover on a scheme that was supposedly an example case of turnover. A deeper study on real life problems in the life-worlds of people in one setting offered a window through which irrigation management transfer could be better understood. Secondly, a three year comparative study on Domasi and one other scheme in 2003², meant that Domasi was one of the relatively better studied schemes in Malawi. The study offered a useful background understanding of the scheme and past processes.

Research Techniques

A large majority of the insights gained in this study was derived from a few key informants. These persons were pivotal in helping me understand more discreet activities and practices employed by various members. Several arenas provided a medium through which various actors and situations were explored. Instructive information was realised from actors in rival alliances and careful attention was required to peacefully manoeuvre between the different sides. The techniques employed to collect the information during the research are described in detail below.

- Informal and semi informal interviews

Semi-informal and informal interviews was the most frequently used means of gathering information from various actors and settings. The method changed depending on the person, context and preparation time for the interview. Informal interviews were most regular, and held with irrigators, water guards, local non-irrigators and WUA committee members. Semi-formal interviews were done with individuals that I presumed had knowledge on specific issues and could therefore provide deeper level of understanding. These included government officials both local and national, local experts, community leaders, and staff from the WUA executive committee. No formal interviews or questionnaires were done as I felt this method lacked the flexibility needed to get at deeper and more complex issues.

- Observations

Gans (1968, p.303) devised a classification of three observer roles, total participant, researcher participant and total researcher. I categorise my role as a 'researcher participant' as I participated in affairs to the extent a researcher would need to, to obtain a required degree of information. This role allowed me to function fully as a researcher and allowed for a degree of flexibility. In some instances, the use of structured observation was applied to record as much detail as possible during certain events. Behavioural observations were rather limited in this study. This was essentially due to the nature of the research I was carrying out. In some instances, behaviour was recorded, not as an end in itself, but rather to support observations and other findings.

- Water flow measurements

Over a 52-day period which stretched from 29th September to the 20th November of 2009 the flow rates in the main canal were measured. This was done on the main canal approximately halfway between the offtake and scheme. I was able to measure the quantity of water flowing onto the scheme and assess the extent of the reduction in water levels over time. No measuring equipment was available so an approximation technique was used. A partly submerged bottle was used as the floatation object, which was dropped into the canal and

² Study by A. Ferguson and W. Mulwafu on Domasi and Likangala irrigation schemes

timed by stopwatch over a set distance of 20 meters. The measurement was done several times to obtain the average flow velocity. The dimensions of the canal and water height were measured using a tape measure. The Manning equation for trapezoidal shaped canal cross section was used to calculate the canal discharge.

Accessibility Issues

The social situations in the scheme offered varying degrees of accessibility. Some settings were accessed quite freely, and I was able to make observations with little to no resistance on the part of the actors. The scheme, the farmers and their day to day farming activities, were the most accessible areas for observation. WUA meetings presented useful opportunities to observe actors, how they function and collect information in relation to current affairs. Meetings were diverse, coming in the form of social gatherings, general assemblies, small farmer meetings, block leader meetings, electoral meetings, committee and executive committee meetings and visitor meetings. The constant frequency of these events over the course of the research period provided many useful opportunities to discover the cultural rules of behaviour. These events were also easier to participate in, as I was often aware when they would occur and what they would concern. There were other settings that were less accessible, if not impossible to enter. Some high ranked meetings amongst executive members of staff were confidential and no access was permitted. Larger gatherings of block leaders and irrigators were more accessible due in a large part to their un-confidential nature. Some meetings required a small degree of permission and I was often invited to join these. Some actors were quite conversant in English and therefore translation was not needed. In these cases I was able to converse more freely and gain direct and deeper understanding of certain issues. The use of a hired local interpreter was necessary in situations where Chewa was spoken. The local interpreter was a 26 year old male farmer and resident in the area. He became a useful source of knowledge on many issues associated with the study.

Sampling, Data Recording and Analysis

Many situations on the scheme offered repeated similar entry points for observation thereby offering a greater opportunity for more detailed observations. These included meetings in the WUA meeting room, and water distribution activities done by the water guards. My research was made operational through four questions, which in the majority of situations were researched in spatially recognisable areas. Smallholder strategies and practices in response to water distribution were observed on the scheme around the physical flow of water. Maintenance activities could be observed on scheme infrastructure and was informed more by the position of the labour groups. WUA staff and administrative functions were directly observable in situations like meetings.

I visited the scheme a total of 38 times, over a period of 3 months. I stayed approximately 15 km due west of the scheme, 2 km from the M3 main road which connects the Zomba area to the central and southern regions. I stayed at a guesthouse belonging to the Malawi Institute of Education located in Domasi town. It was located in a very quiet wooded area in the residential portion of the institute grounds. The location of the institute is close to Domasi prison, and prisoners dressed in white shorts and shirts were very noticeable while working in nearby fields and gardens. I travelled to the scheme on a Honda DT 125CC motorbike that was rented from an electrician working at the institute. A good graded gravel road made it possible to travel to the scheme each day in less than 20 minutes.

Two daily intervals afforded the best opportunity to observe irrigation activities. The first was in the early morning hours starting from when the sun rose, and ended mid morning when temperatures climbed and farmers sought shade and rest. There was then a 4-6 hour gap

before farmers continued their activities in the late afternoon up until daylight ended. I would either make a visit for the morning period or the afternoon depending on what activities were taking place at the scheme. If I went to the scheme in the morning I would return to the guesthouse around midday. Detailed notes were made in a field notebook and then later transcribed onto computer in a coherent augmented language that I felt expressed and constituted the cultural scene or event. The notes were organised into day reports. There were several times when I spent the whole day at the scheme. When this occurred I found that I needed to either transcribe data that same night or wait till the following day. I made an effort to find a balance between description and interpretation making an emphasis on the verbatim principle, writing down as many concrete descriptions as possible. Power cuts were a regular occurrence in Domasi town. The power would quite frequently go off at 6pm for approximately 1-2 hours. However this was by no means consistent, and there were frequent power cuts at other times too. The field data that was collected consisted of daily reports of various lengths. A process of coding was used to bunch data into respective fields of knowledge reflecting certain processes. These assemblages then formed the basis for start of my thesis writing.

3 The Water Users Association

3.1 IFAD intervention

The first part of this chapter deals with the objectives under the IFAD intervention. I describe the trainings given to users in order to equip them with the necessary skills and knowledge to function as autonomous associations. Based on various accounts and project documents, I explain the interruptions and obstacles which the programme encountered and the recognition for the need of further support under IRLADP. The original IMT organisational arrangements are described after which the transformations to those original structures are discussed and possible explanations considered. I then attempt to portray the relationship between the local government and the WUA, and how this informs working ties and the dealings in response to a water abstraction bill. To conclude, I deduce some of the principles and causation for the resulting organisational adjustments.

Formation of the Association

A previous comparative study on Domasi and Likangala schemes from 2003 by researchers Anne E. Ferguson and Wapulumuka O. Mulwafu was useful in providing insight and accounts into early WUA formation. Two interviews with Henrie Njoloma a local irrigation expert and Joseph Chisenga³, director of the Irrigation and Water Management Unit for the IRLAD project, assisted my understanding over some of the early intervention that was carried out at Domasi scheme. Interviews with members on the scheme have also provided information about some of the early IMT intervention that occurred. The differences between a co-operative and an association both in legal and operational terms was described to farmers at the start of the process. Officials provided all the pros and cons for each and then asked the users to decide the format they wanted (SFPDP, 2001, p.17). Unlike a cooperative society where farmers operate on shares, an association presented them with the advantage of exercising their autonomy and equal opportunities (Nkhoma and Mulwafu, 2004, p.1330). After formation of the association, from January 2002, Concern Universal (CU) together with farmers set out to form a constitution in order to guide the operations of the WUA. Unfortunately, drafting the document progressed rather slowly due to poor participation in by farmers in meetings. The timing of the activity coincided with peak farming demands. The constitution was eventually endorsed in January 2003, one whole year later (Nkhoma and Mulwafu, 2004, p.1330). Concern Universal continued to train farmers on the nature and operations of the management entity, and rehabilitation of structures such as canals, bridges, and roads. As part of the formation of DWUA, democratically elected leaders and local government extension staff were given trainings that followed a series of modules following three distinct steps. The first step involved organisational development training whereby legal aspects were dealt with, such as the preparation of a constitution and the creation of by-laws. In the second phase, empowerment training stipulated the roles and responsibilities of the various members and trainings in administration and finance was provided. The third and last stage in the process involved operationalising the WUA. Here the WUA was qualified in performing its core technical functions. This included receiving training in O&M, water management, and some features related to agriculture and agribusiness.

³ Semi structured interview with Joseph Chisenga, Director Irrigation and Water Management Unit IRLADP, 24.09.09 in Lilongwe

Early Setbacks

Ferguson and Mulwafu (2005, p.8) describe how the ‘Training Of the Trainers’ (TOT) model had been ineffective, the selected leaders failing to pass on their knowledge and skills to other farmers. The trained members had expected compensation for their efforts, and when this did not materialise they declined to pass on their knowledge to others. The WUA president acknowledged that they had received trainings on different aspects including water management, contract management, communication, marketing, finance and health, however made no reference to TOT shortfalls. He remarked positively stating that the project had assisted the WUA to gain a sense of unity. He confidently declared to me during an interview that anyone doubting the WUA’s ability to manage the scheme should enter onto the scheme to see for themselves: *“We have done maintenance on secondary canals, we have labourers working at the headworks, roads have been maintained. We did this through what we learnt”* (president, 27.10.09).

Rehabilitation and Handover

Money for the rehabilitation works prior to handover had been available from the mid-nineties. The works which begun in the year 2000, required that farmers participate and contribute with their own resources. So while government offered cement, bricks and money for local builders, the farmers were tasked with clearing roads and canals (Nkhoma and Mulwafu, 2004, p.1331). While the WUA president made no reference to shortfalls in capacity support, he made references to difficulties in rehabilitative support. Some aspects of rehabilitation works had been promised and not followed through according to him. The president said the project had started very well, but then ended poorly. He explained that the WUA members had prepared the sand and stones to help rehabilitate several sheds, but the project staff failed to support the activity the way they had promised. *“The gate at the headworks was not maintained and only 10 out of 20 secondary gates were repaired. They promised 350 meters of cement lining on the main canal, but that was never done”* (27.10.09). The WUA had asked the project to repair the secondary canals. They had prepared all the necessary materials such as sand, stones and bricks, with the exception of cement. After all this effort, contractors arrived and advised the WUA to cease their activities, as the project would not be in a position to assist them any further. IRLADP Director Joseph Chisenga explained that farmers had assumed more support than had actually been planned. Farmers had understood what was meant as prospective support to be the actual support planned under the project. *“Farmers were given the opportunity to put forward their requests, and they were always for complete lining. When the reaction was positive from whoever was visiting farmers would assume that as an agreement”*. Implementation works were delayed several times. *“Cost escalations as a result of devaluation of the kwacha, meant we could do less work with what we had. There was a tendency for goal shifting. As a result work promised in 2000 may have only been carried out several years after the original planned date of execution. However if you look at the original agreement of the works we were to do at Domasi, you will find that.... 95% of the works were done”* (Chisenga, 24.09.09). Ferguson and Mulwafu (2005, p.8) confirm that rehabilitation under the project proceeded slowly due to amongst other complications, funding and supply delays, missing inputs, heavy rains and farmers reluctance for the provision of labour. In October 1999, emergency repairs on the weir, intake and several other installations was delayed for some time, because equipment was diverted to construct a flood protection embankment, an activity which was not programmed. Eventually programmed earthworks and repairs to the weir were performed before February of 2000. Further work was postponed due to conflicts between farmer groups. Several meetings were had and soon the disputes were resolved. Domasi was not part of the priority schemes list, and therefore further rehabilitation was

postponed to the dry season of 2001 (AHT, 2001). Initially scheduled for handover by 31st December 2002, this deadline was extended to 1 September 2003 (Nkhoma and Mulwafu, 2004, p.1331).

IRLADP Support

Chisenga explained that the WUAs were empowered with various training exercises, however when SFPDP closed in 2006, aspects such as O&M, water management and crop production had not been fully addressed. The IRLAD project would address these aspects and should be of great benefit to the farmers Chisenga added. This view was supported by several other individuals. The Senior Assistant Agricultural Research Officer (SAARO)⁴ said water management training would make up a valuable component in future support. The District Irrigation Officer⁵ (DIO) explained that the IRLAD project had committed itself to the scheme by way of capacity building support. The project was waiting for the WUA to hold elections so it could begin training the new association. As the association had not held a successful election since its inception in 2001, the project was cautious about starting to train a committee that was illegal or soon to be replaced in the event an election did take place. Another leader⁶ commented that the association welcomed the IRLADP support, but hoped and expected them not to interfere in aspects were not part of their responsibility (Informant, 22.10.09).

3.2 Organisational Setup and Evolution

Executive committee members were elected in a one man one vote system on 12 March 2000. Nine management committees were established namely; an executive committee and eight sub-committees: discipline, agriculture, health, irrigation, finance, auditing, marketing, and natural resources. The executive committee was composed of a chairman or president, vice-chairman, a treasurer and several popular representatives voted in by the members. Figure 3.1 shows the original structure of Domasi WUA according to the constitution.

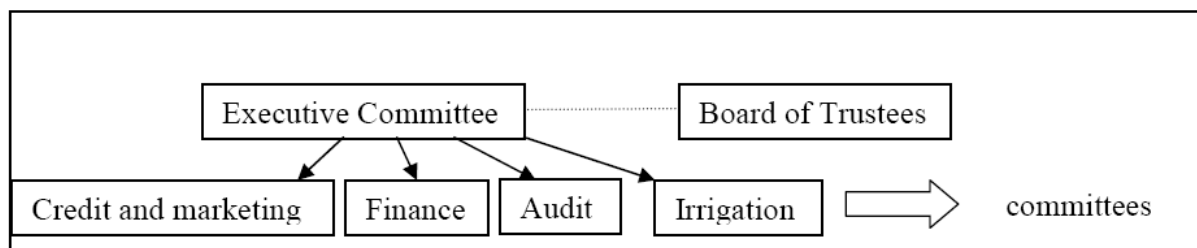


Figure 3.1: Previous organisational structure of Domasi WUA

Ferguson and Mulwafu (2005) reveal the high number of irrigators that were unable to distinguish between the newly formed WUA and the old SMC. There is a striking similarity between the SMC structure and the newly adopted WUA format. SMCs operated through various other committees such as the irrigation committee, agricultural committee, credit and marketing committee, finance, afforestation, and discipline committees (IRLADP, 2005, p.26). Three of these, namely the irrigation, credit and marketing and finance committees were maintained in the new association with the same names. As a result, many farmers believed that DWUA was merely the new name for the SMC. Another reason may have been the close resemblance between elected staff on the WUA executive body and the previous representation on the SMC. An expert in irrigation for Malawi explained that Domasi scheme already had a farmer organisation in place at the time of transfer and said the transition did

⁴ Semi structured interview with Ronald Hassan the Senior Assistant Agricultural Research Officer on 08.10.09

⁵ Informal interview with District Irrigation Officer at the District Agricultural Office in Ntaja on 05.10.09

not come as a complete makeover⁷. Chisenga (24.09.09) confirmed this adding that the SMCs were used as a stepping stone for the creation of the WUAs, not just on Domasi, but also at other schemes. Several WUA committee members had attained their current position on the WUA as a direct result of their influential role on the old SMC.

The exact date the WUA became official on paper under the state law was delayed twice. Initially transfer was slated for 30 December 2002, and then again for 30 September 2003 (Ferguson and Mulwafu, 2007, p.220). It was only on the 26th February 2004 when the application for incorporation and registration of the new WUA was signed by a senior resident magistrate in the country. Willbrink⁸ (2009) explains the DWUA organisational structural change that took place in 2005 (see fig 3.2). The credit and marketing committee was dropped and Health, Agricultural and Environmental Committees were introduced into the structure. In place of the previous Irrigation Committee, an O&M committee was established with three sub committees namely the Main, Secondary and Tertiary canal committees. Blocks are composed of water users of tertiary canals, and are responsible for mobilizing farmers for canal maintenance and other activities such as planting and weeding. The block committees are responsible for the operation and maintenance of the secondary canals. Each block leader is a member of the block committee and represents its members' interest on the committee. Information gathered at the scheme from various ranked staff, provided the following organisational structure and representation.

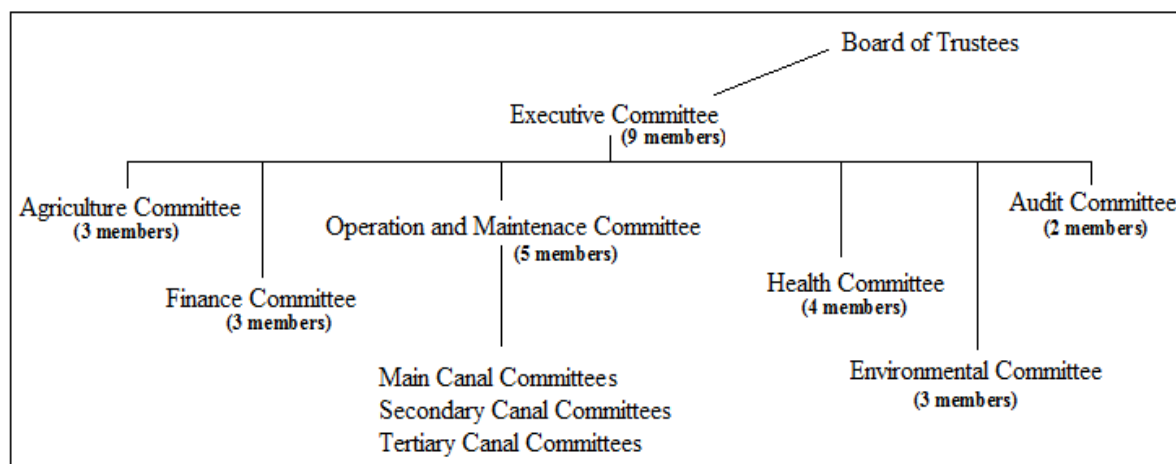


Figure 3.2: Organogram of DWUA post 2005 change

During the study, apart from the executive committee, none of the other committees appeared to operate as autonomous entities. In some instances, one member (sometimes more) performed a function resembling the objective of a particular committee. For instance, I the finance chairman appeared to be the sole operator and representative of the finance committee. In some instances position did not match work role. Such was the case whereby health committee members could be seen supervising temporary labour activities, but could not be observed carrying out duties related to health. The audit and agricultural committees appeared dormant or completely empty. The board of trustees, was originally composed of three members, now only one was apparently active⁹. According to several members, the majority of staff had either dropped out due to lack of financial incentives or because there was nothing for them to do. *“The WUA was in power for 9 years. That is a long time. After a*

⁷ Semi structured interview with irrigation expert Henrie Njoloma in Lilongwe on 02.11.09

⁸ Wageningen University bachelor student Richard Willbrink, carried out part of thesis research on Domasi scheme (2009).

⁹ The extent to which this sole trustee performed the task of overseeing the proper functioning of the association's activities was not certain.

while, members from various committees lost interest” (informant, 28.09.2009). The executive committee was the strongest and most distinctly obvious group but even it had shrunk. “There are only 5 members left in the executive committee. In 2001 the executive committee was full. The members left as they thought they were going to receive a salary or wages” (same informant). The finance committee was the only committee that worked, one reason being that the members were always busy.

The idea that these individuals are working for free as ‘volunteers’ in the association is highly debatable. The constitution is silent on the issue of compensation for work in the WUA. The constitution (page 12) does state however that the executive committee must ‘formulate and implement rules and regulations for the management of the affairs of the Association...’. This is vague and does not elucidate how members are actually compensated. One way members receive compensation is through a type of ‘insurance’. *“There are some incentives in being a member of a committee. The WUA gives assistance to members who come into trouble... if a member is sick, and needs to pay hospital or medical fees... or if a close relative to a member is sick, they can ask (the president) for support” (informant, 20.11.09).* The undefined nature of these particular incentives made it difficult to assess or observe them. The incentive was not a consistent one time exchange, rather a heterogeneous mix of exchanges that varied from one person to the next and between contexts. I assume that the nature of the relationship between staff members serves to inform the exchanges that take place between them.

3.3 Local Government

The Contingent

The four districts Machinga, Zomba, Balaka, and Mangochi make up Machinga ADD. Domasi Extension Planning Area (EPA) is one of 8 EPAs making up Machinga District. It was formed in 2001 as a result of shifting political boundaries, and today the old government scheme buildings function as the government EPA headquarters as well offices for the WUA. Heading the EPA contingent is an Agricultural Extension Development Co-ordinator (AEDC) the head representative for the EPA which manages the government extension services for Domasi EPA. The AEDC had occupied a posting in nearby Ngumbu EPA for 12 years, and seeking a new challenge, had transferred to Domasi EPA one month prior to the start of my research. He and his family had moved into the government house that had been occupied by the previous AEDC. Most government housing at the scheme is still occupied by active or retired government personnel. At his previous posting the AEDC had gained experience working on two smaller schemes Mikoko (150ha) and Namingazi (40ha). Flanking the AEDC are several other staff. An Agricultural Extension Development Officer (AEDO), a government section supervisor, the SAARO, an irrigation and extension supervisor and several other lower ranked EPA officers form the remainder of the government contingent. The SAARO is in his 33rd year as a government crop research officer. He was positioned on Domasi scheme by the government as a one man station in 1998. He transferred from Lifuwe Agricultural Research Station based in Salima, a town in the central region of the country. His main role is to assist the scheme with seed multiplication and carry out crop research. For this purpose, he uses 8 plots in block A during the rainy season to carry out trials, undertaking research on plant pathology, breeding, and agronomy.

Government and WUA: Working Together

The EPA staff and WUA staff co-exist in a peaceful and respectful manner. While organisationally the WUA administration is larger than the EPA and economically stronger, having access to a greater financial resource, the WUA occupies a space inside the EPA

government owned office block. The EPA staff carry out their own objectives and daily affairs, and generally leave the WUA to function on its own. The EPA does not have any particular focus on the scheme itself, focussing on rainfed upland farming communities instead. While at the outset, functions and responsibilities between the two groups differ, there are certain practices from the past SMC years that continue. During the time of the SMC it was customary for the local government, District Agricultural Development Officer (DADO), local chiefs and political leaders to supervise elections. This was certainly the case during the run up to the elections that took place during my study. The AEDC and other local staff members took responsibility for organising a large part of the electoral process. They formed the electoral committee by calling upon nearby local government officers to attend and witness the elections as well as perform duties such as vote counting. One needs an impartial overseeing body, a role that suits the government officials. Similarly, in the event of major conflict between the WUA and some of its members, the government would likely be called in to arbitrate. The EPA also takes on the role of local watchdog, communicating the WUA state of affairs to more senior government departments.

The Water Permit

On the 10th of November 2005 a letter titled ‘New Surface Water Right’¹⁰ and a grant certificate¹¹ for water abstraction from the Domasi river, signed by the chairman of the Water Resources Board based in the capital city Lilongwe, arrived at the DWUA office. Referring to a maximum daily abstraction quantity of 187,960 cubic metres the grant asked for the payment of 171,513.50 kwacha (~1153 EUR) to be paid annually to the government of Malawi. The amount was equivalent to more than half the amount payable to the WUA in annual plot fees for the year 2005. According to the local government crop researcher, the bill had only arrived six months prior. The WUA president told that they had not paid the bill because there was no basis for the charged amount. “*They had no way of telling us what amount of water we had used. They went away saying they would return, but till now they have not come back*” (President, 14.11.09). The SAARO said he was shown the bill by the president and he then advised the WUA not to pay the amount until it was clear on what grounds the bill was made. He argued that water was also being extracted up stream at Domasi Prison and the World Fish Centre, and that he wanted to know first whether these other users were also being charged for water. Since the bill was presented the officers in charge have not returned to the scheme. WUAs sit at the bottom of Malawi’s water resources management organization, with the Ministry for Water Development and National Water Resources Board responsible for overall strategy at the top, followed by Catchment Management Authorities (Nkhoma and Mulwafu, 2004, p.1331). The IRLAD project appraisal report reads ‘...the use of water for irrigation and withdrawal from the rivers and streams requires an official permit from the Ministry of Water Resources’. The report admits that by 2004, no scheme had attempted to obtain one. The report also states that WUAs will be ‘assisted and guided to apply for water abstraction rights in accordance to established laws and regulations...’ and ‘...water requirements and abstraction rates would be established during the planning and design phase’ (IRLADP, 2005, p.29).

3.4 Conclusions

The chapter deals more or less with the WUA’s Organisational setup and the intervention from IFAD through the SFPDP, to create a formal organisation. Policy prescriptions in the field of irrigation management tend to place trust in formal organisational structures such as meetings, elections, or formal structures of accounting. While these are publicly and lawfully

¹⁰ See appendix

¹¹ See appendix

represented formal water user' association, composed of committees and individual responsibilities, in reality these recognized structures are almost impossible to observe. Almost immediately it is evident the users have altered the imposed formal rules and adapted them in various ways to suit the local working conditions. Irrigation managers are required to continuously adjust to shifting circumstances and tactically manoeuvre new situations. They cannot adhere to formal systems and sets of laws that are prescribed in operational plans, for this is unrealistic and not related to the working context (Oorthuizen, 2003).

Ideally, there is sufficient work for all committee members to perform on a daily basis. In reality what happens in Domasi is work allocation based on availability. The committees were established at the transfer mark, with roles and responsibilities divided up between various members. These structures were not based on real demand, and soon crumbled barely leaving a trace of the original IMT imposed form. The IMT imposed arrangements have given way to a leaner, more efficient and financially viable demand based organisation of people. What one finds now on Domasi is a collection of individuals fulfilling real and needed functions, creating in essence a responsibility vacuum, whereby some members have secured a job, while others have not.

Incentives for work on the WUA was difficult to define. As explained, the nature of the incentive was variable and altered depending on the individual and circumstance. The nature of the relationship between staff members served to inform the exchanges that take place between them. While Vermillion (1991, p.28) argues that work incentives can sometimes emerge in the form of irregular incentives, I find the nature of the exchanges can better be described in the form of a patron-client exchange. The incentives differ from one another, are expressed along vertical lines (i.e. from president down to lower ranked committee staff) and built on informal understandings. These are all indicative of patron client relations, however the degree by which the president assumes role of patron or similarly the extent by which WUA workers adopt a client role is not clear. On an implicit level, the arrangements rather than presenting a new organisation of sorts, could better be seen as a model that structures the flow of resources, exchanges and interaction between workers and the president (Eisenstadt and Roniger, 1980, in Wellman and Berkowitz, 1988, p.199)

In chapter one I described the new institutional landscape in Malawi responsible for implementing the water pricing mechanism which is likely the source for the water abstraction bill that arrived at the doorstep of the WUA. Members on the WUA as well as local government officers had no knowledge of what the basis was for such a bill. In many cases of neo-liberal water policy, there is much discourse over user participation and catchment integrated planning. When policies are endorsed and signed into law, often synonymous with the formation of a new institution, water bills are sent out without any form of participation, integration or decision making diplomacy on the part of the actual water users.

4 The WUA Elections

The following chapter studies and analyses a situational analysis of power relations through the study of one critical event: the WUA elections. In essence the chapter reveals the struggle for the control between the users association and the TA, with the government playing the role of an impartial arbitrator. I then describe a series of events that involve two failed elections and one successful election. I analyse how the differing authorities try to use various strategies such as speech acts, to gain the upper hand in a struggle for power. It is important to first define how the relationship between land control and management control on irrigation schemes in Malawi has played out in the past.

4.1 Customary Land Claims

During the period of Banda rule, the GOM changed customary land into public land under the Customary Land (Development) Act of 1967. The Act essentially authorized the minister responsible for lands to declare a particular area a 'development area' (Kishindo, 1996, p.2). Once so affirmed, the customary land was turned into public land. The power of customary holders of this land ceased, and the responsibility of the land transferred to the government. Those who occupied pieces of such land became the tenants of the state (Chirwa, 2002, p.311). Pauline Peters (2007) has documented how TAs in Malawi returned after democracy and started to reclaim the land within these development areas. The TA could argue that the land was theirs originally, that they were the true custodians placing ancestral claims on the land. Post democratic change in Malawi, some LACs and SMCs ruled against these reclamations by traditional powers, using the argument that in fact the scheme still belonged to the government and was still slated as public land.

Under Banda, land control was alienated from the existing TAs to facilitate managerial control over the scheme's potholders in the hands of a government expert: the scheme manager. TAs were not given any say over land allocation or management control. The scheme managers were the rule makers and they could evict anyone that did not abide by certain rules. They wanted and needed to exclude any influence of the TA who could sit between or intervene in the decision making. Irrigation schemes became islands that fell directly under government control, where managers could evict and appoint plot holders on a whim. Under Muluzi, when the scheme's regulations were relaxed, TAs and other forms of authority (absent businessmen from nearby towns) started to fight over the scheme's control in the SMCs. Ever since government embarked on a process of IMT, the newly constituted WUA, has been conceived as the new entity in control over land, leased to them. All training on WUA leadership is geared towards that and the TAs are explicitly meant to stay out of land control issues. However, since the TA is a legitimate authority in other spheres of interest (they do have control over rain-fed land, they are responsible for governance at village level), they become co-opted as soon as land related conflicts emerge, precisely with the aim to prevent a rival scheme authority from emerging.

Recently in the new liberal land and water laws, the GOM has accorded a larger role to the TAs, due to the realisation that there is a higher likelihood of success if TAs are part of the process. Under the Local Government Act and Decentralization Policy, chiefs were given identified roles in local administration and ex officio status on district assemblies (Ferguson and Mulwafu, 2007, p.216). Within the context of irrigation development and WUA functioning, the WUA leaders recognise the influence that traditional leaders have, and by providing chiefs with advisory or ex-officio roles in WUA affairs, the farmer managers are able to govern the scheme more effectively. Many government programs like IFAD view the

TA as being an obstacle towards development and corporate performance however, due partly to the fact that chiefs prefer to take care of their own needs before those of others.

4.2 The Actors

The actors that took part either directly or indirectly in the lead up to the election event are presented below. GVH Mpheta whom resides in Mpheta village situated on the eastern boundary of the scheme was largely

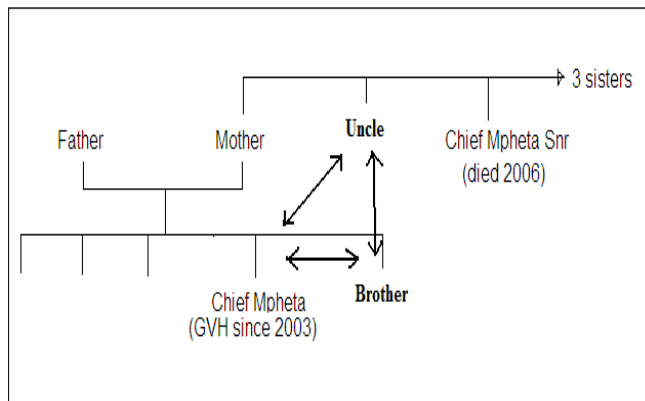


Figure 4.1: A genealogical section of the chief's family

involved in the events that follow. TA Kawinga, directed by SGVH Kawinga who resides in a nearby town was also implicated in the lead up to the elections. Two relations to GVH Mpheta, a brother and an uncle form a small rival faction and influence the events that took place quite significantly. Their relationship¹² to the GVH and their position in the family is shown in figure 4.1. The majority of WUA members were involved by participating in the election voting. The

current leaders were greatly involved, the majority of whom were re-elected into the new administration. The president was the main actor representing the association and the first point of call for TA leaders and government officials alike. The main actors from the government were an assistant DADO whom I visited in Ntaja, a town in Machinga district and home of the District Agricultural Office (DAO). The main government representative at EPA level was the AEDC, in charge of the EPA office, and residing at the scheme itself. He was flanked by 3-4 other lower ranked officers, all of whom contributed to organising and arbitrating the election proceedings. Present at the elections was an MP for Southern Machinga District, several officers from the Ministry of Health and Forestry at EPA level, a Food and Nutrition Officer, an extension officer representing the DADO at the elections.

4.3 The Elections

The 1st Election Attempt on May 26th

The origins for the May 2009 elections was not determined. The WUA had not held elections in the 9-10 years since its inception and pressure from outside forces were perhaps growing too strong. The IRLAD project was supposedly waiting for the WUA to organise and hold elections, before it would commence its programme of capacity building with them. Irrespective however, on May 26th elections were cancelled. The assistant DADO said that prior to his arrival in order to administer election proceedings, he had known that that something was not right. *“I had already received a letter from GVH Mpheta, and so I knew there were going to be problems. In the end, the local leaders were not present so we cancelled the elections”* (05.10.09). The elections were boycotted by the chiefs because the current administration had tried to influence the outcome of the elections. The WUA leaders had organised a campaign in the two weeks prior to the election date. They had apparently made use of WUA funds in order to buy member's votes. Farmers had been given gifts in the form of beers and other items. One informant stated that *“the WUA T-shirts with the logo were given to block leaders during the campaign. These shirts were purchased without the*

¹² In order to protect the names of these individuals they have been referred to as 'brother' and 'uncle' in response to their relationship with the chief.

knowledge of the members” (uncle to GVH, 15.09.09). Prior to the government departing that same day, government officials had handed GVH Mpheta the responsibility for dealing with current election troubles and arranging new elections.

The 2nd Election Attempt on October 20th

An informant described that a new WUA election was scheduled for the end of the month and that very soon a campaign led by the current leaders would begin. He told how the campaign had been organised and carried out. *“The president organised 25 to 30 leaders and they are divided into 5 smaller groups. These groups then campaigned over 5 days last week. Last Sunday we campaigned in Chidothi village, with 53 farmers and 2 chiefs present. Others groups campaigned in Nasongole village. The Namasalima area is composed of between 11 and 13 villages and campaigning was done here by splitting into four groups. At the campaigns we go around telling people that the president is loyal and trustworthy and that he should be voted for, and explain that the other candidates are no good and that they grab people’s plots”* (Informant, 28.09.09). I learnt that the general elections would be used to elect the executive committee only and that soon after smaller internal elections would be held whereby the WUA would decide who would occupy positions in the sub-committees.

The day prior to the elections, the brother to GVH Mpheta told of his disagreement with some of the recent actions of his brother the GVH. According to him, the chief had acted inappropriately by liaising with the DADO over the instigation of elections, without first informing or consulting the smaller chiefs in the area. He said that earlier that day he had travelled to the home of the SGVH to complain about the actions of the GVH. In response to the visit the SGVH had written a letter and copied it to the DO, the DADO, the WUA president and GVH Mpheta. Translated from Chewa it read: UPON HEARING COMPLAINTS FROM PEOPLE, I HAVE DECIDED THE ELECTIONS HAVE TO BE POSTPONED TILL FURTHER NOTICE. ON THIS DAY AS SENIOR CHIEF KAWINGA I WILL HOLD DISCUSSIONS WITH YOU. DATE: 10TH OCTOBER 2009, 8.30AM, AT THE GVH MPHETA HEADQUARTERS. (Letter, 28.09.2009). The very next morning on the 29th of September, the elections were cancelled. The relation had circulated the letters to the relevant persons and the election was then cancelled. Several groups of farmers remained at the office for an explanation. The AEDC appeared upset at the news and commented that some individuals were power hungry, presumably referring to the GVH’s relations. After some singing and dancing, the farmers that remained were seated and the president provided an explanation. He read out the letter he had received from SGVH Kawinga. The president spoke briefly about the relations of the chief that had thwarted the elections explaining that there was conflict between them and the GVH.

4.4 Third Time Lucky: The Successful Elections

At the meeting on October 10th between SGVH Kawinga, TA Mphosa, TA Mpheta and WUA leaders, Kawinga criticized the relations of GVH Mpheta for using their ties to the chieftaincy to disrupt the election proceedings. A memorandum of understanding was signed by all members at the meeting stating that there was to be no contestation by relations of the chieftaincy in the elections, nor any interruptions in WUA affairs whatsoever. *“Kawinga stated the scheme was government property and that traditional powers were not to interfere in government run affairs”* (informant, 19.10.09). In the week prior to the elections the WUA held a campaign, where the leaders were divided into 11 groups of 3 members. This method differed from the original campaign structure due to the limited time available before these elections. Earlier in the week the WUA had decided who would be eligible for election in the executive committee. *“We assess individuals based on things like attitude, whether they farm well, and whether they act as role models for others. Education is not a factor, but it determines the selection of the president and secretary. We also made a decision to create a*

gender equal executive committee, by selecting 5 members from each sex¹³” (informant, 19.10.09).

On October 20, the WUA held its first elections in almost 9 years, 864 (55.5%) farmers out of a total of 1556 turned out to vote. This was a legitimate voter turnout as the constitution demands a quorum of equal to or greater than 50% for a lawful elections. Event organisers used a name register and handed out blank papers to block leaders asking them to fill in the names of farmers from their respective blocks. The names are written in columns, with one column representing member farmers from a single irrigation block section. A block section corresponds to the area fed by a single tertiary canal. An informant explained that the opposition has again tried to thwart the elections, this time travelling around villages telling farmers elections have been cancelled because of a funeral. The AEDC said he was the one who called all the representation from local government departments to the elections. After all the expected visitors had arrived the election proceedings commenced with an introductory speech and a welcome by the Master of Ceremony (MC). The MC introduced all the leaders and chiefs present as well as all government representatives. In attendance was the MP for Southern Machinga District, several members from the Ministry of Health and Forestry at EPA level, a Food and Nutrition Officer, an extension officer representing the DADO, TA Mpheta, TA Mphosa, SGVH Kawinga and approximately ten local village headmen. The MC called for self discipline and peaceful elections. GVH Mpheta spoke and he reminded the voters of the failed elections that took place earlier in the year, suggesting they all forget the past.

Voting Procedure and Outcome

A DADO representative commended the current management on the scheme for defending their actions in response to recent difficulties and pursuing a fair and free elections. He then talks to the crowd of farmers and onlookers about the qualities they should seek in leaders. He urges the voters to seek leaders with knowledge of the English language, such that they can converse with outsiders. He also states that the education level of an individual should play an important part in the decision making process. He also tells the voters to take into account gender in their decision making process and to vote for women too. He made no reference as to why voting for women was good or necessary. Next in line was the MC who presented the procedure for voting. He explained that voters could select three potential candidates for each position, that they would be blindfolded (see photo 4.1), and voters would be asked to queue up behind their chosen candidate. The candidate that scored the highest number of voters would win the position.



Photo 4.1: Blindfolded candidates and voter queuing up behind

¹³ This last quote on female representation is confusing. The informant likely meant that the ‘elections’ were going to observe gender neutrality by the nomination of an equal number of members of both sex.

Nominations for the position of WUA president were made first. The nominated candidates for the presidency was the previous president, the former vice president and Eleanor Sonkho a female executive committee member, the highest ranked woman in the WUA. The candidates were blindfolded, and members were asked to cast their vote. Farmers jostle for positions in the queues. There is a lot of shouting and cheering and three queues soon become distinctly obvious stretching from the front. There was lots of noise and excitement as farmers made an effort to establish their positions in the line. Some members tried to urge



Photo 4.2: Queue behind former president (700 voters)

other voters and bystanders to join their line in an effort to rally support. The process took several minutes and soon one very long line of voters becomes obvious extending nearly 150 meters across the compound (photo 4.2). This is the queue for the former president. Counters begin walking quickly down the lines, tallying each individual as they pass. After the results had been added up, members were seated, and the results announced. The former president scored highest with 700 votes, the former vice president receiving 157 votes, while a former executive committee member received 7 votes. The

vice president was elected based on the second highest score in this round consequently resuming his original position. The female candidate was dropped and was subsequently nominated for lower ranked positions. I did not learn the gender balance in the electorate nor discover whether the organisers themselves had made note of this statistic.

This whole process was repeated for the position of secretary, v.secretary, treasurer, v.treasurer and executive committee members. For the position of secretary and vice secretary three nominations were made which again included the same female candidate. A similar distribution of results occurred with the former secretary receiving the majority 583 votes, the former secretary of the agricultural committee taking 181 votes and the female former executive committee member receiving 33 votes. The former secretary of the agricultural committee therefore acquired the position of vice secretary of the executive committee. It is important to note that in 2007 vice secretary at the time passed away, leaving the position vacant for the remaining two years up until the elections. The former secretary of the health committee won the position of executive committee treasurer with 422 votes. The former vice treasurer of the executive committee received 54 votes however it appears the position of vice treasurer was not re-offered in this election. The third member quit his nomination before the votes were counted. Five nominations for committee member were expected to stand. The female leader that had twice lost out on higher ranked positions received the majority vote of 130. The remaining four candidates received votes in the order of 99, 57, 28 and 13. After the voting, the president made a speech stating that he alone was incapable of carrying out all duties and would need the support of others. The MP then expressed his desire to see the new members become trained and that he hoped all members elected would fulfil their roles until the next elections were held in 2012. That gives the WUA three more years to manage, as slated in the constitution.

A Note on Gender Representation

A study on irrigation in Malawi revealed that while women may be present on decision-making bodies, they have little influence on the actual decision-making. However, empowered women carry out important functions and have a high level of responsibility within their communities (Bishop-Sambrook, 2007, p.9). A few days prior to the WUA elections that took place in October 2009, an informant (19.10.09) described how this year the WUA had decided to create a gender equal executive committee. He described how they would elect 5 men and 5 women to compose the committee. Eventually, only one woman was elected. She won the position of committee member, the exact same position she had held in the previous administration. The AEDC commented that if there was one problem with the elections, it was that they (the voters) did not respect gender. *“Farmers were not gender sensitive. A problem in this area is the lack of education. Many women do not receive education. They are therefore ill-equipped to handle the responsibilities of certain positions. Mrs E. Sonkho was the first women to attend secondary school. If we had 10 of these women, I am sure they would compete and find themselves occupying those higher chairs in the WUA. The Vice President is a retired primary school teacher, he therefore has a good educational background”* (22.10.09). The day after the elections, I met the sole elected female representative in the market centre and I asked her how she felt in response to the elections. She said she had contested for the position of president, secretary and member of the executive committee. She says she won the latter post only, the same position she had held previously. She explained that she was not happy with the gender outcome, as most of the positions went to men. *“There was a female vice treasurer several years ago, but she quit her position due to her inability to fulfil this role. She was not able to write properly. Next time I will move up to secretary”* (22.10.09).

4.5 Conclusions Through Various Speech Acts

It is interesting to compare the different speech acts performed by different actors around the elections. Several quotes have been selected from various actors that helps to expose the power struggle that is at play. These acts have assisted in analysing the underlying factors present in power relations. The uncle to the chief expressed that *“...all matters (in the WUA) needed to pass through the chief, before they are approved or disapproved. Mpheta is the most powerful of chiefs in the chieftainship. When the WUA was elected by secret ballot in 1999, Mpheta asked that they manage the scheme well, be responsible for the farmers”* (uncle, 11.09.2009). This speech act in response to the 1999 elections indicates it was considered a sideshow, the TA being the ultimate power bestowing permission to the newly elected committee to manage the scheme. The TA family member that quoted this, essentially claims TA authority over the scheme, and that irrespective of elections, it is the GVH who ordains the committee and asks them to manage the scheme on his behalf. The TA family claim ultimate control, because they ceded their land for the government to establish the scheme on it in the first place.

There is no mention of TA in the WUA constitution and association leaders argue that the influence of TA has been reduced or eliminated since the WUA was first established. During the Muluzi reign the influence of the TA was allowed to re-surface as situations on the scheme relaxed. Informal arrangements between powerful political actors developed which included both government officials and local TAs (Ferguson and Mulwafu, 2007, p.216). The WUA had the uphill task of reasserting its dominance in the face of greater TA expression. The secretary (09.10.09) said that in the past chiefs had upset meetings by biasing member responses. Members had felt pressured into responding in a certain way when chiefs were present and so were unable to express themselves freely. Chiefs started to shoulder too much

of the responsibility in association meetings, or would end up dominating the discussions. “*GVH Mpheta is provided with an advisory role on WUA affairs*” (president, 08.10.09). While the TA is used as an additional means to enforce decisions, the use of this statement by the president endeavours to reinforce the WUA’s authority. It suggests the TA was ‘assigned’ the role of an advisor by the WUA. In contrast to this, the presence of a rival faction on the scheme with close links to the chief, has demanded that the WUA recognises the TA’s powers. This was evident during the president’s speech to the remaining members outside the office on 29th September. He tries to gain support for his administration by arguing the rival faction is not only opposed to the WUA but also the TA. He tries to reduce the integrity of the rival faction by linking a conflict of interest between them and the TA. By polarising his rivals from the TA, the president consequently reinforces the WUA’s relationship with the TA in the eyes of the onlookers.

The WUA calls on the TA to assist it in screening members for plot allocation and reallocation. If members have not paid their plot fees, or if a user has not been adhering to certain rules or bylaws, they risk having their plots reclaimed by the WUA and reallocated to new users. Before this can happen though the WUA considers the case with the respective village headman and together a decision is made. “*In November there is the general assembly, we call the chief and the farmer, we discuss, and make a decision whether the farmers plots will be reallocated or not*” (president, 08.10.09). In retrospect this may also be viewed as a strategy of co-option. By utilising the TA, the WUA is preventing the emergence of a rival authority, one that could dispute WUA discretion.

During the run-up to the second election attempt, the Snr chief had left a letter demanding election postponement with a guard at the gate of the district office. “*Kawinga knows he is not supposed to get involved in WUA affairs and that is why he didn’t hand it to me personally. If he had handed the letter to me personally I would have rebuffed it immediately*” (ass. DADO, 05.10.09). The Snr GVH influences the situation through his letter and manages to postpone the elections, in the process showing his authority. The response from the government official is one of arbitration. He recognises the WUA’s authority on the scheme, and the interference caused by the chief in WUA affairs, but also respects the authority of the TA by not rejecting the letter. In the manner of mediator he continued “*...local leaders should not interfere with scheme management. When there are challenges the WUA should come to us for support. Local leaders should be used in cases of disciplinary issues*” (ass. DADO, 05.10.09). Similarly, the strong government presence at the elections highlights how the government continues to retain responsibility for regulatory oversight. At the behest of the users, government is used as an ‘impartial’ arbitrator, rather than the TA or any other authority that is linked to the actual users (Bolding, 2004).

5 Maintenance on Domasi Scheme

The sections that follow describe the maintenance work performed on Domasi during the period of the research. Separate parts explain the types of labour that are mobilised. Plot fee rates and recovery is described and analysed, and in the conclusion the occurrence of several of these processes is analysed within the broader context of IMT. The dry season in Malawi offers the best opportunity to perform maintenance work due to limited to zero interference of rain. Conducting the research in the driest months from September to November right before the rainy season afforded the best opportunity to observe the DWUA carry out maintenance work.

5.1 Scheme Infrastructure and Perceived Associated Challenges

The state of the infrastructure on the scheme forms a series of perceived challenges for the users. The president indicated his concern to me over the steel gates on the main distributary canal. He explained that some of the gates dated back to the early 1970s when the scheme was built and are in a poor state needing repair. Approximately 10 out of the 20 gates were



Photo 5.1: Dilapidated gates on main canal missing wheels

rehabilitated under the IFAD project. The wheel hubs on many of the gates were either loose or had gone missing (photo 5.1) and there was someone in the city of Lilongwe, 350km away, who knew how to manufacture new ones. *“The project was going to take one of us there, so we could find, or contact him after handover. But that never happened”* (president, 27.10.09). He explained that the small wooden gates could be built locally on the scheme and that they were cheap costing anywhere from 1000 to 2000 kwacha depending on the size.

Visible damage to the sides and bases of both lined and unlined canals is quite a common sight on the scheme. The bunds or walls are damaged from a variety of factors. Damage from the cultivation on top of the bunds with



Photo 5.2: Impact of human erosion along secondary channel

crops like maize and vegetables, causes structural weakening. Tunnelling through the sides of canal walls by water users aiming to improve access to water is another factor. There is a widespread use of water in the canals for bathing and washing clothes, the direct human erosion damaging parts (photo 5.2) of scheme infrastructure. Damage to canal lining causes uneven and erratic water flow, placing canal infrastructure under even greater pressure from water erosion. The initial cement lined portion of the main canal is heavily silted, full of debris, rubble and waste from bordering homesteads, obstructing the even flow of water in the

The cement lining on the main canal stretches from the headworks for approximately 700m before terminating near the 2nd secondary offtake. At this point the state of the main canal deteriorates quickly with uneven flows, large eddies, undercutting of the canal walls, and large amounts of weed and grass obstructing flow further. One part of a secondary canal is nearly 3m wide as a result of water erosion along it's edges. Some sections of roads have



Photo 5.3: Damaged road from flooding

been damaged by water (photo 5.3) which obstructs the smooth flow of human and animal traffic on the scheme. In the lower parts of the scheme, standing water as a result of blocked drainage ways, results in greater damage to scheme infrastructure.

In contrast to these observations, the WUA was labelled as privileged by the assistant DADO (05.10.2009), because he felt the scheme had good infrastructure. Domasi's 'physical infrastructure is in better condition than most of the schemes of its age' (Njoloma et al, 2009, p.n/a). Literature suggests that IMT reform is more problematic in cases where schemes have

poor infrastructure or difficulties carrying out maintenance work.

5.2 Extent of Maintenance Work – Dry Season 2009

The extent of the maintenance work carried out on Domasi during the three month study, is shown on the sketch map below (fig 5.1). Red dashes signify the secondary canal restructuring, green dashes indicate canal clearance work, while the blue dashes highlight the roads on the scheme that were repaired.

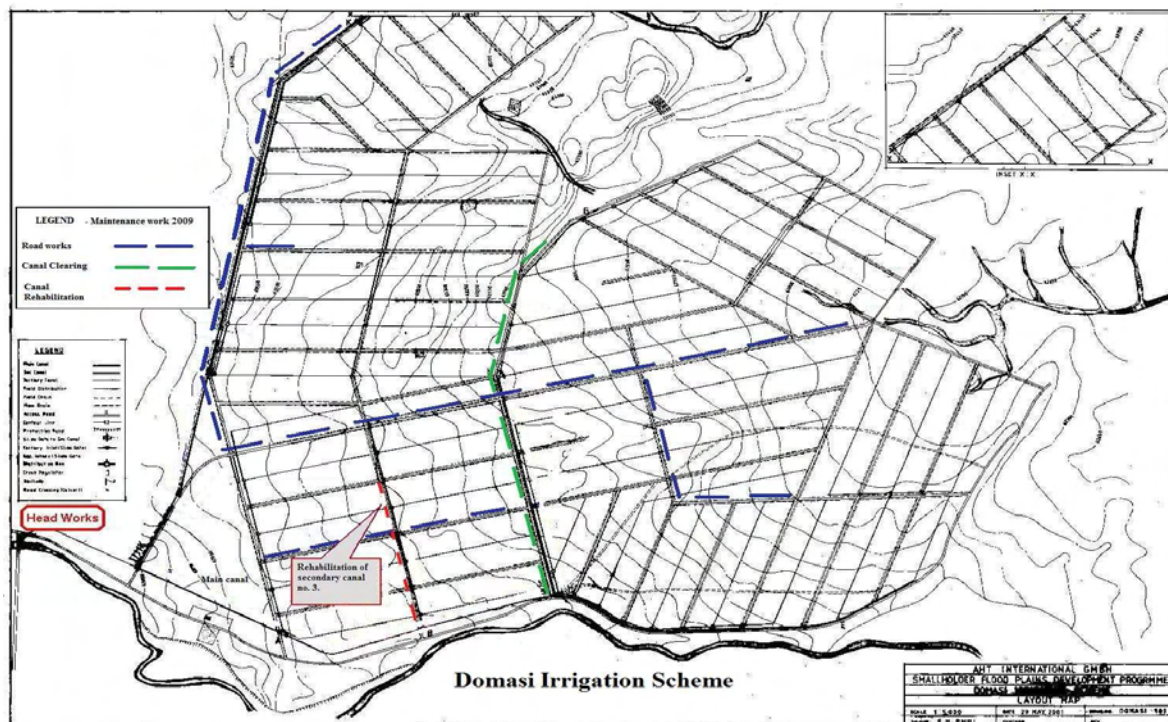


Figure 5.1: Maintenance work 2009. Technical drawing
Source: AHT International, SFPDP

The Permanent Labour Group

On several visits to the scheme during the research, a group of approximately 15 men could be observed carrying out routine maintenance related activities on the scheme. Almost all of the men in the group are middle-aged or older. This included the chairman of the headworks a man perhaps in his fifties or sixties and several middle aged village headmen. The group was employed on a predominantly permanent basis by the WUA. The word predominantly used, as perhaps during peak harvest or planting periods, this labour group is dissolved to provide time for individual work demands. I observed between 10 and 20 permanent labourers working on any given day. I was unable to identify reasons for the fluctuating numbers of these workers. The most likely reasons for the variation in worker numbers perhaps stem from the myriad of life's circumstances that have an effect on and shape the lives of individuals farming on the scheme. In the rainy period, the worker group size decreases due to the difficult conditions for maintenance caused by the rain and the increasing demand from the workers' individual farming demands. Another reason is that in the rainy period the WUA places responsibility on plot holders for the management of drains and canals.

The group was employed on a permanent basis, however their day to day attendance was recorded by a supervisor. The group began work at approximately 5 am and ceased when the job had been completed. Generally the work lasted several hours and by 9 am the last workers could be observed leaving. The early hours of the day offered the coolest period of the day, and marks the period in which most, if not all maintenance work is carried out on Domasi. The labour group was often divided into two teams, each working on a separate area of the scheme and activity. On the majority of days, a group was observed working at the headworks removing sediment, while the second group carried out various maintenance activities on the scheme such as canal clearing, canal resizing and road works.

The majority of work was distributed on the basis of 'piece' allocations, however at the headworks this was not possible as the removal of sediment was not easily measurable. On the scheme, canal clearing and road maintenance afforded the best opportunities for piece allocations, each individual being assigned a measured section. The sections were measured by pacing, or in some cases a tape measure was used. The use of the tape measure was the preferred option as the work quantity could not be disputed by the labourer. Shovels used during maintenance works were owned and supplied by the WUA office, and were stored at the office overnight, during weekends and during off work periods. The labourers were required to compliment the work effort by bringing their own hoes. Once a labourer has completed his assigned workload, he signs off on a register list that is kept by a foreman.

On or around the 20th day of each month the register is taken by the foreman to a member of the executive committee, most likely the president or the secretary. The committee then calculates the work days per member and the salaries are calculated and prepared. In 2004, the average daily ganyu¹⁴ wage level for agricultural labour was estimated to be between MK50 (€0.37) to MK70 (€0.52) in cash. The 2004 daily wage for a public works employee working for the MASAF was U\$0.33 (MK36), considered excessively low by various stakeholders and organisations in the country at the time. In May 2004 a revision was recommended, to increase the rate to within a band of MK83 (€0.6) to MK107 (€0.8). (McCord, 2004) The current rate for a single days work on the scheme was set at 140 Kwacha (€0.8). This indicates that labour (ganyu) rates on the scheme are comparable to national levels.

¹⁴ Local term used to mean casual labour or informal employment mode

The age and the high status of the men in the permanent labour group begs the question why the group is composed the way it is. In a democratic WUA one might expect to find a more homogenous spread of individuals, both young and old, male and female. Unfortunately, this insight was only discovered later after the field research was over. This group of older men may hold a degree of influence and authority over WUA and political affairs. Some of the men are certainly ranked high in the traditional system, and may have certain powers. The work appears desirable as form of financial security and perhaps personal standing in the WUA. The president may have installed the men as permanent labourers in an effort to broaden his political support base but this remains unclear and no evidence is available to support this claim.

Work at the Headworks

A group of permanent labourers was observed on regular occasions desilting the river bed at the headworks. During the wet months large amounts of sediment are deposited at the headworks, and the removal of this sediment is required to allow proper and free flow of water into the main intake. Removal of the sediment by the permanent labour group started in September, at around the time I started to visit the scheme. The extent of the siltation was large, with the sediment covering the lower cement foundation that runs the width of the river bed, and obstructing the downward position of the large gate. The mode of sediment removal was very energy consuming, and involved a series of steps. First the wet soil is dug up from the river bed, and piled onto the lower part of the river bank. These piles were often left to dry for several days, allowing the moisture to evaporate out, thereby making the load lighter. Afterwards the piles are shovelled further up the bank until reaching the top. Large piles of sand are made on the top of the bank, and I observed trucks arrive occasionally to pick up the soil for construction purposes¹⁵.

By the end of November, the extent of the removal works is clearly visible. The cement base and channel leading towards the main intake is clearly visible now whereas previously it had been covered by a layer of sediment no less than 1 meter thick. I estimate the labour group has removed an estimated 40-50m³ of sediment over a 10-12 week period or approximately 50 labour days. With an average daily workforce of 9 labourers, and an average daily working time of approximately 4 hours per day, I calculate and estimate that 1800 man hours of labour is used for the activity. In terms of costs for the WUA, 63,000 Kwacha or €322 is paid to the labourers over this period. Assuming an 80% fee recovery rate for the year 2009, the cost is equivalent to one fifteenth of the total fees leveraged that year. This activity marked one of the largest WUA expenditures during the 2009 year. While the cost subtracts a significant proportion from the total proceeds, the WUA showed no difficulty in paying its dues. Wages were paid to workers on a date near the end the calendar month. Cash withdrawals were made at the bank by senior members of the WUA prior to this date¹⁶.

¹⁵ Unfortunately I did not gain further information over who exactly collected the soil, nor whether this soil was paid for in any way. I did establish that the sand was used locally for nearby building construction and was picked up by local contractors, but could not determine if the sand was purchased.

¹⁶ The WUA outlay varied slightly from one month to the next, which may have meant that the remaining balance could have influenced decisions over the extent of maintenance work for the following month/s.

Canal Maintenance

Apart from desilting of the headworks, another team of permanent male labourers was placed on the scheme to maintain roads, canals and drains. The initial 150 m to 200 m of secondary canal #3 was being rehabilitated at the time of my research. This ongoing process involved first clearing the canal floor and walls of weeds and grass using slashers and then using hoes to scrape the sides clean. The canal was then widened by digging away the canal walls, and then reshaped using several identical trapezoidal templates (photo 5.4) made from wood. The DIO for Machinga, explained that most canals on irrigation schemes in Malawi were built using the trapezoidal cross sections. He mentioned that the template was first used on Domasi by IFAD during their rehabilitation of the scheme starting in 2001. The WUA kept the measurements and can reconstruct the templates when needed (DIO, 05.10.09). Several lengths of string were stretched between the templates which were spaced approximately 10-15 m apart. Soil was added to the floor and sides of the canal and then compacted until the desired trapezoidal shape had been achieved. The canal was then left to dry for several weeks



Photo 5.4: Wooden form used to set dimensions of canal

before use. Farmers were specifically asked by the president not to clear or walk on the canal bunds until the new canal walls had hardened. The whole rehabilitation process took 2 to 3 months to complete¹⁷.

There was no observed work plan, or a schedule of works to be carried out. The president of the WUA would have likely been the main decision maker over maintenance efforts on the scheme. He is flanked in his decisions by other senior members in the WUA. As for how decisions are made and for which reasons, was not observed. Decisions

over maintenance were made on a confidential basis, by senior members in the WUA. The order of the works was not understood to be linked to any specific timeframe or plan. Rather, the extent of the work carried out, or the progress made within a set amount of time would govern or at least inform the decision over the quantity and type of work still to be carried out. Farmers have very little say in where maintenance should be considered and therefore rely on the WUA to make these decisions. Some farmers have opinions over where work could be carried out on degraded parts of the scheme, however these opinions rarely if ever reach the senior decision makers.

5.3 Temporary Labour Projects

The other mode of labour organisation on the scheme were temporary labour projects. During the three month period of the research, the WUA offered temporary employment to male and female WUA members alike. Unlike the group of permanent male labourers, this employment appears purely open and equal to any individual willing to put in several hours of work each day. Several weeks prior to the start date of the maintenance project, the WUA office informs local leaders and farmers of the planned project and makes a request for labour to carry out its activities. Farmers have several weeks to show their intent on participating by

¹⁷ The number of hours spent by permanent labourers on the scheme was more difficult to estimate and figures were not investigated. Financial figures were confidential, and therefore not readily accessible. I have therefore refrained from drawing any estimations of labour costs.

registering at the WUA office. There does not appear to be a cut-off figure for participation and if there was this number was never exceeded. On the planned project days, farmers and supervisors congregate at the proposed work site at dawn (5 am) to begin work, lasting for approximately 3 hours. The terms and conditions of this work are similar to the permanently employed. Each farmer is assigned a stipulated piece of work, and sets to work with either a slasher, hoe, or shovel depending on the nature of the activity. After a farmer has completed his or her assigned segment a supervisor briefly inspects the work in order to make sure the work is complete. The supervisor then registers the farmer as having completed one piece of work after which the farmers can leave. At the end of the month the register is delivered to the WUA office for salary preparation.

Road maintenance was the dominant activity carried out in these short term projects. The operation involved removing soil from the adjacent drains (dishing), repositioning the loose soil onto the road surface and then compacting it. In this process the road is heightened, strengthened and sloped to effectively shed water during the rains. Several members from the Agricultural and Health committees occupy roles as supervisors for the maintenance projects. These individuals are tasked with organising the work which includes sourcing the necessary tools from the office, registering farmers, allocating piece work and assessing the work efforts by labourers. They work solely on a volunteer basis, and therefore receive no payment for their efforts. However they may be entitled to other forms of compensation indirectly. This issue is discussed in a later chapter. Not all the supervisors are present at every maintenance event, and some supervisors are attending more often than others.

The WUA president described how this was the third year in a row whereby maintenance projects were carried out on the scheme. *“In 2007 we had 80 farmers that worked for 6 weeks. In 2008 we had 200 farmers that were split into 2 groups of 100, again working for 6 weeks. This year, 2009, we have had a maximum of 115 farmers working for 5 weeks”*. (president, 20.11.09) The basis for the differences in the number of labourers or time frames allocated for labour works each year was not greatly understood. However several factors could contribute to these annual variations. These include the availability of supporting labour, perceived maintenance requirements, variation in the cropping calendar and growth cycles, and the status of the WUA budget and revolving fund. Maintenance projects targeting infrastructure in different areas of the scheme, have occurred over several years.

5.4 Plot Fees and Cost Recovery

Plots on the scheme are approximately 0.1 ha in size and the owner of each plot on the scheme is charged an annual fee. The fee applies to a single year, and is neither water nor crop dependant. The plot fee is the WUA's main means of raising finance for the revolving fund. In a scheme with approximately 5,000 plots, and a fee recovery rate close to 80% for the 2009 year, the WUA should have raised close to one million kwacha (€5120). The plot fee amount has altered several times over the last decade. Based on verbal communication with the WUA president, he provided some rudimentary rates from previous years. He stated that in 2001, the plot fee was close to 10 kwacha equivalent to €0.23 factoring in the exchange rate at the time. Between the years 2002 and 2005 the plot fee was set at 50 kwacha or €0.48. In the year 2006 the fee was raised to 150 kwacha or €0.91 and by 2007 it had gone up to its current rate of 250 kwacha or €1.34. In 2009, the euro-kwacha exchange rate equates 250 kwacha as €1.28, a minor reduction from the 2007 rate stated already. As far as hard currency is concerned these figures indicate a plot fee increase by a factor of 5, over the last 9 years and presents a great accomplishment by irrigators and management alike. This is surprising as generally WUAs will refrain from raising fees, a measure that is normally considered unpopular by users. The president indicated that next season the WUA would

raise the plot fee again, but did not indicate by how much (President, 08.10.09). He stated that the current rate of 250 is not high enough, leading to shortages in the revolving fund¹⁸.

Dry season farming is not charged a fee, with the exception of farmers that cultivate water melons. The WUA president explained that, as water melon farming is lucrative, (and exclusive to those that have the knowledge to farm water melon) they are charged a plot fee of 500 kwacha. In a later conversation, he remarked that he wanted to see a plot fee charged to those irrigating in the dry period too. He did not make any comment as to when or how this would be carried out. In terms of access to water and plot productivity, there is a greater chance that plots in the dry season, will lack access to enough water. Some members may also feel that paying a plot fee twice in one year to be unfair¹⁹.

Block leaders are responsible for the collection of plot fees from farmers within their administered section. If a farmer owns plots in more than one block section, appropriate fees are then paid by the farmer to the leaders from the respective sections. The block leader is responsible for collecting the cash from the farmer, issuing a receipt to the farmer and then depositing the fee amount with the WUA treasurer. The money is then deposited into a bank account or revolving fund, which is held with the National Bank of Malawi. Deposits are made at the bank branch in Zomba city, approximately 30 kilometres away from the scheme.

The Fee Payment Meeting

A fee meeting on the 31st of August, provided useful insights into plot fee collection rates. The meeting was attended by approximately 40 members, the majority of whom were block leaders and executive committee members. The aim of the meeting was to obtain an up to date record of the fee payments that had been made over the past several months. Methodically, the results were read out to the group by the president, section by section, until all blocks had been covered. Block leaders that had achieved high collection rates were congratulated by the president and small rounds of applause were organised for each of the high achievers. At the end of the meeting, the block leaders with the highest collection rates were awarded a small incentive for their efforts and high achievement in the form of small monetary rewards. These was granted directly by the president, and accompanied by applause. Vermillion (1991) argues that turnover of management to the users improves the management performance, as the self governing body has the proper structure of incentives, managing according to a set of performance criteria. The small cash handouts awarded to individuals for excellent work is one example whereby the WUA has adopted an incentive. Ostrom (1993) confirms this message stating that given the correct set of incentives, users form systems or organisations in a way that promotes successful management.

The president turned his attention towards matters concerning unpaid plot fees. The president emphasised the importance in collecting fees from farmers that had not paid, and then set a fee payment deadline for September 15th, a date that was 2 weeks into the future. The president announced that the unpaid members would have their plots withdrawn by the WUA. *“Many have paid their plot fees this year. Up to 85% have paid. Those that have*

¹⁸ He did not explain in detail how these shortages result, however I sense that he feels the farmers could pay a higher rate. He also gives the impression that it is the farmers responsibility to pay more, the current rate not fully taking into account the truth of the situation. By this, the president seems to suggest that although farmers have the means to pay a higher rate, they are not willing to do so.

¹⁹ The president showing his desire to see the implementation of a dry season charge and higher annual plot charges may signify a particular apprehension over the current financial status of the WUA, raising important questions over the financial systems self sustainability.

failed will lose their plots and new farmers from the surrounding areas will obtain the plots. We have received almost thirty application letters so far from people who want a plot. These people will receive plots” (president, 08.10.09). He also remarked that block leaders were partly responsible for the unpaid fees and that the WUA might be forced to reclaim their plots too. This was met with some apprehension by the leaders.

The president attempts to place some of the responsibility on the block leaders to take a more active and accountable role. He does this through light forms of coercion and intimidation. In the majority of cases, reclaiming plot fees is a difficult process, and there is a sense that block leaders lack the needed authority when dealing with farmers²⁰. One leader in the fee meeting,

Table 5.1: Percentage fee payments as of 31st August 2009

Percentage fee payments as of 31st August for 32 Sections

Block Sect No.	No. Farmers/Sect	No. Farmers Paid	% Paid	Amount collected (MK)
A3	22	20	91	8200
B1	27	25	93	10000
B2	40	24	60	12500
B3	47	40	85	20250
B4	60	44	73	18250
B5	19	13	68	5250
C1	51	13	25	5200
C2	32	12	38	3300
C3	42	5	12	2000
C4	69	30	43	9250
D4	100	43	43	20500
E1A	58	28	48	10750
E1B	56	27	48	13800
E2A	48	3	6	1750
E2B	54	29	54	16000
E3B	27	8	30	4000
F1	28	21	75	8250
F2	34	11	32	6450
G1	36	24	67	22250
H1A	42	32	76	17950
H1B	44	38	86	20850
H2	80	44	55	17250
H3	45	26	58	12550
I1A	48	19	40	8050
I2B	41	29	71	14700
J1A	44	44	100	19250
J1B	36	22	61	10500
J3	34	29	85	11000
K1	39	39	100	20000
K2	35	26	74	17750
K4	35	30	86	22000
K5	68	57	84	19000
Totals	1441	855	60	408,800

described how some farmers refused to pay the rent on the grounds that the land was theirs. Another explained how he is often met with many excuses including lack of available cash or that fee collections are not coinciding with the sale of crops²¹.

Table 5.1 shows fee collection rates for 32 sections, only a proportion of the total number of sections on the scheme. These results were recorded during the fee payment meeting that took place on the 31st of August, 2009. The table shows an average fee payment rate of 60%, for the 32 sections shown. In an interview with the president on 8th October, he explained how plot fee collection had reached approximately 80%. This indicates that in the time between the fee meeting and this interview a significant proportion of fees were captured. The table highlights great differences in the fee collection rates per block. Two section leaders were able to make a fee recovery of 100%. In comparison, only 3 farmers out of a total of 48, had paid fees in section E2A, a rate of just 6%. The president announced that those farmers that had not paid, would risk having their plots reclaimed by the WUA, and reallocated to new plot applicants. He said that this year they had received 30 new plot application letters from both old and new farmers. However, if the fee collection rate is as high as 80%, that still leaves 20% or 1000 plots that have not been accounted for. With an average plot holding per member at 3.21, an estimated 312 farmers would have not paid their plot fees. The 30 new plot applications would barely scratch the surface. The president

declared that in November there was going to be a general assembly, where the chiefs and farmers would be called to determine the fate of the farmers plots. The member would have the chance to present his/her own case for defaulting.

The WUA strategically uses the TA to help it enforce certain rules. It removes the possibility of co-optation by the offending member, and strengthens the WUAs authority. I question the

²⁰ Second order free riding occurs where for instance a group of leaders fails to report violations or, in this specific case fails to make farmers accountable through payment of plot fees.

²¹ Group interview with canal leaders on the 2nd September in the WUA meeting room.

WUAs ability to enforce the rules as well as sanction the withdrawal of all the non-paying member plots. In effect the actual number of plots that come to be withdrawn by the WUA is far less than the number of defaulting farmers. After asking the block leaders how many defaulting cases had plots withdrawn since the WUA had taken office, the answer was an astounding three²² (block leaders (02.09.09)). One of the reasons for the low seizure rate may stem from the fact that while farmers respect WUA rules, they retain a strong sense of power and control over their plots²³.

5.5 Conclusion

Approximately 2 ½ km of scheme road was lightly maintained through a process of reshaping and strengthening. The extent of the road works accounts for a significant proportion of the total length of scheme roads, approximately one quarter of all major travel routes were dealt with through various form of light routine maintenance. The initial 150 m to 200 m of secondary canal #3 was maintained through a process of clearing and reshaping back into a trapezoidal shaped cross section. The permanent labour team removed an estimated 40-50m³ of sediment over a 10-12 week period from the river basin at the headworks. The extent of the works cost the WUA approximately 63,000MK (\$320).

Vermillion and Johnson (1995, p.3) state that ‘users will only pay water fees if the organisation managing their irrigation system delivers water reliably and ensures the long-term productivity of the scheme’. While users are able to observe annual maintenance work, an activity that leads to a degree of scheme improvement, the activity also serves as observable evidence for the expenditure of their investment. The opportunity for users to participate in labour projects is highly valued, but it also presents an opportunity for users to gauge the administrations expenses. Many users indicated a strong confidence and trust in the leadership. Vermillion (1991) states that because transfer switches the role for setting priorities to the users, this could help to establish social justification for irrigation fees and promote a collective appreciation of the need for equitable payments from all users. The perception by users that the O&M service is good is one main reason for the high fee recovery rate. While the fee has risen in the last decade since the start of management transfer, there doesn’t appear to be the perception that the fee is too high or that it includes unnecessary overhead charges. The predictable and repetitive nature of maintenance work from one year to the next instils confidence in the users. They appear to have developed a trust in the WUA and assurance in the resilience of WUAs maintenance services.

DWUA has shown itself highly capable of raising finance and then reinvesting that money back through routine maintenance. Implementing a dry season fee would offer a means to raise further funds for scheme O&M activities²⁴. Third year in a row whereby the WUA has succeeded in organising local labour forces to work on routine maintenance jobs on different parts of the scheme. Generally temporary labour projects are active from anywhere between 5 and 6 weeks during the months of September and October. This periods are subsequently placed near the end of the dry season, a time when presumably the largest majority of plot fees have been recovered.

Some flooded portions of the scheme have succeeded in damaging the structure of roads leaving large gaps in the roads. These gaps occur more frequently in the downstream and lower areas of the scheme where drainage water collects in both summer and winter

²² I did not investigate the legitimacy of this figure nor attempt to discover the reason why these defaulters had lost their plots while others had been allowed to continue.

²³ This issue is elaborated further in chapter 6.

²⁴ It is unclear whether the practice of seasonal fees has been carried out previously on the scheme. No mention of seasonal charges during the period of IMT was made at any point during the research.

irrigation. These gaps were not addressed in the maintenance work, likely as fixing a hole in the road requires the use of cement culvert rings, the production of which requires that members travel to Liwonde to source the DOIs culvert form. This combined with the high costs of cement in Malawi makes it a largely expensive procedure. While the road breakages do not necessarily impact the scheme in the operational sense, it does inhibit the flow of traffic on the scheme, and increase travel times as various vehicles may opt to use alternative longer routes that are dry.

6 Operation of Domasi Scheme

The following chapter has been structured in line with the chronological events that were observed over the 12 week research. Initially I describe and analyse water management practices applied by farmers to both access and control the flow of water, predominantly at tertiary level. The latter 6-7 weeks of my field research coincided with lower volumes of water. As a result of the diminishing levels of water I could observe several instances whereby water became a contested resource. In essence the contestation emerged as a result of an increasing occurrence of unauthorised diversions. In the following sections I have provided several accounts of scenarios to show the reader how contestation materialised on the scheme. Contest and conflict over water exposes weaknesses that are perhaps inherent within a system.

6.1 The Farming Calendar

On the notice board outside the WUA office, the following planned farming calendar was presented (see table 6.1). It may be a permanent poster, placed there several years ago. It was difficult to verify whether farmers adhere to the general dates stated on the calendar. Many activities are marked to occur within a month or greater as opposed to on specific days. My research started in late August and all rice had been transplanted by the time I had arrived. Various accounts indicate that transplanting occurs over a period of several weeks, depending on local practices of the different farmers and the size of the seedlings in the nurseries. The calendar is very vague in many respects. For instance, for the month of July, farmers at some moment need to transplant, apply fertiliser and do some weeding. From observations, weeding is performed by individuals when weeds are perceived to be in abundance and a threat to potential yield. The second round of fertiliser is to be applied in the month of August. This presumes that farmers have access to fertilisers in the first place and this is not always the case.

Table 6.1: Farming calendar

Farming Calendar	
1 Summer period	
Month	Work to be done
November 15 - December 14	Maintenance of canals and drains
December 15 - December 31	tilling and soaking seed - establish nursery
January 1 - February 15	levelling and transplanting
February 15 - March 15	apply last fertilisers
April	protect crop from birds
15th May	cease irrigating
April/May/June	Harvest
Seed type to cultivate: Pussa 33, maize, water melon, sweet potato	
2 Winter period	
Month	Work to be done
15th June	open water, establish nursery, plant seed
July	transplanting, fertiliser application + weeding
August	application of 2nd round fertiliser
15th November	cease irrigating

The calendar indicates that farmers are to cease irrigating from the 15th of November, and this presumably corresponds with a water shut off by the WUA at the main intake. On Thursday 12th of November I spoke with the president and he stated that on Sunday the 15th they (the WUA) would be shutting water off the water to the scheme. This is exactly in line with the planned schedule. Rather than allow farmers to cease irrigating the WUA uses the top down method of cutting off water to the scheme to achieve their objective. On the 18th of November, water was still entering the scheme, presumably as some farmers still needed water. By the end of the month, the river was prone to large flooding as a result of the onset of the summer rains, leaving the WUA no choice but to shut the main gate. The calendar, rather than act as a planned schedule for operations is used as a guide for staff and farmers. Visitors may refer to it for some basic guidance, more so than the local resident who has farmed on the scheme for several years already and is aware of the dates.

Early Water Distribution Patterns and Practices

Early in the research, irrigation of the large rice growing areas (see Figure 6.1) on the scheme occurred on a day by day needs basis. Soon after dawn each morning, the WUA president would meet with scheme operators and verbally arrange the irrigation and maintenance activities for that particular day. Maize and water melon both located in distinct areas on the scheme required water approximately once and twice every fortnight respectively. The observed delivery of water to these areas was not particular to any specific day or time. Rather, the intervals between water deliveries were variable. During the initial period of the study, I observed water delivery to these growing areas to occur more or less on a needs basis. If maize or water melon farmers decided it was time to irrigate, they simply opened the gates on the main canal and sent a proportion of the flow down the secondary canal. By leaving all gates partially open, they could divert a percentage of the flow to their plots without disrupting the flow to rice growing plots further down. These spur-of-the-moment water distribution practices did not appear to threaten irrigation farming on the scheme during the initial part of the dry season. However, in later months, under the conditions of water scarcity, the spontaneity with which these decisions were made resulted in conflict.

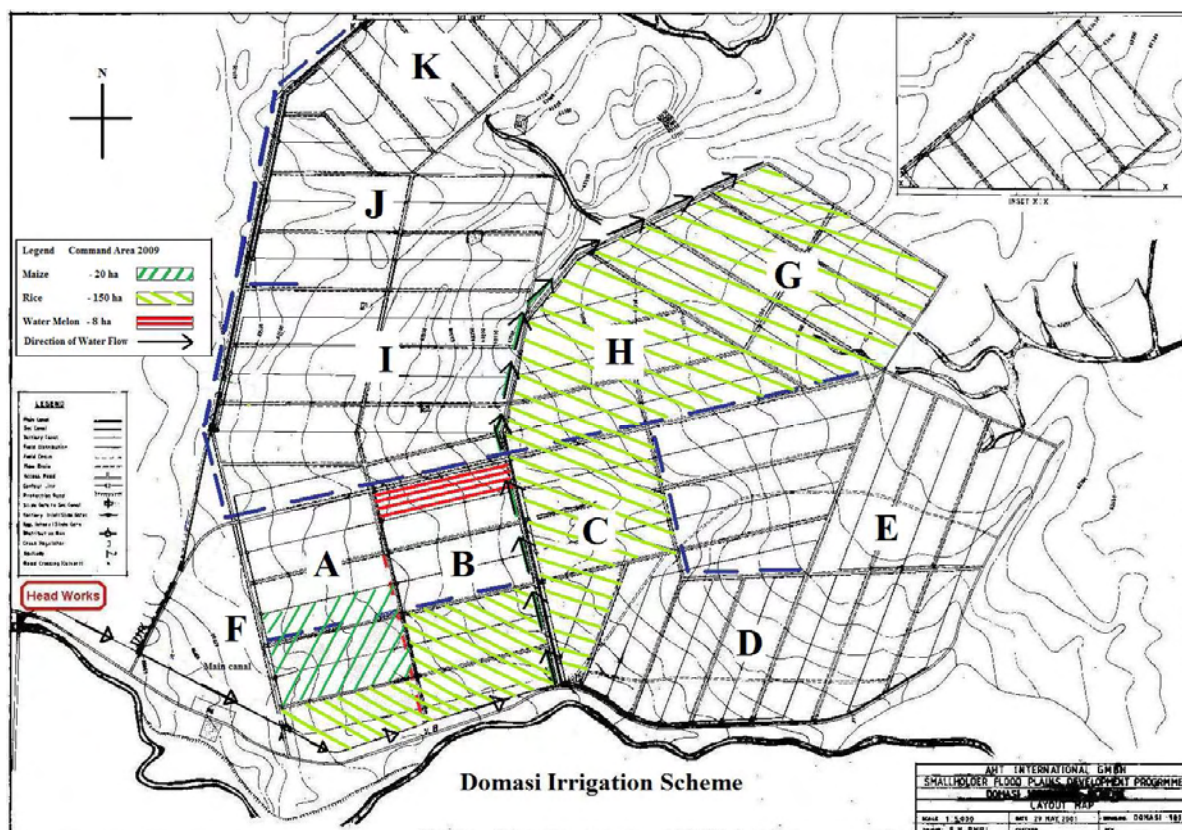


Figure 6.1: Winter 2009 command area and crop type

One of the most common practices observed was the delivery of water to plots directly from an adjacent drain. One factor promoting the practice of 'drain irrigation' is the fact that half the plots on the scheme are located adjacent to a drain rather than a tertiary canal. This is because the scheme was designed such that two basins or plots separate a tertiary canal from a corresponding drain. The two basins are linked and the drainage from one plot is used to fill the next plot until the desired level of watering has been achieved. This arrangement requires that neighbouring plot holders co-ordinate and irrigate simultaneously. In the wider context, the system also demands an organised and planned irrigation schedule, one that users can count on and abide by. However most neighbouring farmers do not co-ordinate to irrigate

simultaneously as mentioned previously, hence there is no consistent schedule. As a result farmers with plots adjacent to a drain will often irrigate directly from the drain. This is done by first breaking down the wall of the secondary canal directly above the desired drain. This



Photo 6.1: Structure in drain raising water into plot

for the finer material which is layered over the top.

allows water to flow from the canal into the drain. These practices indicate how farmers rework infrastructure, in this case made possible because plot basins are relatively small and have been levelled, facilitating irrigation from a drain. Inside both drains and canals, farmers construct temporary weirs or bunds (see photo 6.1) to raise water to the head necessary for it to enter the plot. These weirs are mostly made from soil and debris, although larger constructions use several sticks or logs positioned horizontally across the section. In other instances, posts are pushed vertically (photo 6.1) into the base of the drain functioning as a supporting frame

The larger structures were more common in drains as opposed to canals, the former occupying a lower position relative to field level and consequently needing to support a greater amount of water. The way the weirs are built has many implications in terms of how water is shared at the field level. In canals, weirs are small and built more to divert water than to raise the water level. As such they can be built faster and are easier to control. In many instances these canal weirs were built only partially along the cross section of canal, allowing a part of the water flow to continue downwards for other users. The flow into the plot or down the canal is easily controlled by either extending or shortening the length of the weir. As for drains, the purpose of the structures was to raise the water level and hence there was a need to block the drain completely an action that demanded a solid structure.

As far as water efficiency is concerned there is likely a large amount of seepage from the majority of canals, even the cement lined ones. The main and secondary canals are filled with cracks and holes or contain long unlined sections. Cement lining or rehabilitation of these sections would likely come as a great expense for the WUA, making repair difficult. The irrigators' main objective tends to be getting water into the plots, as opposed to concentrating solely on the efficiency of the conveyance (Nkoka, 2009). Seepage on an irrigation scheme, similar to leaks in underground water supply pipes, is largely invisible to the naked eye. It therefore stands to reason that irrigators would know little about the extent of seepage let alone care little for conveyance efficiency in the first place as long as water reaches the field. Irrigators use the apparent visual flow of water as a means of quantifying water flows as opposed to using measuring instruments. The government crop researcher noted that while the WUA would like to rotate the winter command area over the entire scheme, the furthest blocks represent a challenge due to their distance from source resulting in higher than average water losses. This comment was made at a time when block G was being irrigated (see fig 6.2) one of three blocks that lies furthest from the intake, thereby confusing the argument. One reason for this contradiction, may stem as a result of slope differences on the scheme. The gradient of the canal from the intake towards the northern part of the scheme is lower than towards the south.

Diminishing Water Levels

To determine the extent of the water flows in main canal I carried out a series of measurements in the main canal over several weeks. There was no fixed measuring apparatus available therefore an approximation technique using an empty water bottle as a float, tape

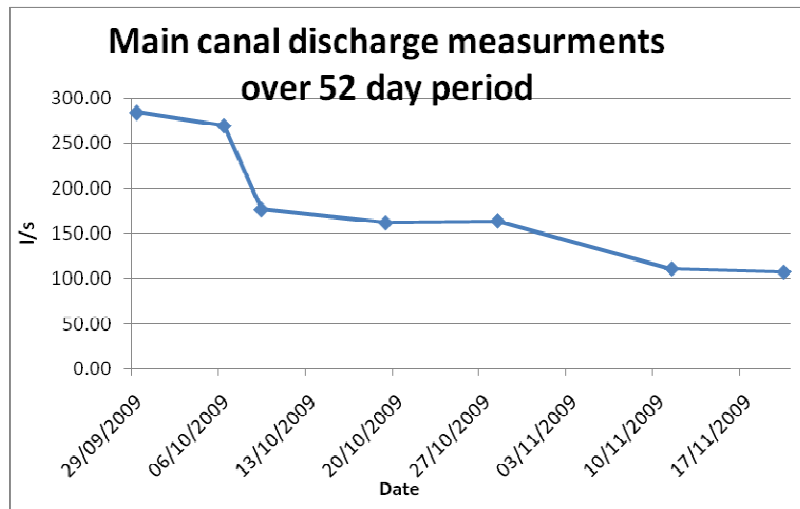


Figure 6.2: Main canal discharge measurements

measure and stopwatch was carried out. The method employed was adapted from a technique taught by the Irrigation and Water Engineering Department at Wageningen University. An easily accessible location along the main canal was established whereby the measurements were made. Discharge measurements were then made every 1-2 weeks over a total time period of 7 ½ weeks (see figure 6.3). From the graph it is clear that water volumes in the Domasi River diminished quite rapidly as the research progressed. The latter 3 months of the dry season for sub-Saharan Africa took its toll and by the 2nd month of research (October) the scheme was absorbing all the surface flow from Domasi River. Before the winter irrigation season begins, the O&M committee in conjunction with various knowledgeable members meet and plan the extent of the command zone and different cropping areas for the coming season (SAARO, 28.10.09).

Plots that are in the upper part of the scheme, closer to the intake, have a direct benefit from access to larger supplies of water. Infiltration and leaks in the main and upper secondary canals creates a moist environment, allowing farmers to plant rice and other crops earlier in the season. Indicative of this phenomenon is the following statement by one of the block leaders: *“Last year there was a water shortage and so farmers were only permitted to grow maize and watermelon. There was such little water in the canal it did not reach the furthest blocks on the scheme. Farmers downstream were not receiving any water as upstream farmers were using it all”* (farmer, 02.02.09).

6.2 New Measures; a Schedule and Two Water Guards

At a large farmer meeting on 7th October, the president announced that two guards had been hired to divert water to farmers plots during the daytime hours. The president asked the group of farmers to respect the schedule (see table 6.2) and the work of the new water guards who would be responsible for carrying out an irrigation schedule, effective from first day of following week. According to the president, prior to 2007, (president, 07.10.09) block leaders were responsible for water distribution. However this led to problems when some leaders became biased, favouring farmers in their own blocks and accepting bribes for doing so. One guard had worked as a water guard for the previous two seasons. The first guard had been hired

Table 6.2: Proposed irrigation schedule

Day	Area	Crop
Saturday	Block B	Water melon
Monday	A1, B1, C, D	Rice + Maize
Tuesday	Block G	Rice
Wednesday	Block G	Rice
Thursday	Block H	Rice
Friday	Block H	Rice

in the former two seasons and was usually part of the permanent labour team. The second guard was being hired for the first time to lead the process and work alongside the first. The new guard had apparently performed guard work during the government years, possessing greater technical skills and experience in distributing water than the first guard.

In order to verify that the schedule was performed, I set up a tracking sheet (table 6.3) to record the areas irrigated each day. Below is a table indicating the blocks that were actually irrigated by each guard which can be compared to the publically agreed schedule stated in the

Table 6.3: Water distribution tracking (one week period)

Day	Date	Morning		Evening		Planned schedule
		Guard 1	Guard 2	Guard 1	Guard 2	
Saturday	11-oct-09	A	G	A	G	B
Monday	12-oct-09	A	G	A	G	A1,B1,C,D
Tuesday	13-oct-09	H	H	H	H	G
Wednesday	14-oct-09	None	H	H	H	G
Thursday	15-oct-09	B	H	B	H	H
Friday	16-oct-09	B	H	B	H	H

right hand column of the table. It is immediately obvious when comparing the two sets of schedules that, not only do they not match on a day by day basis, it was impossible for them to match from the start. For instance, while block H was allocated two full days in the planned schedule, the guards spent the better part of four days

irrigating this area. The planned schedule is unrealistic and not reflecting the realities that exist on the ground. As water levels dropped on the scheme, it took longer for the two guards to fill the desired number of plots. This manifested the need for more extensive watering times, something the planned schedule did not take into account. Several weeks later, the situation was the same. Not only did real watering not reflect the planned schedule, but there appeared to be no repetition or recurring pattern of watering from one round to the next. It did not come as a surprise when several weeks later, one water guard replied; *“up to now we have been using our knowledge. When one area is done we move to another area”* (guard, 22.10.09). The intended system may therefore have been ignored, either straight away or shortly after realising the difficulty of its implementation.

6.3 Water Conflict

In the majority of cases, after the guards had ceased their duties for the day, farmers would emerge and contest for water in the late afternoon and early evening hours. Late in the day on October 26th, two men were expressing signs of disagreement over the legitimacy of a water abstraction with another farmer abstracting water from the secondary canal. Nearby, a man passing by bike blamed a woman irrigating from the drain for blocking it and using all the water (see photo 6.2). He told her that maize farmers downstream also needed to irrigate that same day. The sentiments being expressed were of discontent and dissatisfaction.



Photo 6.2: Woman irrigating from drain

They were marked with raised voices, increasingly rapid speech, and dominating behaviour including finger pointing. Two days later, another farmer explained that he had waited until midnight the previous night, to irrigate his plots. He had intended to irrigate at an earlier time however several other farmers upstream began to divert the water for their own use. *“Those farmers in H and G get water and then they want it again soon afterwards. They cry, however they always receive water! The area is too large and the distance is far making it difficult for the water to reach all the way. Last night, as soon as I arrived, I opened the gate at the intake. Soon afterwards, someone came and blocked it”* (farmer, 28.10.09).

The president was highly involved in water distribution, and he generally relayed instructions to the guards on a daily basis. On the morning of October 27th, I found the WUA president upset as a result of an unauthorised diversion at the second secondary canal offtake on the main canal. Someone had taken off the lock and chain used to hold the gate in the closed position, and diverted a large percentage of the flow. The president was observed replacing the lock and chain together with a guard and the chairman of the headworks. He appeared genuinely concerned over the current course of events. The incident is perceived by the president as a serious breach to the rules of water allocation on the scheme and reveal a poor attitude by some individuals towards achieving equitable water distribution. The misdemeanour was caused by the headworks chairman who was in possession of the key to the lock. He had been asked to remove the lock and divert the water for maize plots in block A. It appears the farmer that had requested the diversion, was of high standing in the area, making his demand a powerful one. In the October 7th farmer meeting the president declared that whoever tampered with the system would be penalised and their case made an example for others (president, 07.10.09)²⁵.

Did the Water Guards Help?

The guards were made responsible for water distribution during the daytime hours, and executed a degree of control during these periods. It was more difficult for a farmer to tamper with the system during the daytime, and therefore it became common for farmers to come out at night to obtain water. One such incident occurred on October 19th, whereby there had been water theft the previous night. Farmers had adjusted the wooden gates and diverted water to their own plots. The guard claimed to know which farmers did this as their plots were full of water the next morning. There appeared to be a high level of tolerance for these nighttime abstractions signalling a *laisse faire* attitude by the president and WUA, as long as the abstractions occurred at night.

The guards were the target of criticism on occasion. One farmer remarked, *“I prefer the rainy season, when there is plenty of water, no water guards and no fighting. For the entire month the other blocks have received water. What about us? This time the water guard is wrong, and we disagree with him”* (farmer, 27.10.09). This farmer’s discontent turned in the direction of the guard, questioning the guards’ capacity to effectively distribute water. While the guard was only performing his duty to the WUA and following orders from the president, he becomes an easy target for blame.

A guard explained that farmers had complained about his allocations believing he was neglecting their needs and favouring influential users like the chief and the WUA president. *“The farmers argue there is plenty of water in the main canal. I disagree, there is little water and as a result plot filling is going slow now. It can take up to a week to fill one block. It is difficult to check all the gates. Water does not just go to the chief and president, the farmers just think that”* (guard, 29.10.09). These thefts and accusations place the guards in a stressful

²⁵ The exact details of the event was difficult to know fully due to the sensitivity of the incident.

situation. They are unable to please all users, and naturally there will be farmers that feel their needs are not being met. While farmers may disagree with the way the guards distribute water in the field, some of them acknowledge that the guards are a means of helping to systemise water distribution on the scheme. As one farmer positively describes; *“the water guards that have been employed operate in a good way and the WUA made a good decision to hire them”* (farmer, 10.10.09).

In conjunction with the lower volumes of water was the apparent shortage of man hours for water guard work. On several occasion, guards complained about the difficult working conditions, and that at present, their capacity was too limited to cope with the amount of work. One guard explained *“...we are supposed to be four guards, two filling and two checking the canals”* (guard, 12.10.09). The guard insisted that the two man installation was insufficient to handle all the water related issues and farmer demands arguing there ought to be four guards. This guard had been associated with the old MYP led regime, and his mention of the use of four guards instead of two, may well be a reference to past water control measures during this time. On 27th October the guard explained that the second guard had been dismissed for accepting bribes, in the process, making his job even more difficult as he now had to work alone. Two days later on the 29th October the guard said that the more farmers did themselves, the less he needed to do himself.

Epilogue

The agricultural research officer for the government explained that every year water scarcity produced similar behaviour on the part of plot holders: *“Farmers will steal water, it will happen, there is a scramble for water. Farmers will go in at night, steal water and they will not follow a schedule. They will alter gates, move them and even misplace them”* (SAARO, 08.10.09). The officer’s resigned observation appeared to emerge from one of surrender, as though he had accepted the fact that each year conflict would occur, and there was little one could do to stop it. In the face of this recurring problem, in 2009, the farmers all managed to gain access to a sufficient amount of water that allowed them to secure a harvest.

6.4 Conclusions

Initially there was neither a schedule nor guards however as water became more scarce, the WUA tried to control water flow to greater degree. These controls emerged in the form of an proposed irrigation schedule and the hiring of water guards to carry out the schedule. The schedule was not enacted from the beginning, the guards irrigating areas not stipulated in the schedule. Several factors appeared to make the schedule unworkable. Firstly it was unrealistic in the sense that it did not reflect the realities in the field. This included a reduced water supply, resulting in longer rotation times, and insufficient guard hours for adequate and efficient water sharing. Secondly, while the guards were made responsible for water distribution during the daytime hours, during the night hours the water was free for all. This was marked by a larger number of conflicts occurring at night than during the daytime.

By instituting guards the president tried to systematise water distribution to a certain degree. In essence the guards were able to concentrate the flow of water to certain areas of the scheme achieving greater efficiencies and less water loss. In the critical periods with low water volumes but highest demand from users, the guards provided a degree of structure that greatly reduced the scale and onset of conflict. Although it was not explicitly stated, the controls by way of schedule and the water guards was largely a means of securing water for downstream users in large rice growing areas H and G. These areas lie at the downstream end and in the event water abstractions occur upstream, they were likely to suffer severe water

shortages. The control mechanisms instituted allowed these areas to secure some access to water even if it was only possible during the day time.

It appears that there is a high degree of tolerance for unauthorised abstractions taking place at night. One might even argue whether the abstractions are considered illegitimate. The WUA seems to allow these abstractions to occur most likely due to their inability to control what happens at night. At the end, the guard does admit that if farmers irrigate too, he then has less to do himself. The guard also realising the seriousness of the situation, appears to tolerate and even condone these unauthorised transactions. In a broader sense, by instituting measures to control water flow only when the situation becomes critical, the WUA minimises the transaction costs used for resource allocation.

7 Land tenure, Leadership and Rice Marketing

In the first part of this chapter, land tenure and plot accumulation mechanisms are described and analysed within the framework of institutional capture by local elite. The section deals with the variety of ways users gain access to plots or raise cash through the use of various arrangements and patron client relations. The part briefly observes past and present gender representation in land tenure on the scheme by way of registered female plot holders and how in the case of matrilineal areas like Domasi, plots remain in the matrilineage. The second section is divided into two segments. The first segment deals with how the president functions, acts and attempts to enforce accountability of the users. The second segment describes the marketing strategies employed by various leaders and I discuss the way they not only imitate but also stimulate patron-client relations. I then try to draw conclusions from these situations and discuss the overall impacts in the context of the local managing style.

7.1 Land Tenure on the Scheme

7.1.1 A Sense of Ownership

Njoloma (02.09.09) says that “*When the MYP left, the local residents were given back their plots, made into residents again, and given a sort of status. Soon the sense of ownership returned*”. After 1993 and the departing of the MYP, farmers were allowed back on the scheme to farm in peace, co-existing with other farmers, a sense of ownership and security reinstated back into the local system²⁶. He went on to explain that land was given back to the local residents and traditional authorities after it had been taken away from them originally. The extent by which this previous period of stress and uncertainty on the scheme is currently impacting decision making and the actions of the WUA is difficult to know. Some farmers did make reference to the impromptu manner with which the MYP would reclaim plots. While there is no evidence to support this, there may be some element of apprehension by the WUA when it comes to withdrawing plots from farmers, as it serves as too much of a reminder of those past times. In the majority of cases at least, the scheme manager jointly with the SMC played a large role in driving plot holders off their plots. While TA authority was never re-instated officially, the process of plot redistribution may have strengthened old feelings of ownership and control. This may serve to explain and provide grounds for some of the current difficulties the WUA faces in response to customary land claims.

Under Malawi’s new land policy and law, newly formed users associations will receive a lease for the scheme land from the government (Ferguson and Mulwafu, 2005, p.5). IRLADP unit Director Joseph Chisenga described how currently the scheme is being leased from the government by the WUA and that ideally the farmers should be given a sublease from the association. Unfortunately more details over the terms and conditions of the lease were not investigated. Sublease papers were planned for Domasi irrigators under the IFAD project but these arrangements never materialised. Chisenga stated that farmers today entitle plots to themselves ‘*by virtue of having had that plot for a period of time*’ (interview, 24.09.09) and by adhering to some of the general conditions stated in the constitution. While the WUA is the governing entity on the scheme with rights to withdraw plots from defaulters, the irrigators, by virtue of prior appropriation, also hold powerful plot rights.

After and during the IFAD transfer period, farmers maintained ownership of their original plots. There was no mention of a redistribution coinciding with IMT, neither by the WUA nor

²⁶ Njoloma suggests the peaceful sense had existed before the arrival of the MYPs. However it is clear in recurrent literature that the MYP had been on the scheme since its inception in the early 1970s. Njoloma was probably referring to the period before the scheme was first installed.

the project. Evidence suggests that the owners of plots prior to IMT, remained the owners post transfer. i.e. the owner of plots A and B during the years of the SMC, remained the owner of plots A and B during and after transfer. *“By the time the project was closing, we had not worked with the farmers on the issue of the sublease arrangements. So what appears to have happened is they seem to be maintaining the ownership that was there before...”* (Chisenga, 24.09.09).

During the government years the 12 plots composing block F were used for rice research trials and demonstration plots. The secretary of the WUA explained that after IMT the WUA reallocated several of these demonstration plots for use by local farmers (secretary, 02.09.10). The SAARO confirmed this fact specifying that four plots had been reallocated by the WUA (08.10.2009). These measures reflect the statements from Vermillion et al (1995, p.28) referring to improved efficiency gains that take effect after transfer. The WUA managers did not see the need for 12 demo plots anymore, and therefore decided to repossess four and hand them to farmers. Similarly, the president also prohibited trials during the dry season stating there was insufficient water. These acts demonstrate a level of authority over the use of scheme property and ownership of infrastructure.

Gender and Inheritance

In 2003, Concern Universal estimated that 47% of the 1,500 members were women. Another source documents that after rehabilitation and management transfer, the number of farmers rose to 1,556, of which 756 or 48.5% are female farmers. After construction of the scheme in 1971 out of a total of 1,220 farmers, 440 or 36% were female farmers. This shows an increase in the percentage of female plot owners by 11 – 13% over a period of 30 years. In their 2003 study, Ferguson and Mulwafu noted the overwhelming support by farmers to have plots registered in a woman’s name. At the time of their study, the new Land Policy and Law was proposing to make inheritance more equitable by not recognising customary inheritance practices. It was believed that under this law, women in matrilineal settings like Domasi may end up losing rights (Ferguson and Mulwafu, 2007, p.223). The reason is that Domasi scheme is located in an area of matrilineal inheritance, succession and residence rules, whereby women work the land belonging to their own matrilineal group and men use land belonging to their wives (Peters et al, 2007, p.453). By implementing more equitable forms of inheritance in areas like Domasi, women may lose rights.

A local resident but non WUA member, explains that the plots he farms on are his wife’s and are in his wife’s name²⁷. His wife’s elder sister has had her plots registered in her husband’s name. He says next year he also wants to become a citizen of the scheme, and wants to register his wife’s plots in his name. He said this practice was quite common, and then explained that in the event their marriage broke, the plots would return to the wife or her family’s name. *“If I die, she will become the sole owner of the plots. If she dies, I will keep the plots. If we both die the plots will go to our children”* (25.09.09). This example highlights the matrilineal forms of inheritance that are at play. On Domasi, even if a man get plots registered in his name, the land inevitably remains under the customary control of the wife’s family. Plots that are left to specified next of kin, may be permitted by the WUA to take over the land assuming they meet the membership criteria.

Political Association

Domasi river marks the boundary line between Zomba and Machinga districts. Directly on the south side of the boundary near the scheme is Namasalima village, part of TA Namasalima. On the north eastern edge of the scheme is Mpheta village, part of TA Mpheta.

According to Malawian irrigation expert Henrie Njoloma each TA has a different national political affiliation, which extends into the two villages. The farmers using the scheme come from both TAs. While carrying out the research there was no evidence to suggest that these political differences have affected the functioning of the WUA, nor was any detail uncovered over how these past differences have impacted irrigation on the Domasi. Politicians are not allowed to take up any leadership positions in the WUA nor have any influence whatsoever over WUA work (Chisenga, 24.09.09). The Domasi constitution is in accordance with this statement whereby candidates for parliament or other government office must resign from their position with the association, but diverges somewhat in response to the statement that authorizes member rights to be politically active.

7.2 Plot Allocation and Accumulation

7.2.1 Dry Season Allocations

I had the opportunity to observe farming on the scheme during the dry season from September to November, right up until the start of the rainy season. In the dry season, a plot will only receive water if it lies within the chosen command zone. Only a portion of the scheme can be irrigated during a dry season on Domasi scheme due to water deficiency. Irrigators are supposed to relinquish their plots and allow the WUA to fully govern their use during the dry season (block leader, 02.09.09). Because the WUA has the power to determine where productive land will exist on the scheme in the dry season, they can also control plot access and allocation mechanisms to greater effect. The decision over the size and location of the command area is made by the president, O&M chairman and other senior leaders in conjunction with various knowledgeable members, who meet and plan the extent of the command zone and different cropping areas for the coming season (SAARO, 28.10.09). There is no measuring equipment and hence these decisions are made based on observed river flows and past experience. The blocks irrigated in the command area for dry period 2009 were A, C, F, G and parts of B and D. The size of the area is approximately 180 hectares, an area approximately one third the total size of the scheme. During the dry season, farmers that have plots outside the chosen command area can apply for plots inside the area. This is done through a WUA register system. Farmers that own plots within the command area already, are either allowed to continue using their own plots, or are reallocated other plots elsewhere within the command area. In many cases farmers had to relinquish a proportion of their plots inside the command zone to other farmers on the scheme. The register works on the basis of 'first come first served', however no evidence suggested there was competition for dry season plots. There is an emphasis on rotating the command area from one year to the next to reduce pressure on soils. Although there is no supporting evidence, the rotation would have been applied to confer all plot owners equal opportunity for dry season cultivation. After the dry season has eclipsed and the rains begin, farmers return to farming their original plots. There is little evidence to suggest competition by farmers for dry season plots even though dry season cultivation is free of charge as far as plot fees are concerned. Some leaders replied this was largely due to farmers being tired after the rainy season harvest and preferred to rest (block leaders, 02.09.09).

The president stated that there was a general willingness by members to allow visitors from off the scheme an opportunity to farm on the scheme during the winter season. When a non member from off the scheme wishes to apply to cultivate, they must do so through the respective block leader. They do not have to pay a fee for this service. Together with the

leader they should visit the secretary or an executive officer where the application is assessed²⁸.

Plot Concentration

In a 2005 report, Anne Ferguson and Wapulumuka Mulwafu describe findings from a 2003 baseline survey carried out at Domasi and one other scheme in the Chilwa Basin called Likangala. The survey revealed an average land holding size of 3.9 plots, with 17% of farmers owning 5 plots or more²⁹. Oorthuizen (n.d.) explains that IMT can provide new avenues for farmers to improve their access to certain resources, ones that were previously unavailable under the old structures. Ferguson and Mulwafu explain that in the decade preceding their 2003 study, a concentration of plots had occurred in the hands of a few. After the scheme was constructed in the early 1970s, farmers were allocated 2 to 4 plots each. The report states that at one point owning more than 4 plots was considered against the rules. The report suggests that some WUA officials own over 10 plots.

While no quantitative survey was carried out on actual plot holdings, empirical accounts from various individuals indicate that the concentration of plots not only exists, but that some individual land holdings may have increased in size. One block leader estimated the secretary of the WUA to own between 22 and 26 plots on the scheme. An informant stated that the WUA president farmed on approximately 30 plots (informant, 28.10.09). This informant explained that plots were sometimes registered in the names of immediate family members such as spouse and children, and when these are factored in, the number of plots for some leaders increases significantly. There is ambiguity in the DWUA constitution over maximum land holding size. Nowhere in the document does it stipulate the maximum number of plots that can be farmed, only stating that WUA members have the right to a “profitable landholding size according to agreed criteria for land allocation” (DWUA constitution). (Ferguson and Mulwafu, 2005, p.8).

The younger brother of the GVH Mpheta, explains that he owns 13 plots. He admits that he is fortunate to own such a large number of plots and agrees that it is because he is a relative of the GVH. I ask whether he knows how many plots the GVH owns. After a few seconds to think, he answers “*about twenty.... the other small chiefs have 2-4 plots each. They are treated normally, whereas the government and WUA treat the GVH well and with favouritism*” (brother, 18.11.09).

The report from Ferguson and Mulwafu (2005, p.7) refers to renting and borrowing as a wide-spread practice on the scheme during the rainy season, furthering levels of plot concentration. Several discussions with various members and one informant in particular yielded strong evidence to support these earlier reported findings. The informer explained that renting of plots is carried out on Domasi scheme. “*Even the president rents plots. Many people do it*” (informant, 28.10.09). The informant says that he himself plans to rent four plots from another farmer at a cost of 4,000 kwacha (20.7 EUR) each, which will bring his total to 10 for the upcoming growing season. The informant then divulged “*a secret..., (a leader) is renting 4 plots for 4 years, a long term lease from another farmer, something that is not allowed*”³⁰. While this informant suggests the practice is not allowed, or deemed illegitimate, the Domasi constitution makes no reference to the acts of renting or borrowing. This may stem from the fact that leasing plots to other farmers serves the needs of both the wealthy and the poor farmers alike (Ferguson and Mulwafu, 2005, p.8). Wealthy farmers can

²⁸ Unfortunately due to the timing of the research it was not possible to verify some of these procedures.

²⁹ The report argues that the degree of plot concentrations on the schemes is underestimated due to lack of available listings or updated records, combined with the sensitivity of these issues.

³⁰ Due to the nature and sensitivity of this information, I have omitted the name of the individual in question.

farm a larger hectareage and produce more, while poorer farmers use their land as collateral in times of financial stress. *“This year the WUA secretary rented more plots. He rents the plots for one season only and pays 4,000 kwacha (20.7 EUR) for each”* (informant, 28.10.09). 4,000 kwacha is the standard rate currently set for plot renting on the scheme. These rates apply to wet season plots, as during the dry season, farmers lose control of their plots to the WUA. The informant continued by explaining past renting rates. *“In 2007 it was 2,500 kwacha (13.4EUR) and in 2005 and 2006 the rate was near the 2,000 kwacha (13.1EUR) mark. Last year, in 2008, renting was at 3,500 kwacha (17.3EUR) per plot.”* (28.10.09)³¹. These figures signify an increase in the rent value for plots on the scheme over the last 4 years. The increase suggest a growing demand for plots on the scheme.

One farmer and trader who works on the scheme has access to and ownership of four plots on the scheme. This dry season the WUA allocated him a single plot but after complaining to the WUA, was allocated another one. The two plots that the WUA finally agreed to let him cultivate, were his own plots. His remaining two plots were allocated for use by another farmer (Trader, 18.11.09). Another farmer explained how he was trying to obtain an additional plot on the scheme. *“I’m here (WUA office) to ask the president for another plot. He told me to come back to see him on Monday. I will keep asking him and hopefully I will get another one”* (Farmer, 14.11.09). This situation whereby the act of complaining or arguing ones allotment can result in the allocation of another plot, is characteristic of patron-client relations. The rules governing these exchanges are not fully contractual but built on informal understandings. The client in this case accepts and expects there is a possibility for greater plot accumulation through the simple act of asking.

7.2.2 Customary Land Claims

The GOM changed customary land into public land under the Customary Land (Development) Act of 1967. The Act essentially authorized the minister responsible for lands to declare a particular area a ‘development area’ (Kishindo, 1996, p.2). Once so affirmed, the customary land was turned into public land. The power of customary holders of this land ceased, and the responsibility of the land transferred to the government.

Those who occupied pieces of such land became the tenants of the state (Chirwa, 2002, p.311). This applied to all government run irrigation schemes established under the Banda era (Veldwisch et al, 2009). Pauline Peters (2007) has documented how TAs returned after the introduction of multi-party democracy and started to reclaim the land within these development areas. The TA could argue that the land was theirs originally, that they were the true custodians placing ancestral claims on the land. Post democratic change in Malawi, some LACs and SMCs ruled against these reclamations by traditional powers, using the argument that in fact the scheme still belonged to the government and was still slated as public land. The scheme managers were the rule makers and they could evict anyone that did not abide by certain rules. They wanted and needed to exclude any influence of the TA who could sit between or intervene in the decision making.

Recently in the new liberal land and water laws, the GOM has accorded a larger role to the TAs, due to the realisation that there is a higher likelihood of policy effectiveness if TAs are part of the process. Chiefs have therefore been given ex officio status in community development programs. This is similar to what is taking place on Domasi. Within the context of irrigation development and WUA functioning, the WUA leaders realise the importance traditional leaders have, and by giving the chief an advisory or ex officio role in WUA affairs, the WUA executive members are able to govern the scheme more effectively with

³¹ Historical exchange rates retrieved from OANDA.com

enhanced authority. Many government programs like IFAD view the TA as being an obstacle towards development and corporate performance however, due partly to the fact that chiefs prefer to take care of their own needs before those of others.

7.3 The President; Patron and Leader

7.3.1 Our President the Patron

In an early interview with the president, he described how initially he had settled on the scheme in 1984 and began farming. From 1988 to 1991, he took on the role of secretary for the SMC. During the years 1995 to 1999 he attended Pateya secondary school in a nearby town, and after finishing was elected chairman of the SMC. In 2002, he was elected as president of the DWUA and under the IFAD project was sent to Italy for two week course to learn about irrigation and WUA formation³². Throughout the research the president was observed to carry out a variety of roles. In an initial interview with him after arriving at the scheme, he exclaimed “*I am the driver*” (president, 28,08,2009) after I had asked him what his responsibilities were. This may serve to provide an understanding over the way the president perceives his position in the state of affairs. Wilbrink (2009, p.17) notes in his research paper that “the influence of the president is present in water distribution at the block level” and “the WUA president has a prominent role in day to day water scheduling”. The report also states that “although there is an O&M committee the WUA president is the deciding factor”. Similarly, I was able to observe the WUA president in many settings involved actively in the daily management of the scheme. At the office, he was consistently busy tending to requests from various farmers. His attention is demanded by many. Always when he was at the office, DWUA staff and farmers would very often arrive simultaneously, and begin to demand his time and energy with a whole host of issues. He handles the numerous issues and requests in timely and calm professional manner.

A large number of irrigators find the current president and leadership fair and just. “*All members find him popular, just, fair and good at his job*” (farmer, 02,09,2009). Farmers appear to compare the current administration to one in the past. Director³³ of the Irrigation and Water Management Unit for the IRLAD project, explained how the farmers were lucky the WUA leadership had been fair thus far, respecting the prior rights of individuals. “*Can you imagine if the committee was unfair, the members would not have that security*”.

Many interviews with farmers suggested support for the current president. One informant said he advises well, and as a result many people from schemes from around the country have come to Domasi to learn from DWUA and the president. The AEDC, the senior local government officer responded that the president was dedicated, and through the use of hired labour, he has made himself popular (AEDC, 22.10.09). The temporary labour projects were observably very well accepted attracting large numbers of farmers wanting to earn a wage in exchange for several hours of work. One farmer commented in response to the question over current leadership in comparison to past government control. “*Government is government and people are people. The government had machines and mechanics and the technical support. The president is trying to maintain the scheme*” (farmer, 15,09,2009). The farmer continued saying the president had sourced rice buyers from outside and therefore had brought opportunities for people to sell their harvests. In my interviews concerning the association, farmer responses focused a lot on the president, as opposed to the association as

³² Obtaining more details from the president over his past was difficult due to the reserved attitude he exuded when prompted with questions

³³ Interview, Joseph Chisenga, Director Irrigation and Water Management Unit IRLADP, 24 September 2009, Lilongwe

a whole. This in essence strengthens the argument that relations on the scheme are informed heavily by patron-clientage, and that loyalty is expressed along vertical lines.

What was observed was how farmers placed an emphasis on fairness and transparency as qualities they admire in the new president. *“He doesn’t gossip”* says Richard Moses, a young local farmer. *“The president want facts, transparency and accountability for all farmers. Most people love him”*. He continued; *“The president has assisted this area. He brings rice markets to the scheme and therefore provides opportunities for farmers to sell their harvest easily. He has a good vision and I see the impact with my own eyes. The roads and the rice mill are here because of him. He is also a trusting person, he gives opportunity to all people, a chance for people to improve themselves, as opposed to favouring his family, relatives and friends. When there is a conflict, he judges fairly and is not biased”*. *He is trying to maintain the scheme at least”* (Moses, 12.09.09). The AEDC says *“Mr Chapita is a dedicated person. His use of hired labour, has made him popular”* (22.10.09). Again the evidence here points at a personalised leadership style, of a patron who dispenses kudos in the form of temporary labour jobs and access to rice buyers, in exchange for popular support.

Several Speech Acts

I also had the opportunity to observe the president’s behaviour on several occasions through various acts. In one meeting, after the visitors had departed, the president began to interact with male and female farmers in the room. He appeared to rally the farmers somewhat, and soon they begun to shout out words and songs of praise on his behalf. The discussion revolved around the issue of printed DWUA shirts with the DWUA logo and slogan. The president questioned why some farmers were not wearing their WUA shirt. Some women claimed to never have received such a shirt, and after the president had promised that they would receive a shirt soon there was an applause together with praise for the president. Similar instances revealed the overwhelming support and approval for the president. The president maintains a sincere facial expression during these instances which gives him an appearance of sincerity and earnestness. The president is acting as a responsible patron, dispensing kudos which in turn triggers a public display of praise (the role of the clients).

The president takes a leading role in teaching and training farmers in general and more specific meetings. He appears to try to educate the farmers, and often lectures them on appropriate farming practices and related issues. In a general meeting on water distribution practices, the president opens up a discussion by posing a question to the assembly of farmers present. This was a method that he employed quite often, during meetings and similar gatherings. It served to engage the farmers in a healthy democratic style debate. He makes it clear when an answer or opinion is relevant by emphasising its importance. He also pays tribute or pays compliments to members that offer good advice or act according to the rules, or perhaps set an example he wishes others to follow. On more than one occasion he takes a very practical and realistic view of life, and tries to extend this doctrine to others. By being realistic, he is able to emphasise the responsibilities farmers have as irrigators on the scheme withdrawn.

WUA president: *“Those of you who receive loans and still interpret these as gifts, is wrong! This shadow needs to be removed”.....*

WUA president: *“How are we as farmers preparing for the rainy season?”*

A Farmer: *“We are receiving fertiliser”.*

WUA president: *“You are not the ones retrieving the fertiliser, the government is doing that for you”.*

Female farmer: “*We need to clear canals, drains, roads, till and level the soil*”
(applause from several farmers)

WUA president: “*100 marks, she is right, that is better...*”

(General assembly, 07.10.2009)

He adopts a very sombre but realistic view of irrigation by drawing attention to the importance of adequate irrigation management in the dry season. He declares that the dry period is the only period whereby irrigation occurs, as in the wet season, it is in fact the rain that irrigates, and not the farmers. He concluded by stating that if this dry season crop failed, then essentially there has been no successful irrigation that whole year. The president was also observed taking on the role of a trainer. In one meeting he stressed the importance in using a budget to keep track of individual farming finances. He lectured the gathering of farmers telling them that all their expenses should be accounted for. “*A farmer with a budget is a rich farmer. If you use a budget, you can compete with government time*” (17.11.2009). The president tries to emphasise his point by making a reference to the past time of government control, a period during which he believes farmers were financially better off.

The president regularly used various sayings such as proverbs, aphorisms, adages and analogies to emphasise his meanings. He used the analogy of a person who goes to school in an effort to learn something new, as an attitude farmers must adopt to improve themselves and their financial situation as successful irrigators (07.10.09). On another occasion, the president was observed conducting a classroom type lesson on a blackboard on the topic of financial break even. He urged farmers to wait for prices to go up to sell at a higher price. He urged them not to be tempted by offers of fast cash (07.10.09). I observe the president to be very influential, dominant and effective in his approach towards training others. On another occasion the president shared his view or belief that if people beg, or pretend to be poor, then they will remain in poor. Those people that ask to be rich will become rich he concluded. These examples demonstrate the deployment of particular speech acts: all informed by a commercial agriculture orientation. Through these acts the president establishes a form of authority that previously resided with the government appointed irrigation scheme manager.

7.3.2 Is the WUA Transparent Enough?

The WUA was criticized by some for lack of transparency while others tended to appreciate the visible nature of WUA operations. Transparency over the WUAs banking activities has attracted some attention, and two or three individuals criticized the approach. A trader says that when the WUA goes to the bank in the nearby city of Zomba, the treasurer does not go, only the president and the secretary (trader, 27.10.09). Similar criticism was voiced from the members who it was revealed were against the current administration. Similar statements were made by the assistant DADO, during a visit to the DAO office in Ntaja, “*the current DWUA is not that transparent. Some local leaders have shown fear over the accountability of the WUA. They (the association) make a lot of money and need to account fully for how that money is spent*” (trader, 05.10.09). He maintained that during the hand over process, an agreement was made whereby the WUA would declare financial aspects such as bank statements to farmers during general assemblies which take place on a quarterly basis.

All monetary transactions relating to sales, fee payments were recorded and receipts issued. All financial transactions between farmer and WUA were recorded in either receipt booklets or log books. The finance chairman always kept a receipt book with him at almost all times. In one instance, the WUA was able to settle a conflict, by referring to its records. A woman had recently accused her husband of not declaring the full share of the family rice sales, and she had sought accurate accounts in the WUA sales registry. After referring to the correct

sales receipt, the WUA could prove beyond dispute that the husband had in fact, not declared the correct amount of money to his wife. The records were kept in the rice sales books, the WUA keeping accurate accounts of names, volumes of rice sold and money paid. While these examples show records over how fees are collect, it is not about how money thus collected is spent. I personally observed a very private mode of operation exuded by WUA leaders. The WUA financial particulars were highly confidential, and I did not even begin to seek this information. The majority of farmers did not express the need to see bank statements, nor did they feel the WUA was carrying out any unconvincing activities. In the 'big man' culture it is not suitable to query such transparency since the 'big man' then risks losing his face. Checking of expenditures and accounts is usually a role that farmers feel uncomfortable with, preferring to see a third party like the government undertake such tasks.

7.3.3 Prosecuting the Controlling Patron

Two close family members to the GVH describe how the scheme is not as good as it used to be, with many canals and drains being full of weeds. They say maintenance is slow, canals are not repaired the way they should be, but accepted several roads were maintained in the previous year. The men then continue to lambast the WUA by accusing it of buying rice at low cost from farmers and then selling it on at much higher prices and pocketing the profits. The GVH's brother exclaims that there is a hidden agenda. *"If you look at the WUA executive committee there is a difference in the number of official members and the number that are active. There are 10 members in the executive committee and on any given day you may only see two"*. I interjected saying that I often see three or four. The GVH's brother continues, *"Ok fine but what about the others. Some you never see, just the president and the secretary. Since 1999, I have not seen one bank statement, nor has any farmer ever seen a bank statement. We are supposed to see these things, we want transparency and accountability. The president and the secretary are the only 2 signatories and they travel alone to the bank"*.

They talk about high levels of plot concentration in the hands of WUA leaders. The GVH's brother said *"You will find the leaders of the WUA own many plots but they do not pay plot fees. Or their friends and relatives are told they do not need to pay plot fees either. The president has 35 plots and he does not pay a fee. This is unfair and people are annoyed. Fowl play is not wanted"*. The men continued to express their dissatisfaction. The GVH's brother explained how the scheme buildings were dilapidated, and emphasised how one mill was not sufficient to cope with all the rice during harvest period. *"The second fuel operated mill is broken and it causes very long queues at the electric mill during harvest time. Some farmers have to stay and sleep with their rice all night"*. The GVH's brother explained the situation was difficult as many people had poor civic education. *"When there is a lack of civic education it is difficult for people to understand what is happening. The WUA takes this to their advantage. They are able to buy votes from uneducated farmers through cash and other incentives. The people are in the darkness being led by those in charge and those with power"*. The men questioned the WUA's legitimacy. *"Why can't they just leave after three years? After all they are supposed to be volunteers. As a volunteer there is nothing to gain, so why are they holding onto their position? They must be gaining something from being there"* (brother, 11.09.09).

7.3.4 Firing, Hiring and Inspiring; the President's Search for Accountability

There were several instances during the research where I observed individuals or groups make accountable others or themselves for certain actions. Over several weeks I was able to observe a permanent labour group go about desilting the headworks. The extent of the sediment build up was large and was going to need many hours of man power. This was certainly the case as 2 months later the labourers were still working. The results from their

efforts however did not appear to match the number of man hours that were being allocated for the task. It did not come as a complete surprise when in November, I learned that the WUA president had suspended the whole group of male labourers that were responsible for desilting the headworks. According to several informants the president had suspended the group due to lack of effort, poor performance, and bad punctuality. *“It was agreed they should arrive at seven thirty, but some were arriving later, like 8, or 9 am. This made Mr Chapita, the owner, very angry, and he dismissed them”* (labourer, 11.09.09). In place of the suspended group, the president hired a new and larger group of temporary labourers. The new group was quite visibly working with greater energy and vigour.

The president also suspended Martin Kalaile the assistant water guard, for supposedly accepting bribes in exchange for water. The water guard was observed functioning within the labour group for several weeks before the president reinstated him in the position as water guard. These actions initiated by the president in response to inadequate performance of labour efforts or individual work efforts, demonstrate the ability to use his own authority to make people accountable for their actions. This was evident during a casual discussion I had with Kalaile at the headworks. I observed Kalaile to be working with the labour at the headworks and asked him why he was not on the scheme with Mpokosa (the other water guard) distributing water. He claimed members in the labour group felt that he was still ‘one of them’ and should still contribute to the ‘real’ labour activities at the headworks. *“Mr Mpokosa is a real water guard, and as such he is not required to join in these other labour activities. I am seen as a helper”* (Kalaile, 27.10.2009). The labourers felt Kalaile was getting away with doing less work, by being on the scheme distributing water. They had thus called him back to the headworks. As I was leaving the site that morning, I overheard another labourer tell Kalaile which pile of soil was his responsibly and where it needed moving. Within the labour group, if one labourer is perceived as doing less work, the other members are quick to express their concern and demand more input from that individual.

At a farmer meeting on 7th October, the President explains to the group of 50-60 farmers that it is their responsibility to clear canals and drains adjacent to their own plots. He tells the congregation that many of them have not been fulfilling their obligations as member of the association. He states that it is their responsibility to carry out these tasks. He argues that ten of his own wet season plots, allocated to farmers for dry season farming, have not been cleaned properly. He says Domasi scheme has good infrastructure compared to other schemes in Malawi yet farmers still struggle to manage it properly. To stress his point he exclaimed that other schemes that were in a poorer state, are managed better. He continued telling that non-members from outside the scheme area were clearing their specific sections. Afterwards he ordered the clearing of canals and drains to be complete by the end of the week. He then named sections on the scheme whereby farmers had not satisfied management obligations. *“Farmers from block B need to slash grass in drains. Blocks CGF, we had an agreement that you would keep the canal clean, that agreement has been broken. Block leader for section C3 must be lazy ...”* (president: 07.10.09). The president places responsibility on the leaders to register the offending farmers, and that they should take the names to the office.

7.4 Rice Business and Marketing on Domasi

In the ensuing section I discuss rice marketing on Domasi scheme. Initially I set the scene by outlining the way the mill operates and describe how the buyers tend to control the buying of rice on the scheme, and refer to an incident whereby farmers had a large quantity of rice stolen from them. I then provide an account that elucidates the way marketing work is essentially confined to a few prominent individuals on the WUA, concluding with an analysis over the implications of such a setup.

Setting the Scene: the Rice Mill and Scheme Productivity

The WUA electric mill was donated by IFAD in 2006. The mill building was built and completely paid for by the WUA and its members. According to Joseph Chisenga the idea behind the mill donation was to help create a financially autonomous association. The revenues from the mill would be used to pay for management of the scheme. Prior to the electric mill, a diesel mill was operated by the government and TATM. This mill was costly to operate, and diesel had to be transported from the town to the mill. Apart from the WUA mill there are two privately owned mills in Namasalima village, less than 1 km away, and another at Namwera turnoff on the main road, which is approximately 15km away. The Namasalima mill does not work very well so the majority of farmers take their rice to the WUA mill. Another reason farmers take their rice to the WUA mill, is because of the distance to the Namwera turnoff. To transport one bag of rice by bicycle will cost 200 kwacha (\$1.3). In a pickup the price is less and costs approximately 130 kwacha (\$0.95) per bag. But this is still expensive. When farmers sell their rice in Namwera to traders they inevitably have to add on the costs for the transport.

Rice from the mill is sold on the basis of the ‘first come first served’ principle. Farmers take their rice to the mill for milling and their rice is put on a waiting list. WUA workers keep track of the selling as it is sold to buyers that come to the scheme. Other farmers from outside the designated scheme boundaries are able to sell their rice through the association. According to Ronald Hassan, it is because the scheme is relatively small, in comparison to the surrounding rice growing area. The production area outside the scheme is approximately 1,000 hectares and might produce between 1000 and 2,000 tons. The scheme comprises 500 hectares and produces on average 3000 tons of rice each summer season. By allowing other farmers to sell rice through the association, they attract farmers who use the mill, and therefore the mill can generate greater revenues from milling larger quantities of rice. The WUA mill charges farmers 100 Mk (\$0.70) per 50 kg sack of un-milled rice. According to Rashid Sambani a worker at the mill, the mill processes approximately 100 bags of rice per day, while in the busy summer months after harvest, close to 400 bags are processed each day, with milling often continuing all through the night until the next morning. There is a perceived niche in the milling business around the Domasi scheme as there were three new mills either planned or under construction in nearby villages (SAARO, 08.10.09).

7.4.1 It's a Buyer's Market

The scheme struggles to attract buyers and this is the case throughout the year. Traders come and go and there is no real consistency in their visits. A trader might come one year and then fail to come the year after for various reasons (Trader, 18.11.09). The market operates as a buyers' market, where farmers have little power in setting the prices of their harvest. One of the problems currently is that farmers are looking for Kilombero rice, a tasty variety that is very popular. Unfortunately the scheme does not grow Kilombero in the winter season as it takes too long to mature. Instead Pussa rice or TCG10 is grown, which has a shorter growing time. After the summer harvest between the months of July to September the price of Kilombero is down at approximately MK80/kg (\$0.57/kg). In late September heading into October prices go up and Kilombero sells for MK100/kg (\$0.70/kg). Later, in November and December the price peaks between 120 (\$0.85) and 140 (\$1.0) kwacha per kilogram. Buyers struggle to pay for rice at the higher end of the scale and therefore it is more common for sales to occur soon after harvest.

Buyers use many strategies to obtain lower prices. After the summer harvest the price for rice in the country is low as the market is saturated. Farmers sell at low prices. Around this time, traders drive around in pickup trucks and tempt farmers into selling their rice at very low

prices using the sight of cash as enticement. The president tries to organise the sale of rice on the scheme, and establishes a set price. But as the informant explained, traders will wait several months until rice prices have gone up and then fight for the old prices established earlier in the season when the price was lower. *“For example, he might meet the buyer in March, agree on a price of 80 (\$0.57) for Kilombero. The buyer comes late however, like in October, when the price is up to 120 (\$85) per kg”* (Trader, 18.11.09).

Farmers Swindled in 2007

In 2007 a buyer organised the purchase of rice worth approximately 5.6 million kwacha (\$40,000). The buyer made an agreement with the WUA for payment of the rice at a later date. After the rice had been transported away and sold, the trader did not pay, and many farmers lost money. This man was later arrested and there remains a court case till today over the incident. The same buyer committed several other crimes in other parts of the country in the same period. The farmers had originally made a collective decision to sell the rice on loan to the buyer. Even though some members wanted to take legal action against the WUA, the majority could not hold the WUA accountable, as the whole process had taken place with their knowledge done in a transparent and open manner. That same year, farmers were unable and were mostly excused from paying the annual plot fees into the revolving fund. In 2008 however, to make up for the prior year's deficit, the members decided to pay double the set fee and the WUA collected near to 1.5 million kwacha (\$10,700). One particular Zambian buyer is held in high regard by farmers on the scheme. This particular buyer has purchased rice on a consistent basis for many years, and in the last 2 years, has purchased close to 20 million kwacha's (\$142,800) worth of rice. This year in 2009, he was unable to buy rice after spending lots for the purchase of tobacco. (Trader, 18.11.09)

7.4.2 The Responsible Middle Man

It was at a meeting on the 14th of November in the WUA meeting hall where I first gained greater insight into rice business on Domasi. It was with this information that I was able to build a more complete picture as to how rice was sold on Domasi scheme. I observed the president carrying a large amount of money in a ruck sack, and delivering it to a man dressed in blue worker overalls. I soon discovered that the man in the blue overalls was an assistant that worked personally for the president. The money in the bag was the president's own money. He purchases the rice on the scheme at a set price from the farmers and then sells it to the buyer. This situation is common place on Domasi and has been done this way for some time. Several leading figures on the scheme such as the president, secretary and others have contacts with specific buyers and are involved in this rice business. The middle man, in this case the president, sells the rice to the buyers at a higher price. According to sources, in the majority of cases, the rice is sold to the buyer at MK5/kg higher than what the middle man buys it for from the farmers. *“...the WUA needs to subtract five kwacha (\$0.035) for every kilogram sold to pay for labour costs. Very often the buyer does not stay here at the scheme or use his own labour, and hence the WUA provides its own labour”* (informant, 22.10.09) . Based on discussions with various individuals, there does not appear to be any disagreement towards this arrangement. *“I think it is a good thing as farmers, they have a market through him”* (farmer, 14.11.09). Farmers will sometimes complain about the prices at the mill. *“They may have heard something”* (Trader, 18.11.09). The farmer may suspect that his rice is being sold on for a lot more, or feel he is not receiving a fair rate. All business relating to the sale of rice must go through the president. *“If I find a buyer, that buyer must first meet with the president, who will act as a witness to the transaction. This prevents farmers being exploited....”* (Trader, 18.11.09). The president appears therefore to make an effort to control

and regulate rice sales on the scheme to reduce the incidence of farmers being exploited by traders from the towns.

7.5 Conclusions

It is quite unclear from the research carried out, to what extent previous periods of control by government inform land tenure or ownership on the scheme. Many users hinted at the apparent honesty and consistency with which the current leadership deals with land tenure issues. While the WUA is seen as fair, the underlying reasons may emerge as a result of authority over plot holders. The plot holders, by virtue of prior appropriation, also hold powerful plot rights. After the democratic referendum the strict controls by government forces broke down opening the door for some users to place ancestral claims on the land. These claims are not explicit in the public sense but present powerful underlying forces. Gender representation in land tenure on Domasi offers a useful means by which inheritance in matrilineal settings is effected, and offers a window of opportunity to observe inheritance patterns. Within new land and water laws women in areas like Domasi may stand to lose rights.

Plot accumulation is one inevitable consequence of liberalised policies such as IMT. Much literature points to the way resources are captured by local leaders as part of power shifts. On Domasi, empirical data indicate uneven plot ownership ratios, often WUA leaders owning a larger share, mechanisms like renting furthering accessibility. Within the local logic it is considered rather normal and almost a privilege for patrons to have greater access and ownership of plots. An affluent patron is one that can serve the needs of many clients, someone whom is reliable and dependable upon in times of need. The chief on the scheme also owns a large number of plots and is considered a patron in his own right. The privileges accorded to the chief by the WUA are essentially a measure used to reduce the incidence or opportunity for noncompliant members to use forms of co-optation during disputes and conflict. In essence the institutional capture of the WUA by these leaders or local elite manifests itself in the concentration of plots in the hands of a few. It provides further evidence for a particular form of governance that is synonymous of 'big man' leadership culture.

The president is perceived as a fair patron, not one that seeks to maximise profits at the expense of relationships. Patron-clientage is merely a means by which interpersonal interaction is structured. To be more specific, the president uses various speech acts, both to portray his image as the responsible patron but also to establish his authority, which is informed by a commercial agricultural orientation that was previously the responsibility of the irrigation scheme manager. Also his emphasis on transparency and democratic/participatory considerations presents a contrast to traditional authority, which takes care of its own clan and assumes authority on the basis of seniority and ancestral claims.

While all financial transactions concerning the marketing of rice and fee payments between farmer and WUA are recorded, the financial transactions and particulars of costs appropriated by the WUA were not disclosed. These private operations were never challenged, except in statements expressed by the clients of patrons that were not in power. Here the main opposition are close relatives of the chief, a patron on the scheme in his own right. In view of patrimonial societies, it is quite common for the opposing factions, or opposing patrons to use a democratic clause or what could be termed a democratic escape hole, to try and prosecute the controlling patron, in this case the president. In higher political arenas at the national level these contests are often fought in response to constitutional clauses or other democratic terms of office. No accounts were observed whereby Domasi farmers interfered or probed the

financial accounts of the WUA. This is because while users are likely to share patron-client relations with these leaders in the first place, it is common to let a third party like the government undertake such tasks.

With respect to rice and sales, the rice mill provides the focal point for much of the rice marketing that takes place on the scheme. This is the location where buyers will source rice and find the necessary labour available for packaging and loading. It provides the interface whereby a large majority of the financial transactions occur, and thereby attracts a great deal of attention. Over a period of time, the lucrative business of rice marketing has been basically captured by local WUA leaders. These leaders perform the role of middle men, connecting local producers with larger buyers from outside the area. This 'capture' of the local market might be perceived as harmful if viewed within the context of democratic and egalitarian governance. In retrospect, it may be more appropriate to analyse actions through local practices of patronage. The middle men (patrons) perform a useful function for the farmers (clients) by sourcing buyers and setting the prices. In effect they try to regulate rice marketing on the scheme, in order to prevent buyers taking advantage of cash hungry farmers. While they do to some effect regulate rice sales, they are not always successful. Buyers have strategies they can use to take advantage of the system. But assuming the mark up rate (5MK) is maintained for every kg of rice sold through a middle man, clients are assured their middle men are not trying to capture too large a stake. In this respect, the local patron-client setup offers a safe and effective mode by which rice marketing can take place.

8 Conclusions and Recommendations

8.1 Conclusions

In this chapter I try to draw out the main findings from this study and present recommendations based on these findings. I address mainly the issues that will help to answer my main research questions. Specifically this relates to which strategies and practices key actors on the scheme apply during the unfolding process of IMT, what outcomes their actions lead to in terms of the IMT aims of equitable water distribution, sustainable maintenance and accountable governance, and the analytical framework that can be used to explain these outcomes. The proposed effects of IMT are bracketed into three main elements namely; equitable water distribution, sustainable maintenance and accountable governance. Below I have summarised how IMT interventions or policy documents ascribe these positive traits to irrigation reform. The main argument underlying transfer is the accountability shift from upwardly accountable government workers towards a downwardly accountable group of farmer leaders. In reality these processes are often transformed by the leadership, irrigators and government representatives, through various practices and strategies. Below I present the different ways Domasi actors reach various outcomes relative to governance, maintenance and operation and try to offer explanations for these outcomes using various frames of analysis.

8.1.1 Intervention and WUA Setup

I examined the external intervention on Domasi scheme in order to determine to what extent it had informed the current WUA setup and then analysed how these processes worked in practice. Through the establishment of a water users association, the state or agency implementing change, can legally register the entity such that it is recognised in national law. On Domasi this job was done by IFAD through the SFPD programme, whose responsibility it was to formally register user organisations on Malawi's 16 smallholder government schemes. Intervention like this places a strong emphasis on forming recognisable organisations that are composed of different layers (committees) and distributing responsibilities both horizontally and vertically through the organisation. By dispensing these roles to chosen leaders and members of the organisation, each group becomes accountable and responsible for its own specific task. In this manner, the formal structures co-existing side by side will meet all the needs for effective irrigation management leading to accountable forms of governance. In order to avoid instances of corruption WUA committee members are strictly supposed to perform in the WUA on a voluntary basis. This in theory will prevent capture of the WUA by the money hungry elite whose sole aim is to take advantage of their position.

The NGO Concern Universal was contracted to carry out trainings with elected WUA leaders, various local leaders and government staff, on various aspects related to the management and functioning of a WUA. In practice, the trainings only targeted a small group of leaders who then failed to reciprocate and train more farmers themselves due to lack of a worthy incentive. In retrospect accounts suggest the trainings helped the WUA assemble and perform some basic local functions. In 2002, executive committee members were democratically elected and an organisational structure formed. The old SMC was used as a stepping stone for WUA formation. Accounts indicate that underneath the facade of irrigation reform and the organisational face lift, prior forms of governance prevailed. The organisation underwent a structural change in 2005, with the addition and subtraction of several committees. While these adjustments may have stemmed from real need at the time, my field work in 2009 suggests this is not longer the case. Committees in the formal sense were barely

visible if at all except for perhaps the executive committee. Many members having dropped out due to lack of work availability, interest or worthy incentive.

It becomes very evident that users have altered the imposed formal rules and structures and adapted them in various ways to suit the local working conditions. Many of the formal arrangements did not reflect real needs of the users. More specifically, irrigation managers generally are required to continuously adjust to shifting circumstances and tactically manoeuvre new situations. They cannot adhere to formal systems and sets of laws that are prescribed in operational plans, for this is unrealistic and not related to the working context. (Oorthuizen, 2003) The WUA president and other senior managers on Domasi scheme demand that specific functions are performed in order to create an effective organisation that can meet the service needs of the members. This in itself is an attractive quality and may indicate the president of DWUA possesses sound managerial and business skills. In order to achieve specific objectives the president allocates responsibilities to a number of committee members. Once all needed positions have been met, there is what I like to term an employment vacuum, whereby members are no longer needed. This may affect access to incentives which appear to be awarded on the basis of performing a valuable role. Incentives and work affairs appear to be structured along patron-client relations, which would better explain the vertical flow of exchanges between individuals in the WUA.

8.1.2 The Elections: a Moment of Democratic Accountability?

In the fourth chapter I presented a situational analysis of power relations through the study of one critical event: the WUA elections. In the following section I analyse to what extent the elections were about the operational performance and democratic accountability of leaders. I look at which types of authority contested the elections and analyse the ways in which actors did this. In IMT policy prescriptions, elections are supposed to offer irrigators a definitive democratic means for judging the operational performance and accountability of the office bearers. The discourse follows that of the anti-corruption ideology whereby leaders are made responsible for everyday service provision and management of the scheme. Elected into power, leaders are supposed to feel accountable towards the users they have been asked to serve, and in turn the users should hold their leaders accountable for the service provision. In the past the scheme manager was never elected. Now members can elect their own president and it is presumed users will make choices based on performance and accountability measures.

On Domasi, the lead up to the elections revealed that there are in fact two sources of authority working on the scheme; the WUA and the TA. The elections and the lead up, offered a medium by which different groups could contest one another and perform acts of authority. In the lead up to the two elections attempts in 2009, contestation arose as a result of TA interference in the process. These processes were highlighted by various speech acts utilised by patrons from the respective divisions. The TA objected indirectly, managing to postpone the elections after which he then ordained them, in the process publically claiming control over the scheme during that period. In order to stay in office the president presents the WUA as the ultimate authority on the scheme and portrays himself as a democratic and accountable leader, in response to these competing power claims. Accusations against forms of non-democratic WUA governance were expressed by several individuals whom were closely related to the chief. It is common in patrimonial settings for opposing groups to use democratic modes of redress in order to prosecute the controlling patron. In national level politics these types of contests are often fought in response to constitutional clauses or other democratic terms of office.

The TA and WUA display a particular form of authority that was previously executed by the scheme manager. The elections that eventually took place in October were done in a democratic and transparent manner whereby candidates were blindfolded to prevent the possibility for bias and members could vote freely for their candidate of choice. To some degree voting was informed on the basis of performance of candidates in office but it is unclear by what margin this took place. The government was needed to supervise the election process to prevent the clash of authorities from surfacing. The government thereby is accorded the role of impartial arbitrator, a role that is likely informed on the basis of perceived need, ritual or past practice and because users are likely to share patron-client relations with these leaders in the first place.

8.1.3 Is Maintenance Sustainable?

The fifth chapter describes which maintenance activities were undertaken by the WUA during the period of the study. I present practices of cost recovery and routine maintenance work and relate it to the operational performance of scheme infrastructure. In order to determine whether sustainable maintenance is achieved a conceptualisation or analytical frame of sustainability was required. In chapter 2 I present three mechanisms that militate against sustainable maintenance of infrastructure by users, and argue that sustainability of an irrigation scheme must be perceived through the window of user capacity to perform routine maintenance and periodic repair (Murray-Rust and Vermillion 1989, pp.80-84). The fee recovery rate for the 2009 summer season was between sixty and eighty percent, a high rate achieved as a result of efficient recovery methods mainly through the efficient management and organisation of a team of block leaders. The perception by users that the O&M service is good is the main reason for the high fee recovery rate, while the opportunity to earn cash through participation in maintenance projects is seen to be highly rewarding. While the fee has risen in the last decade since the start of management transfer, there doesn't appear to be the perception that the fee is too high or that it includes unnecessary overhead charges. Increasing the plot fee and instituting a dry season fee are both actions that were presented by the president as means of further financing WUA operations. These mechanisms if implemented would likely further the WUA's capacity for routine maintenance.

In the space of three months, over a quarter of the main transport routes in the scheme were lightly maintained, the headworks were completely de-silted whereby a large amount of silt and sediment was removed, 150-200 meters of a secondary canal was structurally maintained and several hundred meters of secondary canal was cleared from weeds. The canal clearing and reshaping would improve the operational performance of certain parts of the scheme. There were however other areas that required attention, but were outside the capacity of the WUA to implement in one season. As routine maintenance activities address different areas of the scheme each year, the WUA in this respect does possess the capacity to routinely manage the scheme in an operational state. It is likely that the continued structural degradation of various larger structures will take place over time, ultimately requiring larger investments and technical input. Due to the nature of large scale irrigation schemes, it is unfair to expect users to cover the cost of financing the rehabilitation and structural maintenance of large sections of infrastructure or to possess the technical and managerial skills needed to perform these large works.

8.1.4 Is Water Distribution Equitable?

Transfer of management to users improves the accountability relations between users and managers, thus leading to more effective and accountable water distribution. There is a reduced ability for bribes as managers feel a greater sense of accountability to various sets of users. Also managers need to allocate water equally or risk losing plot fees from unsatisfied

farmers. Analytically, I define equitable distribution as the ability for users to gain access to sufficient quantities of water that permits them to secure a harvest, and distribution has been performed inequitably in the case that farmer yields are negatively affected, while simultaneously WUA managers had the available capacity to respond effectively with various measures, but failed to do so. This is assuming of course that sufficient routine maintenance has provided a system that is operational in the first place.

The winter command area is rotated from one area of the scheme to another every year. This is done to allow soils time to rest but also in order to award the surrounding scheme communities fair and equal access to command areas over the space of several years. Additionally, when the command area has been set, members owning plots in this zone have to share a proportion of their plots with members from outside the zone. This mechanism offers members the opportunity to access plots each dry season improving equity conditions on the scheme. Conflict and contestation of water emerges within the water scarce period. Practices and strategies for obtaining access to water at the field level prior to scarcity had little to zero impact in reducing the equity of water distribution. Irrigators main objective is to get water to plots as opposed to structuring use through various controls.

Subsequently, mechanisms employed by the WUA to organise distribution in the face of scarcity, were met with difficulties but overall indication result in improved equity and efficiency. Two water guards employed succeeded in concentrating dwindling water supplies into various portions of the command zone raising distribution efficiencies and securing downstream users access to sufficient supplies. The process was hampered by an accusation of involved bribery by one guard subsequently leading to his dismissal, and ad-hoc system tampering and water abstractions by users outside of guard duty hours most notably at night. The reduced guard activity likely resulted in a reduced distribution efficiency, however the system abstractions performed outside guard hours were likely an essential coping mechanism to secure access to sufficient water flows, in response to the lack of effective control measures set in place by WUA management.

As the harvest season approached, less water was required and consequently demand for water fell. All users managed to secure a harvest the foregoing scarcity appearing not to have affected yields by any margin. In this sense, the WUA and users appear to have instituted only the most necessary measures in order to guarantee a harvest and by doing so minimising it's transaction costs. It limits the allocation of resources towards achieving greater distribution efficiency and equity, placing much greater emphasis on routine maintenance. While maintenance offers a means of achieving operational performance, it does not guarantee effective distribution. The WUA could certainly address some of these issues. One explanation is that members remain largely uneducated on water management and distribution methods and the scheme infrastructure does not offer the means to apply a scientific way of distributing water in accordance with crop water requirements.

8.1.1 Local Management Styles and Capture by Local Elite

Land Tenure

The process of irrigation turnover is meant to successfully allocate users legal ownership over infrastructure and land on irrigation schemes. By virtue of the improved access and ownership over land and capital users are instilled with a greater sense of responsibility, resulting in more informed land allocation decisions and greater control as they are now the owners of the property. Legal limits on the number of owned plots per member will regulate and prevent users from using various mechanisms by which to accumulate land. As land is the property of the users under the jurisdiction of the WUA, it rules out the opportunity for competing land claims from other authorities that may contest ownership rights.

On Domasi, the scheme is being leased from the government. During handover IFAD had intended to provide sublease papers for every member, but this was never carried out. Legally registering plots would likely expose the disproportionate levels of plot ownership that existed, a factor that probably led to restraint on this action. Consequently, while the whole scheme is legally accounted for, individual plots are not. During the transfer program, members maintained the plot ownership patterns that had existed previously on the basis of prior appropriation. Therefore, disparities in plot holdings that existed prior to transfer were propagated directly into the new system of WUA governance. Local leaders, both on the WUA and TA own a greater number of plots than normal users. The DWUA constitution does not make any reference to maximum land holding size, only stating members have the right to a profitable landholding size according to agreed criteria for land allocation. Leasing plots is a wide-spread practice on the scheme furthering plot concentrations and the constitution similarly makes no reference to these aspects. The transfer program has done little to adjust the disproportionate share of plot holdings and the ambiguous declarations in the constitution have offered avenues whereby the elite users are able to improve their access to plots through various means such as leasing plots from other users. Interveners often view TAs as an obstacle to development and corporate performance due largely because chiefs prefer to take care of their own needs before those of others. However new development policy has accorded TAs a larger roles in community development efforts. The chief in the Domasi area is provided with an advisory or ex officio role by the WUA, informed partly on the basis of these new amendments, but also in order to strengthen the WUA's authority in the case of conflict with scheme users.

Plot accumulation is one inevitable consequence of liberalisation policies such as IMT and is one mechanism for explaining why land is captured by the local elite. By granting liberalised conditions the original regulations preventing greater access disappear. This scenario opens the door for local powerful irrigators to claim plots in their name or in the names of close family members. In patrimonial societies like Malawi, the style of governance tends to structure around patron-client relations. Within this frame of observation, it could be perceived as being relatively normal and a privilege of leaders to own more plots.

Leadership Practices

IMT promises users will be able to make their leaders accountable. Through various means such as through the process of elections, users can claim for their leaders to manage affairs in transparent and equitable ways. In exchange, leaders can derive accountability on behalf of the user and subtract user fees through their democratic performances. The president would interact with different groups of users through different means. Various meetings including general assemblies, farmer discussions, dispute settlement meetings and trainings offered a stage whereby the president would perform various roles and speech acts. It was through these performance acts that the president was able to present himself as a democratic, transparent and accountable leader. These acts served to inform the positive responses to questions about the WUA leadership and the president in particular. However, while these responses may be largely biased in relation to presidential speech acts, to a certain degree, answers were also reported on the basis of operational performance. In these instances, leader behaviour was linked to deliberate activities that were perceived to benefit the users. In instances such as trainings where by the president aims to enlighten his followers over proper farming techniques, his actions are likely informed by a commercial agricultural orientation that was previously the responsibility of the irrigation scheme manager. In his efforts to portray his and the WUAs transparent and accountable qualities, he presents a contrast to traditional forms of authority, which takes care of its own clan and assumes authority on the basis of seniority and ancestral claims. It may be enlightening to again borrow from the

patronage explanation, whereby we observe the president use various speech acts both to portray his image as the responsible patron but also to establish his authority.

Rice Marketing

On Domasi the presence of an electric mill, donated from IFAD as part of a package of intervention, presents another dimension to irrigated farming; rice marketing. The WUA leaders operating the mill would do so in an accountable and transparent manner, using the proceeds from the milling of rice to finance other activities on the scheme such as maintenance. What has emerged are senior WUA leaders functioning as middle men. They form the vital link between the farmers and the buyers. The mill and office represents the interface whereby these three actors meet. The middle men perform a valuable function for the farmers through sourcing appropriate buyers and setting the prices. In effect they offer a means of regulating rice marketing on the scheme, preventing buyers taking advantage of cash hungry farmers. While the middle men to a large extent regulate the sale of rice, they are not always successful. Buyers have strategies they can use to take advantage of the system. As long as the mark up rate is maintained for every kilogram of rice sold through a middle man, farmers are assured their leaders are not trying to increase their stake in the deal.

In neopatrimonial settings like Malawi, there is by definition a weak legal system. In these settings, institutions are sometimes captured by a leader through his control over appointment or dismissal processes, or through patronage and clientelist practices (Cammack, 2007, p.1). Overall, the lucrative business of rice marketing that became available during the IMT transfer process, has essentially been captured by the powerful local elite. If analysed from a democratic standpoint the actions signify a gross disregard for democratic forms of governance, leaders basically profiteering on the backs of farmers. I disagree however with this notion and argue that patron-client business dealings on Domasi offer an effective means of both controlling the sale of rice and sourcing good quality buyers. Of course one needs to ask the question, to what extent are the business deals truthful, and are the farmers fully informed. In order therefore for this 'capture' to work, there needs to be a leader that is willing and capable of exercising authority, in a fair, honest and competent manner.

8.2 Recommendations

Extend the Role of Government

The research on Domasi scheme unveiled a number of issues that stem from implementing liberalisation policies. What was noticeable was the way the government was called in to supervise the elections playing the role as impartial arbitrator, a role they were both expected to play and role that was naturally accepted by scheme citizenry. As part of the privatisation process, government should and must have a role in the process. The scheme is a public good and consequently government not only has the right to arbitrate but it is also their responsibility to intervene and monitor its use. Similarly, in this respect it is imperative for government to monitor WUA fiscal apparatus. In order to enforce the accountable financial management of WUAs, the government needs to take a more active role in monitoring the WUA's financial accounts. These activities could be performed by the appropriate staff from district level offices in Malawi. On a broader level, there is also the need to strengthen the involvement of civil society groups in irrigation reform processes, something that help to ensure accountability on the part of WUA leaders.

Introduce Calibration Techniques

DWUA is limited in its capacity to carry out an irrigation schedule and consequently control the flow of water during the water scarce dry season. In this manner, I argue further training is needed to equip WUA managers with the knowledge and capacity to carry out adequate

water rotation schedules. Similarly, steps need to be taken to equip managers with a means of accurately determining water flows both on the scheme and in the river, in order for them to better calibrate irrigation command in the dry season.

Ideas for Further Research

Currently there is limited available grounded evidence for the way irrigation reform in Malawi has played out in practice. More in-depth research is needed that studies the impacts of irrigation reform on Malawi's smallholder irrigation schemes. These efforts would supplement previous studies and enrich the overall documentation of transfer efforts. The cases would offer reform pundits critically informed empirical accounts of the outcomes of various interventions, enabling them to better design, operate and manage future reform processes.

References

AHT International GMBH., 2001. Smallholder floodplains development programme, Final Report.

AHT GROUP AG, 2010. Management and Engineering Group.[online] Available at: <<http://www.aht-group.com/index.php?id=150>> [Accessed 28 July 2010]

Aw, D. and Diemer, G., 2005. Making a large irrigation scheme work: a case study from Mali. Washington, DC, World Bank.

Bishop-Sambrook, C., 2007. Targeting the Rural Poor: The experience of the Irrigation, Rural Livelihoods and Agricultural Development Project in Malawi. Learning and Knowledge on Innovations in Water and Rural Poverty Reduction Project, IFAD.

Bolding, A., 2004. In hot water: A study on sociotechnical intervention models and practices of water use in smallholder agriculture, Nyanyadzi catchment, Zimbabwe. PhD thesis. Wageningen University, the Netherlands.

Bolding, A. Manzungu, E. and Zawe, C., 2004. Irrigation policy discourse and practice: two cases of irrigation transfer in Zimbabwe. In: Mollinga, P. and Bolding, A., (eds) The Politics of Irrigation Reform: Contested Policy Formulation in Asia, Africa and Latin America. Ashgate, Aldershot, UK, pp.166–206.

Bryman A., 2004. Social Research Methods. 2nd ed. Oxford: Oxford University Press

Cammack, D., 2007. ‘Big Men’, Governance and Development in Neopatrimonial States. Good Governance, Aid Modalities and Poverty Reduction: Linkages to the Millennium Development Goals and Implications for Irish Aid, Research project the Advisory Board for Irish Aid.

Chilivumbo, A., 1971. The Response to Planned Change: a Study of the Rice Scheme in Chief Mwambo's Area (Lake Chilwa, Zomba, Malawi). In: Cahiers d'études africaines. Vol. 11 N°42. . pp.314-326.

Chirwa, W.C., 2002. Land use and extension services at Wovwe Rice Scheme, Malawi. Development Southern Africa, 19: 2, 307- 327

Ferguson, A. and Mulwafu, W.O., 2004. Irrigation reform on Malawi's Domasi and Likangala smallholder irrigation schemes: exploring land-water intersections. Final Research Report, University of Malawi and BASIS Project, Zomba, Malawi.

Ferguson, A. and Mulwafu, W.O., 2005. Irrigation reform in Malawi; Exploring Critical Land-Water Intersections, International workshop on African water laws: Plural Legislative Frameworks for rural water management in Africa, Johannesburg, RSA, pp.26-28.

Ferguson, A. and Mulwafu, W.O., 2007, “If government failed, how are we to succeed?” The importance of history and context in irrigation reform in Malawi, The Interface Between Community-Based Water Arrangements and Integrated Water Resource Management Reform in Africa. Wallingford, Oxford: CABI Publishers.

Frederikson, H.D., 1995. Considerations in the transfer of responsibilities for services in the water resources sector. Selected papers from the International Conference on Irrigation Management Transfer. Wuhan, China.

Gans, H.J., 1968. The participant observer as a human being. An Introduction to Field Research, London 1982.

Garces-Restrepo, C.; Vermillion, D. and Muñoz, G., 2007. Irrigation management transfer. Worldwide efforts and results. FAO water reports 32, Rome, Italy.

IFAD. 2005. Irrigation, Rural Livelihoods, and Agricultural Development Project (IRLADP), Appraisal - Working Paper 1: Irrigation and Water Management, Malawi.

Interviews., 2009. Interviews conducted on the Domasi irrigation scheme from September 2009–November 2009.

Kishindo, P., 1996. Farmer turn over on settlement schemes: the experience of Limphasa irrigated rice scheme, Northern Malawi. *Nordic Journal of African Studies*, 5(1), pp.1–10.

Kishindo, P., 2003. Community Development in Malawi: Experiences at the Grassroots. *Development in Practice*, Vol. 13, No. 4, pp.380-387.

Long, N., 1989. Encounters at the Interface: A Perspective on Social Discontinuities in Rural Development, Wageningen Social Studies 27. Wageningen University.

Long, N., and van der Ploeg, J. D., 1989. Demythologizing planned intervention: an actor perspective. *Sociologia Ruralis* XXIX (3/4), 227±249.

McCord, A., 2004. Setting the Public Works Wage in Malawi: The Challenges and Contradictions of Social Protection, Self Targeting and Market Distortion in the Context of an Imperfect Labour Market.

Murray-Rust, H., and Vermillion, D., 1989. Efficient Irrigation Management and System Turnover. Volumes I-III, International Irrigation Management Institute, Colombo, Sri Lanka.

Narain, V., 2003. Institutions, Technology and Water Control: Water Users Associations and Irrigation Management Reform in Two Large-Scale Systems in India. Orient Longman, Hyderabad.

Nationmaster., 2006. Data accessed at: <http://www.nationmaster.com/>.

Niku, B.R., 2002. Water Users Associations in Irrigation Management: Case of Andhra Pradesh, South India. Opportunities and challenges for collective Action.

Nkhoma, B.G., and Mulwafu, W.O., 2004. The Experience of Irrigation Management. Transfer in Two Irrigation Schemes in Malawi, 1960s-2002. *Journal of Physics and Chemistry of the Earth, Parts A/B/C*, 29(15-18), 1327-1333.

NSO., 2008. Population and Housing Census. National Statistical Office, Zomba, Malawi.

Njoloma, H.M., Kita, I., Kitamura, Y., Aoyagi, S., 2009. Situational Analysis of Successes, Challenges and Failures of Irrigation Farming in Malawi: A Case Study Based on Four Major Irrigation Schemes; Bwanje Valley Irrigation Scheme, Domasi Irrigation Scheme, Likangala Irrigation Scheme and Kasinthula Smallholder Sugarcane Growers Irrigation Scheme. *Journal of rainwater catchment systems* 14(2), 35-44, 2009-01.

Ostrom, E., 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

Ostrom, E., 1992 *Crafting Institutions for Self-Governing Irrigation Systems*. Institute for Contemporary Studies Press, San Francisco.

Ostrom, E., and Gardner, R., 1993. Coping with asymmetries in the commons: Self governing irrigation systems can work. *Journal of Economic perspectives* 7(4): 93-112

Peters, P.E., and Kambewa, D., 2007. Whose Security? Deepening Social Conflict over 'Customary' Land in the Shadow of Land Tenure Reform in Malawi.

Peters, P.E., 2004. *Informal Irrigation in Lake Chilwa Basin - Stream Bank and Wetland Gardens (BASIS-CRSP)*, Kennedy School of Government, Harvard University and University of Wisconsin – Madison, USA.

Perret, S.R., 2002. Water policies and smallholding irrigation schemes in South Africa: A history and new institutional challenges. *Water Policy*, 4 (3), 283-300.

Roniger, L., and Eisenstadt, S.N., 1980. *Patron-client relations as a model of structuring social exchange*. Jerusalem: Truman Research Institute.

Straus, A., and Corbin, J., 1998. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Sage Publications, Thousand Oaks, 1998.

Uphoff, N., 1991. A field methodology for participatory self education. *Community Development Journal* 26 (4), 271-285.

Veldwisch, G., Bolding, A., and Wester, P., 2009. 'Sand in the Engine: The Travails of an Irrigated Rice Scheme in Bwanje Valley, Malawi'. *Journal of Development Studies*, 45: 2, 197 — 226

Vermillion, D.L. 1991. The turnover and self management of irrigation institutions in developing countries. A discussion paper for the new program of IIMI. IIMI, Colombo.

Vermillion, D.L., and S.H. Johnson. 1995. Globalisation of irrigation management transfer: A summary of ideas and experiences from the Wuhan Conference.

Vermillion, D. L., Sagardoy J.A., 1999. *Transfer of irrigation management services: Guidelines*. FAO irrigation and drainage paper 58. IWMI, GTZ and FAO, Rome.

Wade. R.H., 1987. The management of common property resources: Collective action as an alternative to privatisation or state regulation. Cambridge Journal of Economics Vol. 11 No. 2

Walcott, F. H., 2001, Writing up qualitative research, Sage Publications

Wellman and Berkowitz., 1988. Relations of production and class rule: the hidden basis of patron-clientage, Social structures: a network approach.

Zaag, P.van der., 1992. Chicanery at the canal: Changing practices in irrigation management in Western Mexico. CEDLA Latin America Studies no. 65. Amsterdam: CEDLA.

Appendix

Appendix I : Discharge Measurements in Main Canal

Date	Section no.	Distance (m)	Average depth (cm)	Width measurements(cm)		Area (m2) side slope 1:69	Area (m2)	point no.	ave time/section	m/s over section	discharge m3/s	discharge l/s	discharge m3/s	discharge l/s
				Bottom width using side slope 1:69	Top									
29/09/2009	section 1	0.00	45.67		210.00		0.70	point 1	0.00		0.28	283.17		
	section 2	5.00	41.83					point 2	12.38	0.40				
	section 3	10.00	45.83					point 3	13.76	0.36				
	section 4	15.00	45.67					point 4	13.91	0.36				
	section 5	20.00	45.67					point 5	14.73	0.34				
	whole sect	20.00	44.93	147.99	210.00	0.78	0.69		54.77	0.37	0.25	251.87	0.28	283.95
06/10/2009	section 1	0.00	64.33		257.00		1.14	point 1	0.00		0.27	268.14		
	section 2	5.00						point 2	21.23	0.24				
	section 3	10.00	65.00					point 3	23.00	0.22				
	section 4	15.00						point 4	23.77	0.21				
	section 5	20.00	64.00					point 5	26.00	0.19				
	whole sect	20.00	64.44	168.07	257.00	1.27	1.14		94.00	0.21	0.24	242.70	0.27	269.50
09/10/2009	section 1	0.00	65.00		264.00		1.17	point 1	0.00		0.17	169.46		
	section 2	5.00	61.00					point 2	34.62	0.14				
	section 3	10.00	67.00					point 3	35.84	0.14				
	section 4	15.00	67.50		279.00			point 4	36.87	0.14				
	section 5	20.00	67.00		279.00			point 5	41.00	0.12				
	whole sect	20.00	65.50	173.61	264.00	1.31	1.18		148.33	0.13	0.16	159.41	0.18	176.67
19/10/2009	section 1	0.00	26.67		177.00		0.37	point 1	0.00		0.13	128.13		
	section 2	5.00	30.00					point 2	14.26	0.35				
	section 3	10.00	35.00					point 3	14.58	0.34				

	section 4	15.00	30.00					point 4	15.75	0.32				
	section 5	20.00	36.00					point 5	16.42	0.30				
	whole sect	20.00	31.53	133.48	177.00	0.49	0.43		61.00	0.33	0.14	141.64	0.16	161.85
28/10/2009	section 1	0.00	27.50		183.00		0.39	point 1	0.00		0.15	145.83		
	section 2	5.00	30.00					point 2	13.20	0.38				
	section 3	10.00						point 3	15.38	0.33				
	section 4	15.00	33.00		193.00			point 4	15.18	0.33				
	section 5	20.00	34.00					point 5	16.83	0.30				
	whole sect	20.00	31.13	140.05	183.00	0.50	0.44		60.58	0.33	0.14	143.87	0.16	163.96
11.11.09	section 1	0.00	24.67		164.00		0.32	point 1	0.00		0.11	107.78		
	section 2	5.00	22.50					point 2	14.93	0.33				
	section 3	10.00	28.00					point 3	20.13	0.25				
	section 4	15.00	27.00					point 4	18.00	0.28				
	section 5	20.00	30.00					point 5	18.43	0.27				
	whole sect	20.00	26.43	127.52	164.00	0.40	0.34		71.50	0.28	0.10	96.49	0.11	110.95
20/11/2009	section 1	0.00	21.33		168.00		0.28	point 1	0.00		0.08	79.14		
	section 2	5.00	25.00					point 2	17.86	0.28				
	section 3	10.00	29.00					point 3	18.93	0.26				
	section 4	15.00	29.00					point 4	19.30	0.26				
	section 5	20.00	28.00					point 5	18.88	0.26				
	whole sect	20.00	26.47	131.48	168.00	0.40	0.35		74.97	0.27	0.09	93.56	0.11	107.36