Striking a Balance (SAB):
Maintaining Seasonal Wetlands and their
Livelihood Contributions in central Southern Africa

Baseline PRA Report

for

Wetland Demonstration Sites,
Simlemba Sustainable Rural Livelihoods Project,
Kasungu District, Malawi

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The project is a demonstration project of the Wetlands and Poverty Reduction Project of Wetlands International and it is carried out with financial support from Wetlands International under its Wetlands and Poverty Reduction Project financed by the Dutch Ministry of Foreign Affairs (DGIS).

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1. INTRODUCTION

1.1 Background

"Striking a Balance: Maintaining Seasonal Wetlands and their Livelihood Contributions in Central Southern Africa" is a 30-month project to explore how to manage seasonal wetlands in Zambia and Malawi in a sustainable way. The project was initiated under the management of Wetland Action in partnership with Harvest Help and Find your Feet and funded by the Dutch government through Wetlands International. In Malawi a local partner NGO, Malawi Enterprise Zone Association (MALEZA), is responsible for field implementation of the project activities in the Simlemba Traditional Authority area in Kasungu District. The project supports the overall on-going wetland activities of the Simlemba Sustainable Rural Livelihoods Project, which began in mid 2005, and is run by the same NGO.

Three communities have been chosen in the Simlemba area for intensive work on identifying ways of achieving long-term sustainable use of *dambos*/wetlands to contribute to poverty reduction. It is envisaged that livelihoods will be enhanced in various ways – food production, crafts, water supply, cash income - as well as ensuring the environmental sustainability of the area.

CAPS Msukwa (herein called consultant), trading as Development Technical Assistance Services (DeTAS), was contracted to conduct a study in the three target village communities in Simlemba area, namely Katema, Malawila and Chiotha. The overall aim of the study was to generate a baseline, which can be used for monitoring the project's progress. The baseline assessment had two parts – a participatory rural appraisal (PRA) and a questionnaire survey; a separate report has been produced for each part.

This report documents the findings of the PRAs conducted in the three village communities. The report has four sections. The first section provides an introduction to the project and the PRA study, the second section provides findings from Katema village, the third section provides findings from Malawila village and the fourth section provides findings from Chiotha village.

1.2 Aims and Terms of Reference for the PRA Assessment

The aim of the study was to conduct a baseline assessment in three village communities in the project area using a PRA format prepared by Wetland Action. The PRA was planned to involve a half-day at each site, involving 8 – 10 members of the village community selected from different socio-economic categories of the community. Specifically the PRA assessment sought to:

- obtain a general understanding of the role of wetlands in the livelihoods of the community as a whole, and
- build up an environmental / natural resource and socio-economic assessment.

The following is an outline of the specific tasks related to the PRA:

- Arrange for the printing (multiplication in good order and sufficient numbers) of the PRA guide;
- Liaise with the Project Manager in Nkamenya and agree the timing of the fieldwork for the baseline assessment;
- Lead the field work, by undertaking training of the four project staff in the methods required for data collection – PRA, lead the PRA work with the assistance of one or two of the project team; and
- Write a draft report of the PRAs for each village and discuss them with the project team before leaving the field area.

1.3 Methodology of the PRA Assessment

This section outlines the process and key activities conducted during the PRA assessment.

- Training of the project staff involved in the assessment:
  The consultant spent one day training the project staff involved in the PRA for the baseline assessment. The training included a discussion on the rationale and principles of PRA and a discussion of the PRA format provided to ensure that they understood the scope of work

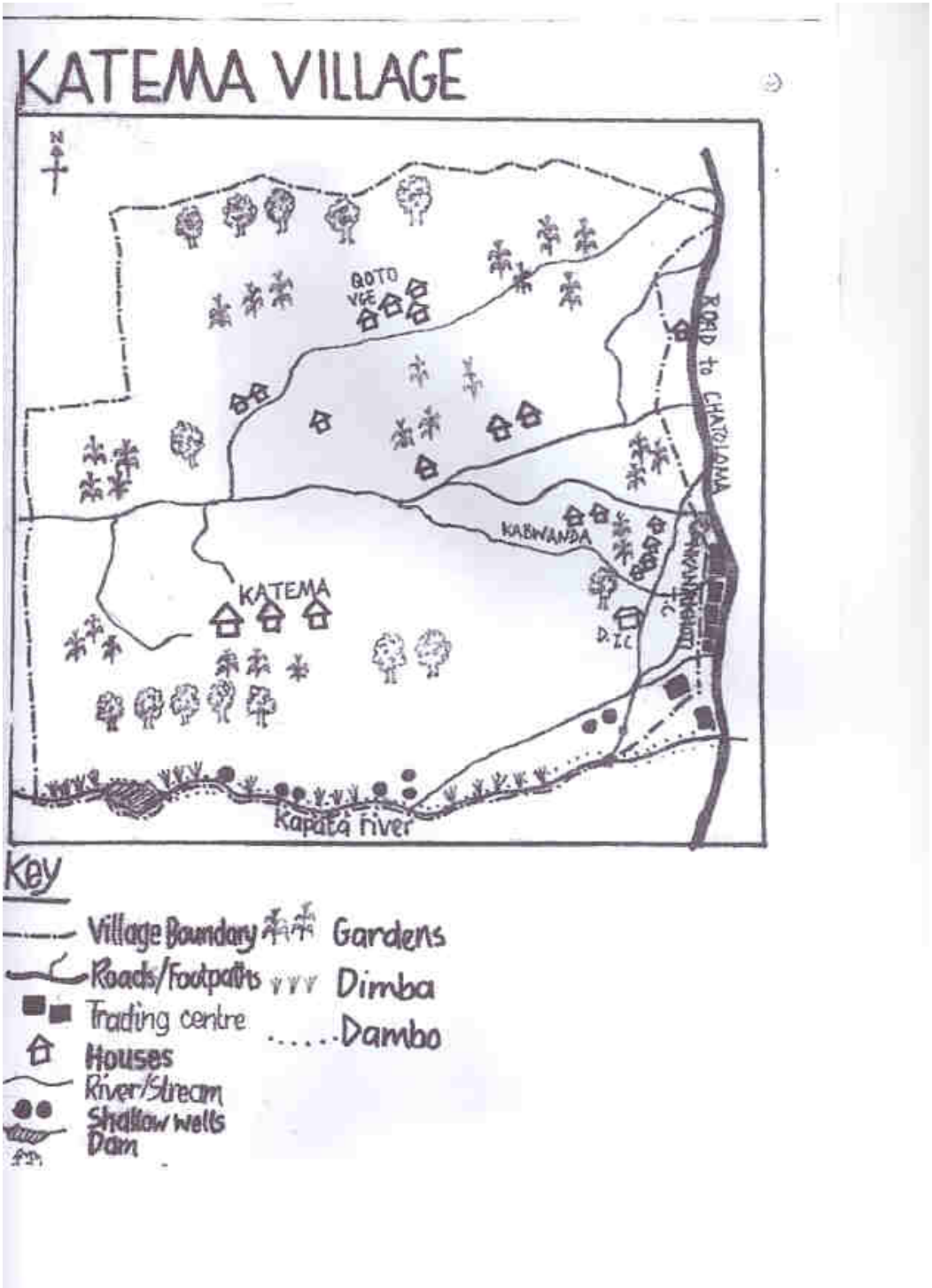
- Arrangements for fieldwork:
  These included briefing the village leadership (village head persons together with either some of their counsellors or Village Development Committee chairpersons) on how they would select the people to participate in the PRA assessment; agreeing on the schedule of the assessment.

- Facilitating the PRA process:
  The consultant took the lead in facilitating the PRA process assisted by one of the project staff. In each of the three villages a small team of members of the village community from different socio-economic categories was involved (the numbers were 14 for Katema village, 9 for Malawila village and 10 for Chiotha village).

- The outcomes of the participatory appraisals were recorded and complied into a report.

2. KATEMA VILLAGE

2.1 Resource Map



The following tables provides a summary of the resource map (Table 2.1) and the results of the transect walk (Table 2.2)

Table 2.1: Main resources shown on the resource map: Katema

Major resources in the community area	Livelihoods uses and income uses from each in order of importance	Main beneficiaries by socio-economic status – all or specific sections of the community
Indigenous forest areas	• Firewood • House construction materials • Medicinal plants • Tobacco barn construction materials • Hunting wild animals • Collecting mushrooms • Grazing livestock • Conservation of wildlife	• Women and girls, rarely men and boys • All the people in the village - men and sometimes women • All socio-economic categories of people in the village • Better off male and female farmers growing tobacco • Men and boys • Mostly women and girls • Men and boys • All the people in the village
Dambo (Kapata *dambo*)	• Water (from wells, stream and dam) for drinking and domestic uses • Cultivation of crops for food and income (maize, vegetables, tomatoes, sugar cane) • Collecting reeds and grass for tobacco nurseries • Grazing and water for livestock • Collecting clay for smearing of houses • Fishing • Grazing and watering of livestock • Collecting edible wild plants (*chinaka = edible tuber)*	• All socio-economic categories in the village - women • All the interested people in all socio-economic categories • Mostly men, rarely women • Men and women in the village that have livestock • Women and girls • Boys • Men and boys • Women and girls
Upland fields	• Crop cultivation for food – maize, cassava, beans, groundnuts • Growing cash crops such as tobacco • Livestock grazing	• All socio-economic categories of the village • Men and women who can afford to do it. • Mostly men and rarely women with livestock

Table 2.2: Transect walk: Katema

Land Type	Opportunities	Challenges
Arable land	• Cultivation of a wide range of crops • More uncultivated land which can be left to indigenous forest regeneration • Room for expansion of upland cultivation for crops such as cassava which can do well in poor soils	• Poor soil fertility • Poor rainfall and water storage/infiltration
Village forest area	• Good regeneration of indigenous trees • To plant more trees in bare patches • To plant pasture in some parts of the village forest area • Wild animals are coming back • Controls siltation of wetland	• Livestock predators • How to sustainably manage the forest resources
Wetland	• Damming to trap more water • Stocking the village dam with fish • Expansion of wetland cultivation • Every household has a chance to participate in wetland cultivation	• Water shortage • Poor soil fertility

2.2 Uses of Wetlands by Rank and their Contribution to Livelihoods

Discussion of the use of wetlands was undertaken dividing the PRA groups in two, by gender. Both men and women saw domestic water and crop cultivation as the first and second most important uses. After this, the gender division of labour affected the ranking, with women seeing the collection of wild plants for relish and clay for covering the walls of houses as third and fourth, with men focusing on livestock grazing, reed collection and thatching grass for tobacco sheds.

Table 2.3: Uses of wetland: ranking by men in PRA group: Katema

Wetland uses	Rank (1= most important)	Reasons for this use / purpose to which income put
Water for drinking and other domestic uses	1	Domestic use
Cultivation of crops	2	Domestic consumption and cash sales. The income used for buying fertilisers for upland crops, clothes, other domestic requirements
Livestock grazing	3	Grazing and watering of livestock – sheep, cattle and goats
Reeds	4	Making mats for sale. Money used for buying food, purchases at local market-soap, salt, clothing and other household requirements
Grasses collection and use in tobacco drying sheds	5	Sell tobacco to buy fertilisers, food, clothes, assets - such as bicycles, oxcarts, etc.

Table 2.4: Uses of wetland: ranking by women in PRA group: Katema

Wetland uses	**Rank (1= most important)**	**Reasons for this use / purpose to which income put**
Water for drinking and domestic uses	1	Domestic use
Cultivation of crops	2	Domestic consumption and cash sales. The income used for buying fertilisers for upland crops, clothes, other domestic requirements
Collecting plants	3	Indigenous vegetables and some edible tubers (*chinaka*) and wild fruits for domestic use
Clay for smearing houses	4	Domestic use

2.3 Wetland Rules and Institutions

The PRA assessment revealed that there were some rules governing the use of the wetland for livestock grazing as well as for the management of trees. These are summarised in the table below.

Table 2.5: Wetland use and institutions: Katema

Use	**Rules**	**Enforcer**
Grazing livestock	Cattle should never be left loose. There must always be someone attending to them. There are specific areas of the wetland designated for livestock grazing	Village headman,
Cutting trees	**No cutting of trees in the wetland	Village natural resource management committee and village headman.

*** This is a new rule introduced through the Simulemba Community Initiative for Sustainable Rural Livelihoods Project.*

In general there are no other rules or regulations that influence household access to the wetland. Basically all the households that are interested and have the capacity to use the wetland can do so.

2.4 Social and Wealth Mapping

2.4.1 Social and Wealth Ranking Criteria

The PRA group came up with the following criteria for social and wealth ranking of households in their village:

i. Availability of food throughout the year (‘*mwana alilenji’* literally meaning whatever food a child cries for is readily available).
ii. Possession of livestock such as cattle, goats, chickens etc. for sale as well as ready supply of meat for household consumption
iii. A burnt brick house with iron sheets and cemented floor
iv. Lots of good clothes and shoes
v. Oxcart, bicycles or wheelbarrows

2.4.2 Categorisation of Households in the Village – Wealth / Poverty and Gender of Household Head

Using the criteria outlined above the PRA group categorised the households in Katema village into four distinct socio-economic groups namely: poorest, medium, better off and rich. These are described as follows:

i) Poorest households:

- Perpetually face food shortages, whether there are good or bad rains
- Do not keep any livestock
- Live in mud and thatched houses that often leak
- No oxcart, no bicycle, no wheelbarrow
- Poor clothing, often no shoes

ii) Medium

- Some years they have adequate food supply (particularly in good seasons), in other years they do not have adequate food.
- Keep some livestock, particularly chickens, one or two goats
- Good mud thatched house or brick thatched house
- No oxcart, no wheelbarrow
- Have a bicycle
- Slightly better off clothing

iii) Better-off

- Have food throughout the year except in extreme weather situations e.g. when there is drought
- Keep livestock such as goats, or few cattle, and chickens
- Live in a good brick house with iron sheet; it may have a cement floor or not
- Have a bicycle, an oxcart or wheelbarrow
- Have good clothing and shoes

iv) Rich

- Food readily available, even in times of drought
- Lots of livestock for both sale and food (chickens, goats, cattle etc)

- Good burnt brick house with iron sheets, cemented floors
- Has a bicycle, oxcart or even a car
- Good clothing

The PRA group categorised households in Katema village according to the gender of the household heads and wealth criteria as summarised above. The results are shown in the table below:

Table 2.6: Socio-economic categorisation of households: Katema

Household category by gender	Poorest MHH	Poorest FHH	Medium MHH	Medium FHH	Better off MHH	Better off FHH
Number of households in each category	9	7	13	4	7	0

MHH = male headed household, FHH = female headed household

According to the PRA group, no household in their village qualifies to be classified as rich and none of the female-headed households had even reached the better-off category.

2.5 Wetland Use by Socio-economic Ranking and Gender

A discussion on how households in different socio-economic categories use the wetland in Katema village revealed that generally all the households in Katema village have access to wetlands. Those not using the wetlands are not doing so probably because they are not interested or have no capacity to utilise the wetland.

Table 2.7: Wetland use by socio-economic ranking and gender: Katema

User group	Poorest MHH	Poorest FHH	Medium MHH	Medium FHH	Better off MHH	Better off FHH
None user	1	3	3			
Low users			2			
Medium users		4	5			
High users	8		3	4	7	
Total	9	7	13	4	7	

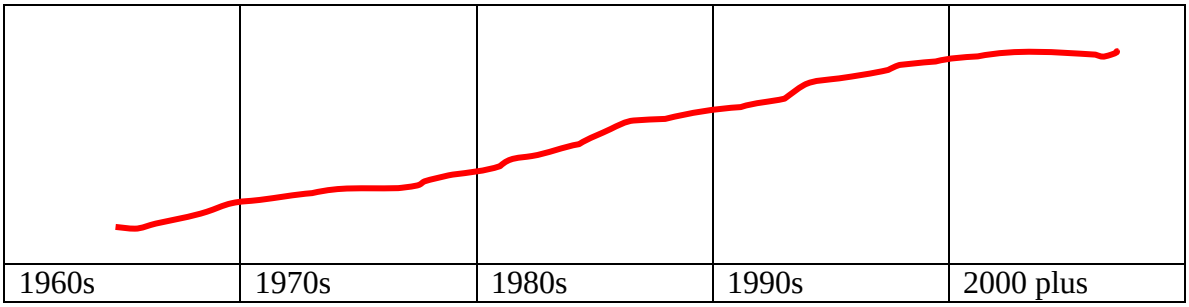
MHH = male headed household, FHH = female headed household

In the last year all the households in Katema village had access to wetland gardens. The actual number who used the gardens was however only 28 (out of 40). In general 33 households will use the wetlands in some way, beyond water collection, in most years.

2.6 History of Wetland Use

In the 1960s and 1970s few households were cultivating wetland gardens. Even those who were doing it were cultivating small plots, which they used to fence. As more people realised the importance of wetland cultivation, the number and size of the plots increased. Now the plots are too big to be fenced. The droughts in the 1980s, 1990s and 2000s forced many households to cultivate wetland gardens to supplement rain-fed food production. (see Table 2.8)

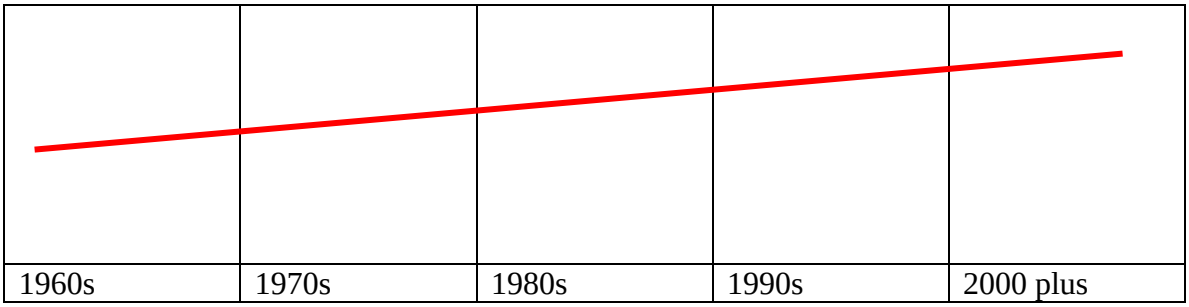
Table 2.8: Wetland cultivation: Katema



1960s	1970s	1980s	1990s	2000 plus

The wetlands have remained an important source of domestic water supply in Katema village. The increasing trend can basically be attributed to the increasing population of the village. According to the PRA group the availability of water in the wetland has been decreasing largely because of droughts or low rainfall supply and overgrazing in parts of the wetland. However, many people have continued to benefit from the wetland water resources for domestic water requirements. (see Table 2.9)

Table 2.9: Domestic water supply: Katema



1960s	1970s	1980s	1990s	2000 plus

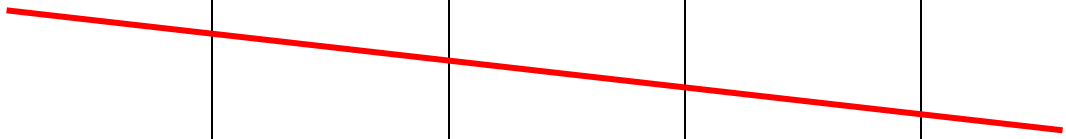
The households have been depending less and less on Kapata wetland for the collection of clay for pottery, as well as for smearing their houses. As the wetland gardens have been expanding, households have had fewer places from where they can collect clay and there is less use of pottery. Some of them have been forced to seek alternative sources. (See Table 2.10)

Table 2.10: Clay collection: Katema

				
1960s	1970s	`1980s	1990s	2000 plus

As a bigger part of the wetland was opened for crop cultivation, indigenous plant species, which were collected by households for different uses, were destroyed. (See Table 2.11)

Table 2.11: Plant collection: Katema

				
1960s	1970s	1980s	1990s	2000 plus

The importance of the wetland for livestock declined from the 1980s mostly because of a big reduction in the numbers of cattle in the village because of a disease outbreak in the 1980s. Furthermore, as the size and number of wetland gardens increased the wetland became less accessible for livestock grazing. (See Table 2.12)

Table 2.12: Grazing and watering livestock: Katema

				
1960s	1970s	1980s	1990s	2000 plus

2.7 Area and Value of Wetland Crops

The importance of wetland crops is summarised in Table 2.13 below. Ranking by both area and value maize was the most important crop planted in the Kapata wetland gardens. The second was beans and the third was tomatoes.

Table 2.13: Crops grown in wetland - ranking by area and value: Katema

Wetland Crop	Use (for sale / or domestic consumption)	Rank by area	Rank by cash income (for ones sold)
Maize	Domestic use and for sale	1	1
Beans	For sale and domestic use	2	2
Tomatoes	Mostly for sale, little for domestic use	3	3
Onions	Mostly for sale, little for domestic use	7	7
Vegetables	Domestic use and for sale	5	4
Irish potatoes	For domestic use, little for sale	8	5
Sugar cane	For sale and domestic use	4	6
Sweet potato	Domestic use and for sale	6	8
Rice	For domestic use	9	9

2.8 Agricultural Calendar

The peak time for activities in the wetland gardens is between February and October (See Table 2.14). Even in the wet season there are some activities in the wetland gardens, particularly those which are drier.

Table 2.14: Agricultural calendar (wetlands): Katema

Crop	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep
Maize	S, I, W	W	-	H	P	S	S	S, W	H	H, P	P	P,
Beans	H	H	-	-	P	S	S, W	S, A	P, H, S	H,S, P	H, A	H
Tomato	H, P	S, A	C, H A	H	P, H, S	H, S,	A, W	H, S	A, S	C, W	P, H S	P, H S, C
Vegetables	P,A, S	W, H	H	P, S	S, A, C	H	P, H, C	A, P, C	P, S A H	P S A H	P S H	P H S D
Onion	H	H	-	-	P	S	S	W	W	H	H	H
Irish potato	H	-	-	-	P	S	S	A W	A W	-	-	H
Sweet potato	H	-	-	-	P S	S	W S	HS	H W S	H W S	H	H
Sugar cane	S	WS	-	-	-	W	H	H	P	PS	S	S P
Rice	S I	W A	I	W	W	H	H	P	P	S	S	S

P = land preparation, S = sow, W = weed, H = harvesting, I = irrigation, A= fertiliser / manure application, C = chemical spraying

The households in Katema village have some free time when considering upland cultivation. These activities are concentrated between October and April (See Table 2.15) However, when considering both the upland and wetland crop production, households in Katema village are fully involved in crop cultivation throughout the year.

Table 2.15 Agricultural calendar (uplands): Katema

Crop	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep
Maize	P	P	S, A	W A	A	-	-	H	H	H, P	P	P
Beans	P	S	S W	S W	H	H	H	-	-	-	P	P
Tomato	P	P	S	W	H	H	H	-	-	P	P	P
Vegetables	P	S	H	S H	S H	H	H	H	-	-	-	-
Onion	P	SA	SA	WS	HS	H	H	-	-	-	-	P
Irish potato	PS	SA	AW	-	-	H	H	H	H	-	-	P
Sweet potato	P	S	S	WS	SW	H	H	H	H	-	-	-
Sugar cane	-	-	-	-	-	-	-	-	-	-	-	-
Rice	-	-	-	-	-	-	-	-	-	-	-	-

P = land preparation, S = sow, W = weed, H = harvesting, I = irrigation, A= fertiliser / manure application, C = chemical spraying

2.9 Contribution of Wetland Crops to Household Income Needs and Food Security

Wetland crops contribute to improved household security in many ways. First, crops such as maize are harvested during the hungry period when the rain-fed harvest has run out. Hence, this covers the food gap period. Second, cash incomes realised from the wetland crops, such as green maize, beans, tomato etc, are used for buying inputs for upland crops such as seed, and fertiliser. The wide variety of crops grown in the wetland provides a variety of food sources spread throughout the year. The income realised from wetland crops is also used for a wide range of domestic needs including paying school fees, hospital bills etc. Some households have invested the money, realised from wetland crops, into small businesses such as small village shops.

2.10 Gender Division in Wetland Activities

The gender division of labour is seen most in a few specific activities which reflect the particular interests and responsibilities of men and women respectively. (Table 2.16).

Table 2.16: Gender division of labour in wetland activities: Katema

Activity	Men	Women		Men	Women
Clearing	Y	Y	Cattle herding	Y	N
Cultivation	Y	Y	Water collection	Y	Y
Planting	Y	Y	Fishing	Y	N
Weeding	Y	Y	Plant collection	N	Y
Harvesting	Y	Y	Collection of clay	N	Y
Grass collection	Y	Y			

Y = involved, Y = partially involved, N = not involved

Women have a specific responsibility for water collection and relish provision (through the collection of wild plants), while men are responsible for fishing and cattle herding. The other responsibilities are shared, although specific tasks within the broad categories may have different genders more or less involved.

2.11 Issues and Constraints

In general the use of the wetland has become more intensive in recent years, particularly for the cultivation of crops. The people in Katema village increasingly realise the importance of wetlands as an alternative livelihood strategy.

Major constraints faced in maintaining the benefits from the wetlands are as follows:

2.10.1 No ready market for the wetland crops.

The PRA group noted that households in Katema often face problems marketing their wetland crops because they grow their crops in small quantities and piece-meal, which cannot attract a big and sustainable market. The marketing problem can be solved if the village community works together to produce larger quantities of certain crops, which can attract buyers from far. They need to be organised into a big producer group specialising in certain crops in order to be known.

2.10.2 Lack of equipment and farm inputs

The village community can overcome this problem by working in clubs, which can fund-raise to buy specific equipment. The clubs should also approach lenders to negotiate for input loans.

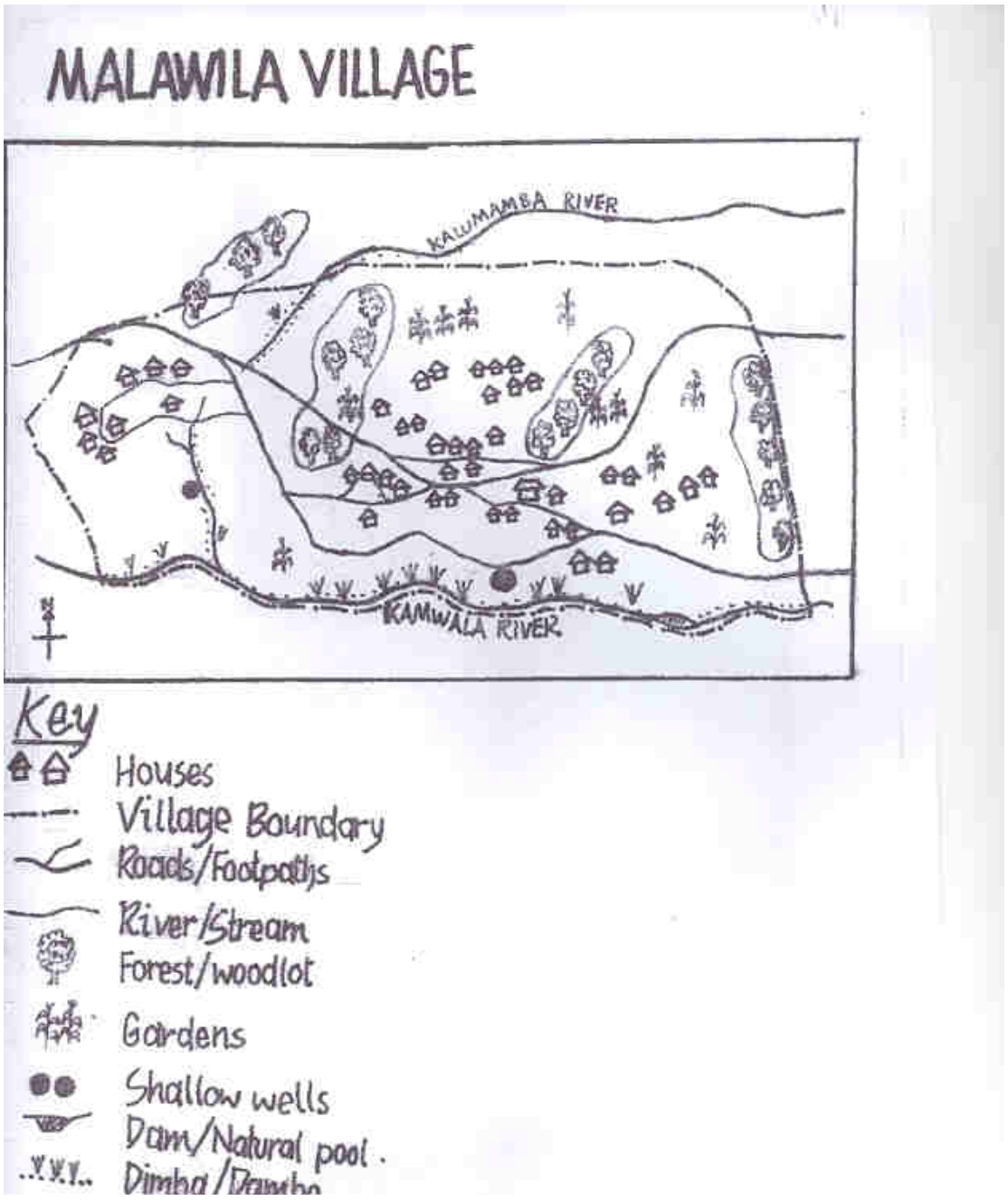
2.10.3 Shortage of water and fish

There is inadequate water in the wetland. Some of the gardens are not cultivated because they are too dry and they are far away from any well, such that even irrigated cultivation of crops is not possible. Water shortage has even affected activities such as fishing. Previously the villagers used to catch fish in the wetland during the rainy season when there were natural pools but now these have disappeared and there are no fish in the wetland. In order to solve the problem of water shortage, the village community needs to put in place proper wetland management practices rules and regulations and more aggressive mechanisms for reinforcing them. The village community wants to construct proper dams in several places where this is possible. Currently there is a small dam, which was built through a food for work programme supported by MALEZA. This has already shown that considerably amounts of water can be conserved and the potential for fish farming which the community wants to explore.

Currently the village community is not aware of any government rules / regulations that affect the way they use the wetland.

3. MALAWILA VILLAGE

3.1 Resource Map



The following tables provides a summary of the resource map (Table 3.1) and the results of the transect walk (Table 3.2)

Table 3.1: Main resources shown on the resource map: Malawila

Major resources in the community area	Livelihoods uses and income uses from each and importance	Main beneficiaries by socio-economic status – all or specific sections of the community
Indigenous forest areas in the four hills	• Firewood collection for domestic use • Construction materials for houses, livestock kraals, etc Medicinal plants • Materials for construction of tobacco curing facilities • Wildlife • Beekeeping • Collection of mushrooms from the indigenous woodland • Grazing livestock	• Mostly women and girls sometimes men and boys • All the people in the village • Almost all men and women, boys, girls and small children • Few better off men and women who grow tobacco • Few men who hunt, boys who mostly hunt birds • Some few skilled men and very few women • Mostly women and girls • Men and boys
Dambo	• Water (from springs, wells and stream) for drinking and domestic uses • Cultivation of crops for food and income (maize, vegetables, tomatoes, sugar cane) • Collecting reeds for making mats and grass for tobacco nurseries • Grazing and water for livestock • Collecting sand for domestic use – construction, maize processing and cleaning pots • Collecting clay for pottery and smearing of houses • Fishing • Grazing of livestock	• All socio-economic categories in the village - mostly women • All the interested people in all socio-economic categories • Mostly men and boys • Mostly men • Women and girls • Women and girls • Boys • Men and boys
Upland fields	• Growing of crops for cash and food • Grazing of livestock	• All members of the village community • Men and women who own livestock

Table 3.2: Transect walk: Malawila

Land Type	Opportunities	Challenges
Hills with indigenous forests	• Natural vegetation – firewood, mushrooms, source of construction materials • Grazing of livestock • Beekeeping • Wild animals	• How to sustainably manage indigenous forest resources
Arable cultivated land	• Growing of a wide range of crops • Livestock grazing • Woodlot or natural forest	• Soil erosion • Erratic rainfall
Wetland / *dambo*	• Wetland crop cultivation • Damming • Grazing livestock • Riverine forests • Fish farming / fishing • Banana and other fruits • Growing of plants for collection – reeds, elephant grass	• Overgrazing reduces water availability by compacting the soil • How to maintain high water table in order to sustain high water yields in the wells • Decreasing natural vegetation in the wetland • Managing the catchment area of the *dambo*

3.2 Uses of Wetland at Present Time & their Contribution to Livelihoods

Discussion of the use of wetlands was undertaken dividing the PRA groups in two by gender. Men regarded crop cultivation as the most important use and domestic water second, while women had these two in reverse order. After this men saw livestock grazing as third, while women placed clay for house use as third.

Table 3.3: Uses of wetland: ranking by men in PRA group: Malawila

Wetland uses	Rank (1 = most important)	Reasons for this use / purpose to which income put
Cultivation of crops	1	Domestic consumption and cash sales. The income used for buying fertilisers for upland crops, clothes, other domestic requirements
Water for drinking and other uses	2	Domestic use
Livestock grazing	3	Livestock sold in critical times to buy food, pay for fees, buy fertilisers, buy clothing etc.
Clay for smearing houses	4	Domestic use
Reeds	5	Making mats for sale. Money used for buying soap, salt, clothing and other household requirements
Fishing	6	Domestic consumption

Table 3.4: Uses of wetland: ranking by women in PRA group: Malawila

Wetland uses	Rank (1 = most important)	Reasons for this use / purpose to which income put
Cultivation of crops	2	Domestic consumption and cash sales. The income used for buying fertilisers for upland crops, clothes, other domestic requirements – soap, salt etc.
Water for drinking and other domestic uses	1	Domestic use
Livestock grazing	4	Used as a bank. Sold in critical times money used to pay for fees, fines, fertilisers
Clay for smearing houses	3	Domestic use
Reeds	5	Making mats for sale. Money used for buying food, shopping at local market - soap, salt, clothing and other household requirements

3.3 Wetland Rules and Institutions

The PRA assessment revealed that there were some rules governing the cultivation of crop in wetlands. These are summarised in the table below. (Note by editor – the 5m rule is not enforced.)

Table 3.5: Wetland use rules and institutions: Malawila

Use	Rules	Enforcer / organisation
Cultivation of crops in the wetland	• Plant crops in basins • Leave 5 meters buffer from the stream bank	Wetland scheme main committee Village headman

There are no rules affecting household access to wetlands. All the members of the village community, who are interested, can access the wetland.

3.4 Social and Wealth Mapping

3.4.1 *Social and Wealth Ranking Criteria*

The PRA group for Malawila village came up with the following criteria for social and wealth ranking of households in their village:

- Brick house with iron sheets
- Adequate food supplies of different types throughout the year.
- Have livestock particularly cattle, goats, and chickens
- Good sanitary conditions around the home

3.4.2 *Categorisation of Households in the Village – Wealth / Poverty, Gender of Household Head*

Using the criteria outlined above, the PRA group categorised the households in Malawila village into four distinct socio-economic groups namely: poorest, medium, better off and rich. These are described as follows:

i) Poorest households:

- Live in mud and thatched house that often leaks
- Perpetually face food shortages
- Do not keep any livestock
- Poor environmental sanitation around the home

ii) Medium

- Good mud thatched house or brick thatched house
- Fluctuating food availability - some years they have food in other years they face food shortages
- Keep some livestock particularly chickens
- Relatively better environmental sanitation

iii) Better-off

- Live in a good brick house with iron sheet
- Have food throughout the year except in extreme weather situation
- Keep livestock such as goats, or few cattle and chickens
- Clean environment around their homes

iv) Rich

- Good burnt brick house with iron sheets, cemented floors
- Food readily available despite fluctuations in weather conditions
- Lots of livestock for both sale and food
- Clean homes with all sanitary facilities

Table 3.6: Socio-economic categorisation of households: Malawila

Household category by gender	Poorest MHH	Poorest FHH	Medium MHH	Medium FHH	Better Off MHH	Better Off FHH	Rich
Number of households in each category	10	10	8	2	10	0	0

MHH = male headed household, FHH = female headed household

There were no households classified in the rich category. The PRA group however indicated that there were a few households in the 'Rich category' in the past, but their property was burnt down during an inter-village boundary conflict.

3.5 Wetland Use by Socio-Economic Ranking and Gender

A discussion on how households in different socio-economic categories use the wetland in Malawila village revealed that all households have access to wetlands and use them.

Table 3.7 Wetland use by socio-economic ranking and gender: Malawila

User group	Poorest MHH	Poorest FHH	Medium MHH	Medium FHH	Better off MHH	Better off FHH
None user						
Low users						
Medium users				1		
High users	10	10	8	1	10	
Total	10	10	8	2	10	0

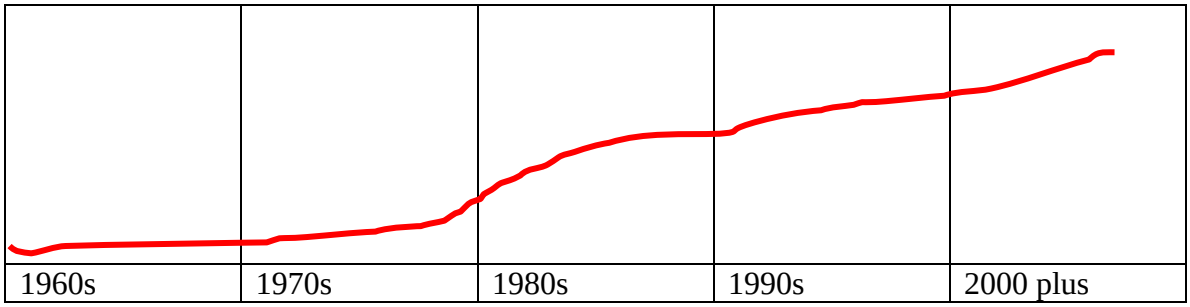
MHH = male headed household, FHH = female headed household

Last year all the households in the village had access to wetland gardens. The actual number of households who used the gardens was 40 out of 40.

3.6 History of Wetland Use

There was an increase in the wetland cultivation of crops in the 1970s and early 1980s because there was a market for the crops. In addition, upland crop failures due to droughts and dry spells also triggered an increase in wetland cultivation. (see Table 3.8)

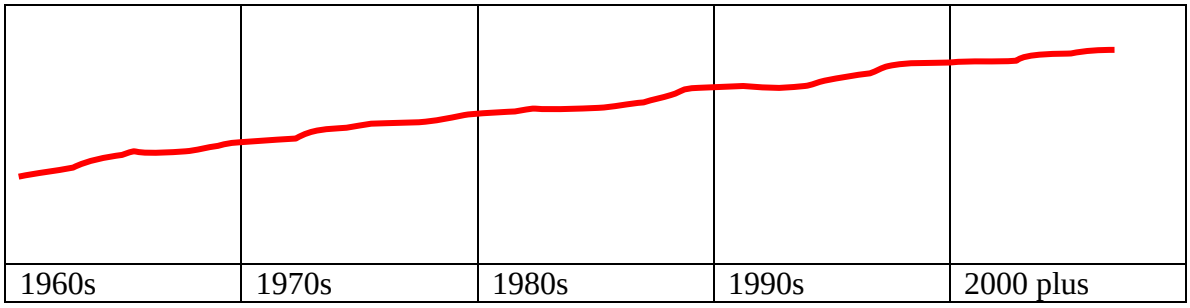
Table 3.8: Cultivation: Malawila



1960s	1970s	1980s	1990s	2000 plus

There is a spring in Kamwala wetland which supplies a lot of water. The water source is not protected. The PRA group observed that a structure, which has been put to divert the water for irrigation is negatively affecting the quality of water for drinking. They would like to have a protected spring to provide water for drinking.(see Table 3.9)

Table 3.9: Domestic water supply: Malawila



1960s	1970s	1980s	1990s	2000 plus

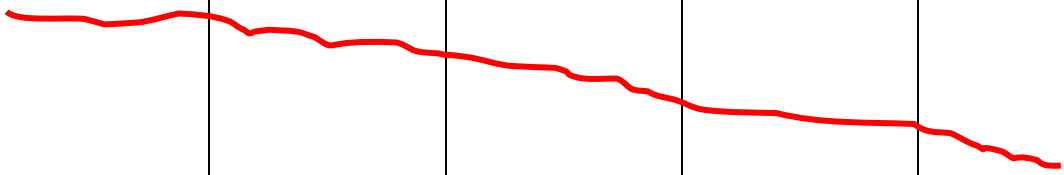
The wetland has increasingly become important for grazing and watering of livestock because other villages are also taking their livestock to this wetland. This, however, increases competition between crops and livestock. (see Table 3.10)

Table 3.10: Livestock grazing and watering: Malawila

				
1960s	1970s	1980s	1990s	2000 plus

Collection of plants has become less important to households as most parts of the wetland where the plants were growing naturally have been cleared for cultivation. The PRA group for example observed that thatching grass and reeds were becoming scarce in the wetland. (see Table 3.11)

Table 3.11: Collecting plants: Malawila

				
1960s	1970s	1980s	1990s	2000 plus

The PRA group indicated that there are less fluctuations in the availability of clay because the women use practices which enable the clay to regenerate. It was reported that they cover up depleted sites with soil and after some years the clay is restored. (see Table 3.12)

Table 3.12: Collection of clay for smearing houses and pottery: Malawila

				
1960s	1970s	1980s	1990s	2000 plus

3.7 Area and Value of Wetland Crops

The impact of wetland crops is summarised in Table 3.13 below. The assessment revealed that maize, beans and vegetables are allocated the biggest pieces of wetland because they are largely used as food crops. The most important wetland cash crops for Malawila are tomato, onions and maize.

Table 3.13: Crops grown in the wetland - ranking by area and value: Malawila

Wetland Crop	Use (for sale / domestic)	Rank by area	Rank by cash income for ones sold
Maize	Domestic use and for sale	1	3
Beans	For sale and domestic use	2	4
Tomatoes	Mostly for sale	4	1
Onions	Mostly for sale very little for domestic use	6	2
Vegetables	Domestic use and for sale	3	7
Irish potatoes	Mostly for sale	5	6
Sugar cane	For sale and domestic use	7	5

3.8 Agricultural Calendar

The peak time for activities in the wetland gardens is between April and November (See Table 3.14). Even in the wet season there are some activities in the wetland gardens, particularly in the drier areas where some maize is grown.

Table 3.14: Agricultural calendar (wetlands): Malawila

Crop	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep
Maize	S, I,	I	I	WH	HP	HS	S	P H	W	W S	H S	P, H
Beans	H	H	-	-	-	-	P	S	S,	H,S,	W, H	H
Tomato	W, I	I H	H	H	-	-	PS	S	W, S	SWH	H S	H S, C
Vegetables	I S H	IH	-	-	-	P	S	S	H W	H	H	H
Onion	H, I	H I	H	-	-	-	P	S	S W	WH	H	H
Irish potato	H	S	S	-	-	-	P S	S	SW	W	H	H
Sugar cane			-	-	-	H	S W	S W	S	H	H	-

P = land preparation, S = sow, W = weed, H = harvesting, I = irrigation, A= fertiliser/manure application, C = chemical spraying

The households in Malawila village have limited free time when considering upland cultivation. These activities are concentrated between October and May (See Table 3.15) When considering both the upland and wetland crop production, households are fully involved in crop cultivation throughout the year.

Table 3.15: Agricultural calendar (uplands): Malawila

Crop	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep
Maize	P	P	P S, A	W A	W A	-	-	H	H	H,	-	P
Beans	P	P	S	S W	H	H	H	-	-	-	-	-
Tobacco	N P	N P	S W	W	H	H	G	G	-	-	N	NP
Sweet potato	N	N	P S	WS	SW	H	H	HN	N	N	N	N
Cassava	N	N	S	S	S	S	W	W	-	-	-	-
Groundnuts	-	-	P S	S	W	-	H	H	-	-	-	-

P = land preparation, S = sow, W = weed, H = harvesting, I = irrigation, A= fertiliser / manure application, C = chemical spraying, N = nursery work, G = grading and marketing

3.9 Contribution of Wetland Crops to Household Income Needs and Food Security

Wetland crops contribute to household economic security in many ways. First, crops such as maize are harvested during the hungry period when the rain-fed harvest has run out. Hence, this covers the food gap period. Second, cash incomes realised from the wetland crops, such as tomatoes, onions and green maize, are used for buying inputs for upland crops such as seed, and fertiliser. The wide variety of crops grown in the wetland provides a variety of food sources spread throughout the year. The income realised from wetland crops is also used for a wide range of domestic needs including paying school fees, hospital bills etc. Some households have invested the money, realised from wetland crops, into small businesses such as small village shops.

3.10 Gender Division in Wetland Activities

The gender division of labour is seen most in a few specific activities which reflect the particular interests and responsibilities of men and women respectively. Women have a specific responsibility for the collection of water and grasses, and also the collection of clay (for use in houses), while men are responsible for fishing and cattle herding. The other responsibilities are shared, although specific tasks within the broad activity categories may have different genders more or less involved. (Table 3.16)

Table 3.16: Gender division of wetland activities: Malawila

Activity	Men	Women
Clearing	Y	Y
Cultivation	Y	Y
Planting	Y	Y
Weeding	Y	Y
Harvesting	Y	Y
Grass collection	N	Y
Cattle herding	Y	N
Water collection	Y	Y
Fishing	Y	N
Plant collection	Y	N
Collection of clay	N	Y

Y = involved, Y = partially involved, N = not involved

3.11 Issues and Constraints

In general, use of the wetlands, particularly for wetland cultivation, in Malawila village is becoming more intensive because of the frequent food shortages that the households in the village have been facing. Most households have been motivated to produce crops more than twice a year. This forces them to go into wetland cultivation.

Major constraints faced in maintaining benefits from wetlands for the future:

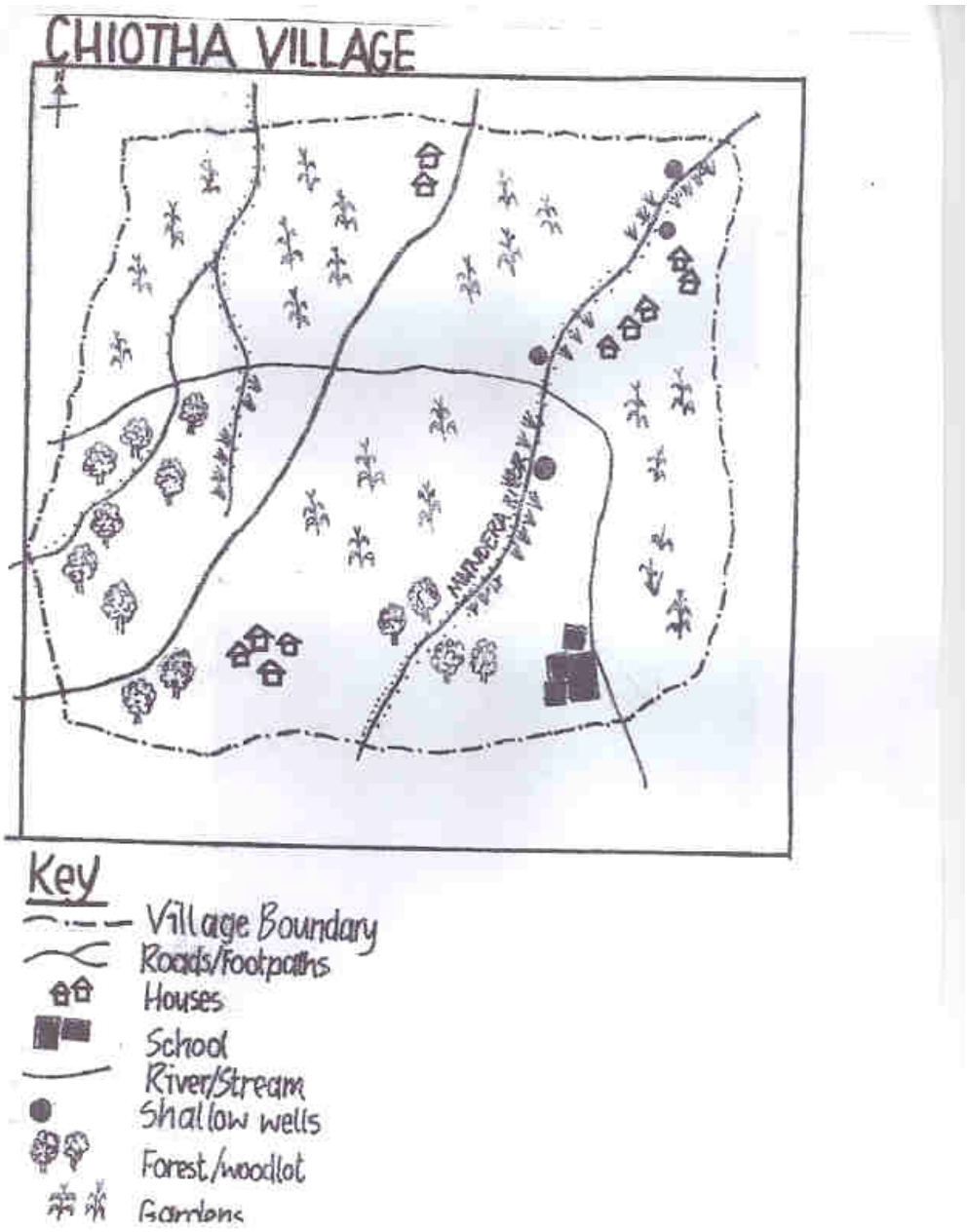
Limited access to inputs – such as fertilisers, seeds and treadle pumps.
The PRA group resolved that the village club (for wetland cultivation) needs to initiate mechanisms for fundraising and getting contributions from the members. The money realised could be used for buying inputs. Furthermore the scheme committee should approach several NGOs and projects for support.

Crop pests and diseases – particularly for maize, tomatoes, potatoes and vegetables.
The village community requires advice from the agricultural extension workers on the different types of pest control methods. For chemical control they would like to know the types of chemicals to use for specific crops, where to buy them from and how to apply them?. The PRA group observed that they have not had much extension support in this direction. There was not discussion of integrated pest and disease management.

Government regulations affecting the use of the *dambo* are only the five meter buffer strip from the river bank but this not applied. There is limited unused land in the wetland to develop for cultivation because most of the valley is now cultivated.

4. CHIOTHA VILLAGE

4.1 Resource Map



The following tables provides a summary of the resource map (Table 4.1) and the results of the transect walk (Table 4.2)

Table 4.1: Main resources shown in the resource map: Chiotha

Major resources in the community area	Livelihoods uses and income uses from each and importance	Main beneficiaries by socio-economic status – all or specific sections of the community
Dambo	• Water (from dug wells) for drinking and domestic uses • Cultivation of crops for food and income (banana, maize, vegetables, tomatoes, sugar cane) • Collecting reeds for making mats • Grazing and water for livestock • Collecting clay for pottery and smearing of houses • Fishing • Collecting thatch grass	• All socio-economic categories in the village – mostly women • Men and women whose plots are adjacent to water sources (these are the majority in the village) • Mostly men, sometimes older boys • Mostly men and boys • Women and girls • Women and girls • Mostly boys few men • Men and women
Indigenous village forest areas	• Firewood collection for domestic use • Construction materials (poles, thatch grass, ropes etc) • Medicinal plants • Collection of mushrooms • Grazing livestock	• Women and girls, rarely men and boys • All the people in the village • All members of the village community • Mostly women and girls, sometimes men and boys • Men and boys
Upland fields	• Growing of crops for cash and food • Grazing of livestock • Hunting rodents	• All members of the village community • Men and women who own livestock • Boys, sometimes men
Roads	• Ease of transportation of people and materials to the village and out of the village	• All members of the village community
Schools	• Education for the children	• Boys and girls

Table 4.2: Transect walk: Chiotha

Land Type	Opportunities	Challenges
Arable land	• Fertile soils supporting production of a wide range of crops – maize, tobacco, groundnuts, beans, sweet potato, cassava • Individual households have large fields • Agroforestry and natural forests in areas which are currently not cultivated • Livestock grazing	• Dry spells and droughts • Soil erosion and soil fertility loss
Wetland	• Dam to supply water for irrigation, domestic use and fishing • Wetland crop production for a variety of crops • Plant collection – reeds, thatching grass, pasture for feeding livestock • Indigenous forests – river-line trees which could help conserve water • Grazing and watering livestock	• Inadequate water supply – most parts of the wetland dry out by July – August • Competition between livestock and wetland crop production • Marketing of crop products

4.2. Uses of Wetland at Present Time and their Contribution to Livelihoods

Discussion of the use of wetlands was undertaken dividing the PRA groups in two by gender. Men saw crop cultivation as most important followed by domestic water, while women saw these in reverse order. After this gender division of labour affected the ranking, with women seeing the collection of clay for use in houses as third, while men ignored this and saw livestock grazing a third. (Table 4.3 and 4.4)

Table 4.3: Uses of wetland: Ranking by men in PRA group: Chiotha

Wetland uses	Rank (1 = most important	Reasons for this use / purpose to which income put
Cultivation of crops	1	To supplement rain-fed crop production for domestic production and cash sales. Money used to buy things used by households – soap, sugar, clothes etc.
Water for drinking and other domestic uses	2	Domestic use
Livestock grazing	3	The village does not have an alternative grazing area in the dry season
Thatching grass	4	For thatching houses and tobacco barns. Some people sell thatch grass. Money used to buy domestic requirements at the local market
Reeds	5	Making mats for sale. Money used for buying soap, salt, clothing and other household requirements

Table 4.4: Uses of wetland: Ranking by women in PRA group: Chiotha

Wetland uses	Rank (1 = most important	Reasons for this use / purpose to which income put
Cultivation of crops	2	Mostly for domestic consumption, to a less extent for cash sales. Income used for buying clothes, soap, salt, sugar and any other domestic requirements
Water for drinking and other domestic uses	1	Domestic use - The village does not have any other alternative source of water for domestic use.
Livestock grazing	5	Domestic use. Livestock help in times of critical need
Clay for smearing houses	3	Domestic use. Pottery for sale – income used for buying small household things – soap, salt etc.
Thatching grass	4	Domestic use – human dwelling house, livestock housing, tobacco barns

4.3 Wetland Rules and Institutions

The PRA assessment revealed that there were some rules governing the use of the wetland for livestock grazing and crop cultivation, as well as the management of trees. These are summarised in the Table 4.5 below.

Table 4.5: Wetland use rules and institutions: Chiotha

Use	Rules	Enforcer / organisation
Grazing	• Only the people from the village of Chiotha and affiliated villages can graze in Mndela dambo • Livestock must always be accompanied by someone	• Group village headman
Wetland cultivation of crops	• 5 meter buffer zone from the stream bank to the garden (this was initiated by MALEZA)	• Village forest committee,
Tree planting	• No household is allowed to plant eucalyptus trees in the wetland(new?)	• Village forest committee

The major factors that influence household access to wetlands are the interest of the household and the availability of water. Big patches of the wetland are not cultivated because of limited water supply.

4.4 Social and Wealth Mapping

4.4.1 Social and wealth ranking criteria

The PRA group came up with the following criteria for social and wealth ranking of the households in their village:

- Food availability throughout the year
- Good house (iron sheet, burnt brick wall, cemented floor)
- Possession of livestock (goats, cattle)
- Transport facility (bicycle, oxcart)

4.4.2 Categorisation of Households in the Village – Wealth / Poverty and Gender of Household Head

Using the criteria outlined above, the PRA group categorised the households in Chiotha village as follows:

i) Poorest households:

- Poor housing, mud and thatched house that often leaks
- Perpetually face food shortages
- Do not keep any livestock
- No bicycle, no oxcart

ii) Medium

- Good mud thatched house or brick but no iron sheets
- Some years have food, in other years not

- Keep some livestock particularly chickens and ducks
- Have a bicycle

iii) Better-off

- Good housing, brick house with iron sheet, sometimes cement floor
- Have food throughout the year except in extreme drought years
- Keep livestock – chickens, goats
- Have bicycle, oxcart

iv) Rich

- Very good housing, brick house with iron sheets, cemented floors, often big house
- Food not an issue even in drought years
- Lots of livestock for both sale and domestic consumption
- Has oxcart, bicycle and sometimes vehicle

Table 4.6: Socio-economic categorisation of households in Chiotha

Household category by gender	Poorest MHH	Poorest FHH	Medium MHH	Medium FHH	Better Off MHH	Better Off FHH
Number of households in each category	4	1	31	6	5	0

MHH = male headed household, FHH = female headed household

According to the PRA group in Chiotha there is no household in the village that can be considered rich by the criteria.

4.5 Wetland Use by Socio-economic Ranking and Gender

A discussion on how households in different socio-economic categories use the wetland in Malawila village revealed that all the households have access to wetlands.

The total number of households with access to wetland gardens was 47. The actual number of households who used the gardens was 47 in the last year

Table 4.7: Wetland use by socio-economic ranking and gender: Chiotha

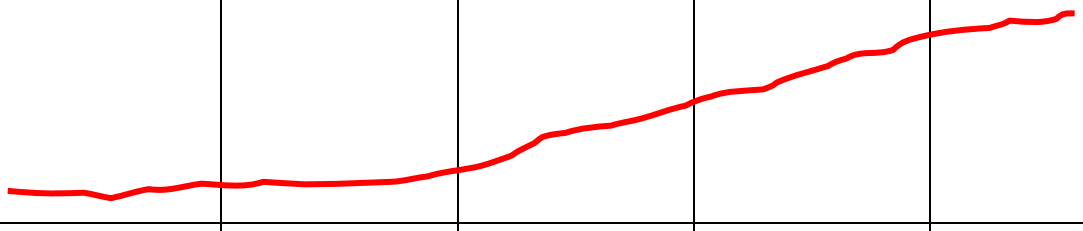
User group	Poorest MHH	Poorest FHH	Medium MHH	Medium FHH	Better off MHH	Better off FHH
None user	2		5		1	
Low users					1	
Medium users				1		
High users	2	1	26	6	3	
Total	4	1	31	6	5	0

MHH = male headed household, FHH = female headed household

4.6 History of Wetland Use: Chiotha Village

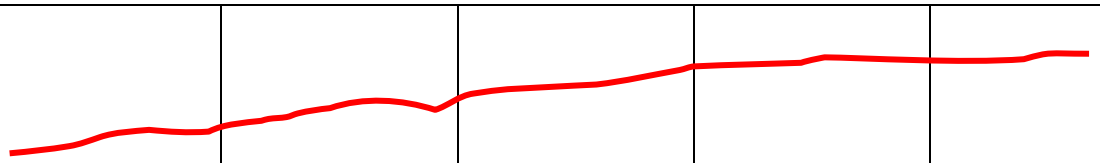
Many households are increasingly dependent on wetland crops to supplement rain-fed food crops. The wetland crop production started increasing in the 1980s (see Table 4.8)

Table 4.8: Cultivation: Chiotha

				
1960s	1970s	1980s	1990s	2000 plus

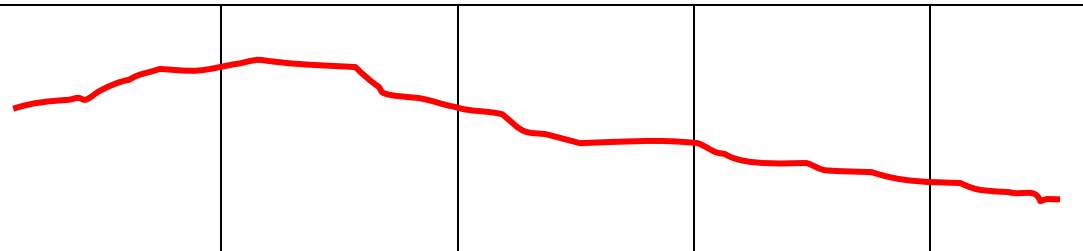
The wetlands, particularly Mndela, has remained the important source of domestic water for all the households in Chiotha village. The PRA group however observed that with droughts and overgrazing of the wetlands, the water supply has been declining but the demand for water resources has been increasing.(see Table 4.9)

Table 4.9 Domestic water supply: Chiotha

				
1960s	1970s	1980s	1990s	2000 plus

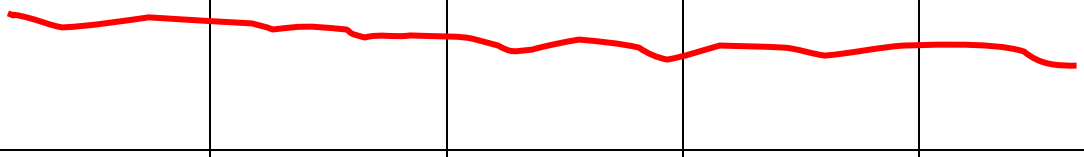
There was a cattle disease outbreak in the 1970s and 1980s that tremendously reduced the numbers of cattle in the village. However with the increasing wetland crop cultivation, there is still stiff competition between livestock and crop production in the wetland. Livestock grazing is done on uncultivated patches of the wetland. (see Table 4.10)

Table 4.10: Livestock grazing: Chiotha

				
1960s	1970s	1980s	1990s	2000 plus

Collection of plants from the wetland such as thatch grass and reeds has been declining gradually because some of the patches of the wetland where these were collected have been opened up for crop production. (see Table 4.11)

Table 4.11: Collecting plants: Chiotha

				
1960s	1970s	1980s	1990s	2000 plus

Collection of clay for house smearing and pottery, though an important wetland use, has been declining gradually as more pieces of wetland are opened for cultivation. (see Table 4.12)

Table 4.12: Collection of clay for smearing houses and pottery: Chiotha

				
1960s	1970s	1980s	1990s	2000 plus

4.7 Area and Value of Wetland Crops

The impact of wetland crops is summarised in Table 4.13 below. The assessment revealed that sugar cane, maize, and tomatoes are allocated the biggest pieces of wetland. Maize is mostly a food crop but the others largely used for sale. The most important cash crops for Chiotha are tomatoes, vegetable and sugar cane.

Table 4.13: Crops grown in the wetland - ranking by area and value: Chiotha

Wetland Crop	Use (for sale / domestic)	Rank by area	Rank by cash income for ones sold
Maize	Mostly for domestic use	2	5
Beans	For sale and domestic use	7	6
Tomatoes	Mostly for sale	3	1
Banana	For domestic use and sale	4	4
Vegetables	Domestic use and for sale	5	2
Sugar canes	Mostly for sale	1	3
Fruits	Domestic consumption	7	7

4.8 Agricultural Calendar

The peak time for activities in the wetland gardens is between April and November (See Table 4.14).

Table 4.14: Agricultural calendar (wetlands): Chiotha

Crop	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep
Maize	-	P S	W	H	-	P	P S	W	W	H	H	H
Tomato	H	H	-	-	-	-	PS	S	W	H	H	H
Vegetables	I H	IH	-	-	-	-	P S	S H	H	S I H	W I H	I H
Sugar cane	W	-	-	-	W	W	W H	H S	H S	H S	H S	HS

P = land preparation, S = sow, W = weed, H = harvesting, I = irrigation, A= fertiliser application, C = chemical spraying

The households in Chiotha village have more free time when considering upland cultivation. These activities are concentrated between October and April (See Table 4.15) However, when considering both the upland and wetland crop production, households are fully involved in crop cultivation throughout the year.

Table 4.15: Agricultural calendar (uplands): Chiotha

Crop	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep
Maize	P	P	P S,	W A	W A	-	-	H	H	-	-	-
Soya beans	P	P	S W	S W	W	-	H	H	-	-	-	-
Tobacco	N P	N P	S W	W	H	H	G	-	-	-	N	NP
Cassava	-	-	SH	S H	S H W	-	-	-	-	-	-	-
Groundnuts	P	P	P S	S W	W	-	H	H	-	-	-	-

P = land preparation, S = sow, W = weed, H = harvesting, I = irrigation, A= fertiliser / manure application, C = chemical spraying, N = nursery work, G = grading and marketing

4.9 Contribution of Wetland Crops to Household Income and Food Security

Households use income from wetland crops such as tomatoes, vegetables and sugar cane to buy fertilisers and hybrid seed for the upland crop cultivation, for food during times of food shortage, as well as other domestic needs such as fees, clothing, and groceries. Food crops, such as maize and bananas, play an important role in filling the food gap in critical months of December to March.

4.10 Gender Division in Wetland Activities

The gender division of labour is generally seen most in a few specific activities which reflect the particular interests and responsibilities of men and women respectively. Women have a specific responsibility for water collection and relish provision (through the collection of wild plants), while men are responsible for fishing and cattle herding. The other responsibilities are shared, although specific tasks within the broad categories may have different genders more or less involved.

Table 4.16: Gender division of wetland activities: Chiotha

Activity	Men	Women
Clearing	Y	Y
Cultivation	Y	Y
Planting	Y	Y
Weeding	Y	Y
Harvesting	Y	Y
Grass collection	Y	Y
Cattle herding	Y	N
Water collection	N	Y
Fishing	Y	N
Plant collection	N	Y
Collection of clay	N	Y

Y = involved, N = not involved

4.11 Issues and Constraints

In general the use of wetlands is becoming more intensive because of the failure of upland crop production due to erratic rains. Many households have resorted to wetland crop production as a food security measure.

Major constraints faced in maintaining benefits from the wetland:

Marketing problems particularly for vegetables – households face problems to sell their wetland crops. In most cases the crops are sold at low prices because the village is far away from the urban areas and accessibility is difficult particularly in the rainy season.

In order to solve the marketing problem, the PRA group had the following solutions:

- Need to improve access road to Chiotha village, including putting a bridge across the Mndela wetland so that the village can be accessed throughout the year.
- The village community need to identify key crops that they should be able to produce consistently. They need to develop a strategy for promoting the key crops widely across the country. "We should be known as suppliers of certain crops, just like Jenda is known for supplying tomatoes" was a conclusion from the Group Village Headman.

Water shortages – a lot of the wetland gardens are not cultivated or are partially cultivated because they are dry for most parts of the year. They are not even close to the wells or natural pools

Solutions include:

- Building one or two dams in strategic places across the wetlands in the village. The dams would have two main advantages – conserve the water for domestic uses and irrigation, and as a place for fishing. It would generally raise the water table for the wetland – wells would have more water, dry gardens would have more residual moisture.
- The other solution would be to plant and conserve trees that conserve water – fig tree (*mkuyu)* and *katope*,. and particularly enforce the five meter buffer zone to prevent cultivation close to the streams / water courses.

5. OVERVIEW

The wetlands in the Simlemba area provide important livelihood contributions to the communities. These are in various forms, including domestic water, crops, wild relish plants, fishing and livestock grazing, as well as grass, reed and clay collection. There are minor differences by gender in terms of ranking these, reflecting the gender division of labour. These areas are being increasingly used for cropping by a wide range of the community, even all households, and there is no clear relationship between poverty / wealth and wetland use. The increase cultivation is due to recurrent drought primarily, but is also stimulated by the development of market linkages. In the wetlands studies the majority of sites with suitable water supply are now being farmed, and this is creating competition with other uses.

The major focus on wetland use is for subsistence use. Even wetland cropping focuses on domestic food needs, with maize and beans the dominant crops in two sites. Vegetables are the main source of cash income, with tomatoes and onions especially important. In one site sugar cane occupies the largest area, this being seen as a regular source of small amounts of cash for purchasing household essential goods.

There is some recognition of the need to manage the wetlands carefully, but little tradition recognition of the link to their catchments. Some institutional arrangements already exist in terms of the power of the village headman to enforce local rules, and some institutional development is occurring linked to this project. However, long term sustainable use of these areas requires much more institutional development.