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Patterns of Access and Use in Wetlands

The Lake Chilwa Basin

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October 2004

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This output was made possible in part through support provided by the US Agency for International Development (USAID), under the terms of Grant No.

LAG-A-00-96-90016-00, and by funding support from the BASIS

Collaborative Research Support Program and its management entity, the Department of Agricultural and Applied Economics, University of Wisconsin-Madison, USA. All views, interpretations, recommendations, and conclusions expressed in this paper are those of the author(s) and not necessarily those of

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Research Report:
Patterns of Access and Use in Wetlands: The Lake Chilwa Basin

by

Daimon Kambewa

October 2004

INTRODUCTION

Wetlands, locally known as *dambos* in Malawi, are defined as any permanently or seasonally wet land in valleys, depressions, or floodplains with open herbaceous vegetation, mainly grasses and sedges, and an absence of trees (FAO 1996). In 1991/92 FAO Land Resources Evaluation Project (LREP) estimated that, in Malawi, the total irrigable area of *dambos* (wetlands) is between 480,000 ha and 600,000 ha (FAO 1996). Upland *dambos* formed about 70 percent of the area, while flood plains constituted about 25 percent. Districts with larger upland wetlands include Mzimba, Kasungu, Mchinji, and Dedza. Floodplains include Vwaza and Majete in the Lower Shire, Chikwawa District; Chilwa in the Phalombe plains covering Phalombe, Zomba, and Machinga Districts; and Kazuni in Rumphu; Nkhata Bay, and Karonga.

Wetland agriculture in Malawi takes place as formal and informal irrigation. Formal irrigation encompasses government schemes that were established from the 1960s to 1970s and self-help schemes that were constructed in the 1980s. In the Lake Chilwa wetland, such schemes include Domasi, Likangala, Bimbi, Chibwana, Mikoko, and Zumulu. Informal irrigation, locally called *dimba* cultivation, is carried out on customary lands especially in the dry season. *Dimbas* are irrigated gardens in wetlands, along the banks of streams and rivers, and in areas below small earth *dams*. Here *dimbas* are called wetland gardens in order to differentiate them from those found along the riverbanks. Currently, most irrigation in Malawi takes place in *dimbas* and estimates show that 123,000 ha are under informal irrigation compared to 27,000 ha under formal irrigation (GoM 2000). Within the formal irrigation sector, 3,500 ha are under government-owned schemes, 1,000 ha are under self-help schemes, and 1,800 ha are under estates.

Both formal and informal irrigation are being promoted as a rural development strategy to improve rural income and food availability. Government efforts directed towards informal irrigation have increased since the 1990s when the country experienced a critical food shortage due to drought (Mzembe 1997). The efforts are manifested in a shift in policy from government-owned (formal) schemes to farmer-managed schemes and informal irrigation (GoM 2001). It is projected that wetland cultivation can transform rural livelihoods if people receive the requisite information,

such as extension service, and technology, such as treadle pumps, plus input support, such as the Targeted Input Programme (TIP).

The driving forces behind intensification of wetland cultivation are recurrent droughts and floods, and declining soil fertility (FAO 1996). These, combined with limited access to land and farm inputs, have resulted in widespread poverty as manifested in most households experiencing food shortage. In 1998 nearly 60 percent of households had inadequate food, especially between December and February (NEC/NSO 1997/98). The situation became worse in the year 2002 when food shortage and famine showed how vulnerable the country is to natural calamities, such as drought, when associated with economic mismanagement by the government. The estimated number of deaths due to famine in 2002 ranged from 1,000 to 3,000 (Devereux 2002). Assani (2003) suggested that the hunger crisis resulted in instances of crop theft, a situation that sometimes led to the accused thieves being killed.

In response to droughts, since the 1990s the Malawi Government, with assistance from FAO and the Danish International Development Agency (DANIDA), started mobilizing and supporting farmers to utilize wetlands, streams, and rivers for wetland cultivation (IFAD 1995). Of late, emphasis on wetland cultivation has been accompanied by political messages by the president and his cabinet, other political leaders, and government officials. A number of donors, particularly Department for International Development, instituted a dry-season TIP, directed specifically at *dimba* and supplied seed (especially maize seed) and free fertilizer. Programmes providing treadle pumps on loan have also been initiated to boost irrigated crop production.

RESEARCH QUESTIONS AND METHDOLOGY

The study on which this paper is based was conducted in order to address the lack of information about existing modes of access and control over wetland gardens, and to correct inadequate information such as the misunderstanding of the tenure status of wetlands in the land policy, and the relative neglect of informal irrigation in the irrigation policy. If wetland cultivation is to be promoted, there is a need to clarify rights of access and to pay attention to ecological concerns. This study provides information on patterns of access to and allocation of wetlands and wetland gardens, and an analysis of the existing tenure system and use rights in the Chilwa Basin, located in the Southern Region of Malawi. A combination of qualitative methods, including participant observation, individual interviews, and survey research, was used to examine how policies, development strategies, and climatic and economic conditions have turned wetlands into valuable ecosystems for various livelihood strategies.

SIGNIFICANCE OF WETLAND GARDENS

Cultivation in the Lake Chilwa wetland takes place throughout the year, with rice as the main crop in the rainy season. Rice varieties grown in the area include hybrids, such as faya, pusa, kilombero, and taichuni, and local varieties, such as amanda, kawasala, and tuwengane. Ecological variability across areas results in different

cropping patterns. Thus, some people in Mpheta plant rice in the dry season because there is adequate moisture.

In the dry season, from April to October, people grow maize, sweet potatoes, tomatoes, beans, pumpkins, cowpeas, green leafy vegetables, onions, and watermelons. Plots are usually intercropped. The cultivation calendar is such that the first crop is planted at the beginning of the rainy season, from October to November, and harvested in January or February. From March to April people prepare the gardens for the dry-season crop to be planted from April to October. Usually crops planted during this time grow on residual moisture, and it is only when there is critical moisture stress that people dig wells and use watering cans, pails, and plates to irrigate crops.

People in the study sites said that wetland cultivation is their main source of livelihood, followed by fishing. Usually they sell rice to get cash to meet household needs, while maize grown in the dry season is kept for food. In fact, 83 percent of the 170 people interviewed said they keep the maize from wetland gardens for food. In Mposa it was observed that most houses had iron sheet roofs while some had television aerials, all of which people attributed to rice growing. In Mpheta village, one villager sold rice in the year 2003 and used the money to buy iron sheets for his house. Apart from cash generation, rice is also exchanged for maize, which is a staple food in all the sites. In Mposa area it was found that people come from TA Chamba (13 km. away) or nearby Chikala Hills to exchange maize for rice.

Households who have access to wetland gardens in the dry season reported that they normally have enough food throughout the year. In fact 75 percent said that they do not run out of food from January to February, a period when most Malawians do so because dryland maize is still immature. People with wetland gardens plant maize in September and October and harvest it in January and February. Households also supplement their cash by selling crops such as sweet potatoes, tomatoes, watermelons, sugarcane, and vegetables. Of course, these crops are also used for home consumption. Respondents reported that vendors usually buy their rice, vegetables, and sweet potatoes. In fact, in October 2003, vendors could be seen transporting bags of sweet potatoes on bicycles from the wetland to nearby markets like Zomba, Malosa, Govala, and Machinga. One day a truck was seen loading watermelons at Khanda, which were taken to Zomba City for sale.

Apart from wetland gardens, the survey revealed that people rely on other wetland resources such as fish (48 percent), grass for construction (19 percent), firewood (10 percent), reeds for construction (9 percent), and bird hunting (4 percent). Also included are activities such as brick making, residence, livestock grazing, and initiation and rain making ceremonies. However, some reports indicated that cultivation in the wetland has resulted in loss of wildlife due to destruction of habitats. Some resources reported by respondents to be disappearing are: wild animals (28 percent), fish (12 percent) and birds (11 percent). There is also a change in crop pattern in the gardens where originally sweet potatoes, green leafy vegetables, and tomatoes were the common crops but, due to drought and TIP, many people now grow maize followed by sweet potatoes and vegetables in the gardens.

It is important to stress that wetland gardens in the research area used for dry-season cultivation are not found throughout the basin but are concentrated in areas around the river mouths of Chanyungu and Lingoni in Mposa site, Domasi in Mpheta

site, and Naisi in Khanda site. In Likapa site people rely on water coming out of Likangala Irrigation Scheme. In Mposa site it was observed that there were no gardens in the dry season one kilometer away from Chanyungu stream because the water dries up early. As a result, some people were cultivating stony places at the foot of Chikala Hill to grow maize. This was because they could not get gardens in the river mouth since it was all allocated, or they could not afford to rent, or they did not have relatives from whom to borrow the gardens. Some people have also moved to the upland slopes of Chikala Hill in search of land to grow maize.

Currently, the Chilwa Basin is faced with an increasing demand for wetland gardens, resulting in conflicts of interests and aims among various wetland users, conflicts over access and ownership of wetlands, and conflicts and competition for water among various users. In addition, there are environmental issues, particularly concerns that intensive wetland cultivation will lead to degradation of the wetland and related natural resources. However, according to an FAO report (1996), wetland cultivation is inevitable, especially in places with high population densities. This report argues that cultivation in the wetland does not pose serious erosion problems; rather, it is cultivation in the uplands that has negative effects on wetlands. This has been experienced in Mpheta study site where, every year, floods from Domasi River damage houses, property, and wetland gardens in Namasalima village, which lies at the edge of the wetland. Local people and government officers say floods are common because of deforestation of the upland areas. These floods have resulted in conflicts between residents of Mpheta and Namasalima villages. Those from Namasalima have attempted to construct a bund to protect their property but people from Mpheta have demolished it, arguing that the bund will destroy the canal carrying water to the Domasi Irrigation Scheme. This conflict has not yet been resolved.

MODES OF ACCESS TO WETLAND GARDENS

Gardens in the Lake Chilwa wetland are accessed through permission from village headmen (VH), group village headmen (GHV), and traditional authorities (TA), and through inheritance from family members. The VH, GVH and TA are all chiefs but VH and GVH are junior chiefs while TA are senior. Table 1 illustrates that out of 170 households who had wetland gardens, 61 percent inherited from their family members, while 39 percent accessed the gardens through chiefs.

Allocation of gardens by family members exists in all the sites but it is most common in Mposa (88 percent) in Machinga District, and Khanda (81 percent) in Zomba District. The practice whereby chiefs allocate gardens is more common in Mpheta (69 percent) in Machinga District, and Likapa (56 percent) in Zomba District. Among the chiefs, the village headman is a predominant local management agent accounting for 23 percent of the gardens allocated. This is followed by group village headmen who allocated 14 percent.

Table 1 Modes of access to wetland gardens

Allocated by:	Study site				
	Mposa (%)	Mpheta (%)	Likapa (%)	Khanda (%)	Total (%)
n	43	42	43	42	170
The Village Headman	4.6	11.9	55.8	19.0	22.9
The Group Village Headman	0.0	57.1	0.0	0.0	14.1
The Traditional Authority	7.0	0.0	0.0	0.0	1.8
Inherited from family members	88.4	31.0	44.2	81.0	61.2

Oral history on the origins of allocation of gardens to families indicates that in the 1970s the TAs partitioned the wetland among village and family heads within their areas of jurisdiction, especially to those living close to the wetland. This was in response to increased demand by residents to cultivate the wetland. The demand might have been intensified by the attraction of the irrigation schemes, which were established in the area at around the same time. Reports from various people indicated that TA Mposa allocated the wetland to VHs in Mtambalika, Kambalame, Nanga, Mussa, and Mposa villages while GVH Khanda distributed the wetland to VHs in Khanda, Maliwata, and Kalemba villages. At that time, households within family groupings received plots and the VHs or family heads recognized the plots as belonging to the households.

During interviews it was reported that households that inherited plots from family members did so without the involvement of the chiefs. In these cases, it is only in times of conflicts and disputes that chiefs would be asked to attend to issues of wetland cultivation. These findings agree with those of Mkandawire (1992), who noted that when arable land has been allocated to households, these households have total control and no one can oust them without due consultation. In fact, possession of land transcends an individual lifetime, for land is held to belong to the living, the dead, and the unborn.

The second mode of access to wetlands is allocation by chiefs. Again, these findings agree with the ideal situation as presented by Mkandawire (1992), namely that access to arable land may be gained through the village heads who get their right of administration from the chiefs who are the custodians of all the land. Village heads may allocate land to individuals, their children, or any member of the extended family. However, research indicates that some chiefs are monopolizing control over the wetland and are demanding payment in the form of bags of rice for the plots they allocate. The practice of giving some produce to the chief who allocated the gardens has been described in the past and present in some parts of the country, but it has been more closely associated with dry-land fields than wetlands. Moreover, as discussed below, the system is now an annual obligatory payment for wetland gardens. Today it more closely resembles rental than a gift given in thanks.

An account of how some chiefs in the study area gained control of wetlands is found in Mpheta site in Machinga District. Here a chief increased his ability to control wetland access after he managed to remove people from Namasalima in Zomba District from his area. During the interviews it was revealed that people from Namasalima cultivated in the Mpheta area up to the 1980s, but GVH Mpheta removed them to give land to his people, arguing that the land belonged to people from Mpheta. However,

after the people from Namasalima withdrew, those from Mpheta did not take up the plots because they feared that people from Namasalima would bewitch them. GVH Mpheta then announced that people from other places were free to cultivate in the area, but only on the condition that they would become registered tax payers of Mpheta village. Many did so, coming from the surrounding villages and other places to cultivate in a place called Bango within Mpheta site.

People currently found in Bango come from areas within Zomba and Machinga Districts as well as other districts, such as Mulanje, Phalombe, Balaka, Ntchisi, and Nsanje. Some even come from Mozambique. People migrated to the Mpheta area to fish or to grow rice in the irrigation schemes near Lake Chilwa. Others came because they did not have adequate land in their original homes or were in search of fertile soils. Some in-migrating men married women from Mpheta village. This has improved their access to gardens as the GVH has given them plots to cultivate because they are treated as citizens.

In another case - Likapa site - what was once a cattle-grazing area has been turned into an area for farming. Originally people did not cultivate gardens in the area because cattle destroyed their crops. However, due to diseases, most cattle died in the 1970s and '80s, and some cattle were stolen, after which some people started cultivating the wetland. Upon seeing the demand for cultivation, GVH Mbalu allocated the wetland to his subjects, VHs Ramusi 1, Ramusi 2, Ramusi 3 (Likapa), and Mbalu. It then followed that anyone who wanted gardens in the wetland went through the VHs.

Other modes of access to wetland gardens include renting and borrowing in the dry season. Results of the survey showed that of the 157 people who cultivated in the 2003 dry season, 90 percent (141) cultivated their own gardens while the rest relied on borrowing and renting. Thirty people (19 percent) of all those who cultivated in the dry season borrowed and, of these, 18 cultivated both their own gardens and also borrowed, whereas 12 relied only on borrowed gardens. Twenty people (13 percent) rented gardens and, of these, 16 cultivated their own and also rented, while 4 relied solely on renting.

OBLIGATIONS AND RIGHTS OF USE OF WETLAND GARDENS

Requirements for ownership of wetland gardens

Access to wetland gardens is accompanied by some requirements here referred to as obligations. Individuals have to fulfill these obligations in order to secure ownership over the gardens. Table 2 shows that, overall, 61 percent of the households received the gardens with obligations, while 39 percent had no obligations. The most common obligation is that households should pay tribute to chiefs (44 percent). The tribute is in form of bags of rice and it is locally called *chothokoza* (literally meaning "thanks"). Lesser obligations include the need to cultivate every season (18 percent), be a full member of the village (14 percent), participate in development activities, and also respect chiefs.

Table 2 Requirements for ownership of wetland gardens

Requirements	Study site				
	Mposa (%)	Mpheta (%)	Likapa (%)	Khanda (%)	Total (%)
n	43	42	43	42	170
No requirements	76.7	23.8	0.0	57.1	39.4
Pay tribute to local leaders	9.3	69.0	81.4	14.3	43.5
Cultivate plots every season	14.0	7.1	18.6	31.0	17.6
Be member of the village/area	2.3	9.5	27.9	14.3	13.5
Do development work	2.3	9.5	7.0	0.0	4.7
Respect local leaders	2.3	2.4	2.3	0.0	1.8

Noted in Table 3 is that the obligation to pay tribute varies from place to place and is more prevalent in Likapa (81 percent) and Mpheta (69 percent), while in Khanda and Mposa it was much lower, 14 percent and 9 percent respectively. The requirement to pay tribute is higher (33 percent) in sites where chiefs control allocation of gardens, and lower (12 percent) when allocation is predominantly by families. The lesser obligations also vary with modes of access; for example, the obligation to cultivate every year was cited by 16 percent who inherited their plots and 20 percent of those allocated by chiefs, and the obligation to be recognized as a “local” person was cited by 27 percent of those allocated by a chief but only 5 percent of those inheriting from families.

Informal interviews indicated that, in Mpheta and Likapa sites, wetland gardens are allocated on the condition that in return the person agrees to give the chief bags of rice from the rainy-season harvest. Most people pay one 50 kg. bag of rice per garden, while some pay one bag regardless of the number of gardens. In the dry season, people use the gardens to grow maize, rice, vegetables, and other crops, without giving the chief any extra payment. While in Mpheta few people (7 percent) who inherited the gardens from family members paid tribute, in Likapa the obligation applied regardless of whether gardens were allocated by the chief (47 percent) or family members (35 percent).

Table 3 Modes of access vs required to pay tribute to chief

Mode of access	Study site				
	Mposa (%)	Mpheta (%)	Likapa (%)	Khanda (%)	Total (%)
n	43	42	43	42	170
Through local leaders	7.0	7.1	9.3	4.7	9.4
Through family members	83.6	23.8	9.3	81.0	46.1
Total no tribute required	90.6	31.0	27.6	87.7	56.5
Through local leaders	4.7	61.9	46.5	14.3	31.8
Through families members	4.7	7.1	34.9	0.0	11.7
Total tribute required	9.4	69.0	81.4	14.3	43.5

In practice, the tribute is an annual rent to the chiefs and it is organized such that there are committees whose job is to register people, show them the gardens, and

collect bags of rice after harvesting. One chief justified the practice as the only way he could get food and income since he cannot work in the fields as he is always busy performing his duties as chief. In 2002/03, this chief reported that he received 40 bags of rice and sold them at K500 each. He used the money to buy iron sheets for his two houses. Another chief received 26 bags through tribute from people. However, some people, such as fellow VHs, the elderly, or those related to the VH or GVH, are exempted from the obligation. Worth noting is that chiefs defend the tribute practice using the concept of redistribution. Some chiefs argue that they collect bags of rice to sell and use the money to carry out development work that benefits the whole community. However, most respondents said the money was not used for development, and the general outcry from the people is that they are being exploited.

It also appears that the obligation is subject to changes. One VH in Khanda site reported that he used to practice it but stopped because some people abused it and people in the area showed displeasure. However, in Mposa it was reported that another VH was considering starting to require tribute because he did not receive adequate compensation for his work as chief, and he was also attracted by the considerable rental income earned by his peers. The practice is indeed prone to abuse as noted in Mpheta, where people reported that committee members collected rentals for the gardens in addition to bags of rice. They also collected more bags of rice than they passed on to the chief. For example, the chief indicated that in the year 2003 he got 26 bags while the committee said they collected 46 bags, and yet there are about 300 households in the area who are supposed to pay bags.

Failure to pay tribute often meant that the chiefs would take away the gardens. During informal interviews it was revealed that four people in Mphepo village in Mpheta site lost gardens to the chief because they did not pay tribute. However, people were not completely free to discuss the subject in detail for fear that the chiefs would hear and take away their gardens.

Failure to cultivate is yet another way by which people could lose access to their gardens. Although few people (18 percent, see Table 2) mentioned it, the obligation exists in all the sites under both modes of access. During the reconnaissance survey, it was reported that failure to cultivate every year results in some people losing the gardens. Mr. Nikisi Misozi is a case in point. He lost his garden to VH Likapa because he was sick. Mr. Misozi came to Likapa village from Mozambique looking for piecemeal work, and he became employed as a watchman/herdsman. He then obtained a garden in Likapa site but VH Likapa took it away in 2003 because Mr. Misozi did not cultivate in the 2002/03 season. With the increasing prevalence of HIV/AIDS, it is likely that more people will lose their gardens due to an inability to cultivate yearly as required.

Ownership and freedom of use of wetland gardens

Access to wetland gardens is accompanied by degrees of freedom on what one can or cannot do. The freedoms – the obverse of obligations – are referred to here as rights of use of gardens. Table 4 shows that, overall, 83 percent (141) of the households are free to dispose of their gardens to an heir, 69 percent are free to lend, and 40 percent are free to rent out the gardens. At the same time no one is free to sell the gardens in any of the sites.

Table 4 Freedom of use of wetland gardens

Freedom	Study site				
	Mposa (%)	Mpheta (%)	Likapa (%)	Khanda (%)	Total (%)
n	43	42	43	42	170
Freedom to dispose to an heir	95.4	73.8	65.1	97.6	83.0
Freedom to lend	58.1	52.4	81.4	85.7	69.4
Freedom to rent out	67.4	4.8	9.3	78.6	40.0
Freedom to sell	0.0	0.0	0.0	0.0	0.0

Starting with the right to pass on a garden to an heir, Table 5 shows that in all the sites this is the predominant pattern. However, the right varies with modes of access. Overall, 57 percent of the households who received the gardens from family members are free to do so, compared to 27 percent of those who were allocated the gardens by chiefs. In Likapa, 65 percent of the plots and 74 percent in Mpheta have this right compared with 98 percent in Khanda and 95 percent in Mposa.

Table 5 Modes of access vs freedom to pass on wetland garden to heir

Mode of access	Study site				
	Mposa (%)	Mpheta (%)	Likapa (%)	Khanda (%)	Total (%)
n	43	42	43	42	170
Through local leaders	2.3	26.2	20.9	0.0	12.4
Through family members	2.3	0.0	14.0	2.4	4.6
Total not free pass a garden	4.6	26.2	34.9	2.4	17.0
Through local leaders	9.3	42.8	34.9	19.0	26.5
Through families members	86.1	31.0	30.2	78.6	56.5
Total free to pass a garden	95.4	73.8	65.1	97.6	83.0

As indicated in Table 5, a total of 83 percent (141) of the people have the right to pass on their gardens to heirs. Table 6 shows that 67 percent (95) of the people with a right of disposal to heirs do not pay annual tribute (*chothokoza*) to the chief, thus constituting those with greatest security over the gardens. On the other hand, 33 percent (46) have the right to dispose of the gardens to heirs but also pay tribute, and this is more common in Mpheta (58 percent) and Likapa (79 percent). During the reconnaissance survey it was reported that in places where chiefs control allocation of gardens, the right of disposal to an heir was conditional on the willingness of an individual to pay tribute annually.

Table 6 Tribute practice vs freedom to pass on wetland garden to heir

Mode of access	Study site				
	Mposa (%)	Mpheta (%)	Likapa (%)	Khanda (%)	Total (%)
n	41	31	28	41	141
Local leader without tribute	7.3	6.5	7.1	9.8	7.8
Local leader with tribute	4.9	51.6	39.3	9.8	23.4
Family without tribute to leader	87.8	35.5	14.3	80.5	59.6
Family with tribute to leader	0.0	6.5	39.3	0.0	9.2

Table 7 confirms that the largest constraint on tenure of the gardens is the obligation to pay tribute. Overall, 33 percent considered the gardens to belong to the chief because the latter can take away the gardens if one fails to pay tribute. This is against 67 percent who considered the gardens as personal property because they were inherited from parents. The degree of ownership varies among the sites; for example in Mposa and Khanda, 84 percent and 83 percent, respectively, consider the gardens as personal property. In Mpheta and Likapa, 45 percent and 77 percent, respectively, indicated that they do not own the gardens. This implies that in places where families allocate gardens there is security of ownership unlike where chiefs control allocation.

Table 7 Ownership over wetland gardens

Mode of access	Study site				
	Mposa (%)	Mpheta (%)	Likapa (%)	Khanda (%)	Total (%)
n	43	42	43	42	170
Not mine unless I pay tribute to the chief	2.3	45.2	76.7	7.1	32.9
Mine since I inherited from parents	83.7	47.6	23.3	83.3	59.4
Mine because the chief is a witness	14.0	7.1	0.0	9.5	7.6

Generally, people who said gardens are not theirs consider themselves as temporary citizens. The sense of temporary ownership was also evidenced in the type of houses the people had. Despite having stayed quite long periods in their current locations, people lived in simple huts while they had good houses (for example, with iron roofs) in their original homes. Noted though is that people who come looking for gardens are located away from the main villages: for example, in Mpheta the people live in Bango area, which is about half a kilometre away from Mpheta village.

The second right of use is lending wetland gardens. As indicated in Table 8, a total of 69 percent of the people are free to lend their gardens. The right to lend wetland gardens varies from site to site and among the modes of access. Overall, more people (44 percent) are free to lend gardens when the gardens are allocated by families, compared with 25 percent when chiefs control allocation of gardens. However,

in comparing sites, more people are free to lend gardens in Khanda (86 percent) and Likapa (81 percent) than in Mposa (58 percent) and Mpheta (52 percent).

Table 8 Modes of access vs freedom to lend wetland gardens

Mode of access	Study site				
	Mposa (%)	Mpheta (%)	Likapa (%)	Khanda (%)	Total (%)
n	43	42	43	42	170
Through local leaders	4.7	35.9	14.0	0.0	13.5
Through family members	37.2	11.7	4.6	14.3	17.1
Total not free to lend	41.9	47.6	18.6	14.3	30.6
Through local leaders	7.0	33.3	41.9	19.0	25.3
Through family members	51.1	19.1	39.5	66.7	44.1
Total free to lend	58.1	52.4	81.4	85.7	69.4

Lending is mainly done by people with many gardens, and sometimes when the owner is sick. The borrower pays nothing and it is claimed that it is one way of enabling each other to grow crops in the dry season. However, a close look at the practice showed that one result of people lending gardens is to keep them cleared. One person from Maliwata village in Khanda site commented that instead of hiring labour to till, he just lends the gardens during the dry season and gets them back when time for planting rice comes in the rains. In this case he does not need labour for clearing and tilling the gardens. It can therefore be seen that access is rooted in reciprocity, where reciprocity is defined as the exchange of resources, goods, and services that takes place among people in response to obligations they feel they owe one another (Mtika 2001 citing Gouldner 1960).

Borrowing is mostly done among relatives and close friends. Cases in point are in Mposa where Biti Major stayed with her husband in Mbalame village and borrowed a garden from her brother cheMajor in Chipojola village. In Khanda, Mrs. Sululu from Mwandama village borrowed a garden from Mrs. Chikaonda from Khanda village, because her sister was married to Mrs. Chikaonda's son. A key condition for a borrower is that he or she is only allowed to cultivate the garden during the dry season, after which the plot is given back so that the owner can use it in the rainy season. Another condition is that the owner can lend the garden for up to three years; more than three years is said to result in the borrower taking over the garden because it is assumed that the owner is no longer interested in it.

However, during informal interviews some people indicated that they were not willing to lend out their gardens because they feared that borrowers would not return the gardens after use. An analysis of the responses of 52 people who reported that they did not lend out their gardens revealed that 29 percent did not do so because they feared borrowers would not return the gardens, while 62 percent did not lend because the land belonged to the chiefs and the latter prohibited lending. It can therefore be argued that, while chiefs restrict borrowing, chances for one to borrow are also rooted in the trust between the owner of the garden and the borrower. This shows that at play in wetland cultivation is social capital, defined as the abundance of information and trust that diffuses across networks of interaction among people, and through which

individuals are obligated to exchange their resources, goods, and services to deal with problems or respond to opportunities (Mtika 2001 citing Bourdieu 1986).

The third right of use is the right to rent out the gardens. Table 9 shows that more people are free to rent out gardens in Khanda (79 percent) and Mposa (67 percent), but renting is restricted in Mpheta (95 percent) and Likapa (91 percent). Thus, renting is allowed where families allocate gardens and it is prohibited in sites where chiefs control allocation of gardens. In Mpheta and Likapa sites, chiefs indicated that if a member is found renting out a garden they take the garden away because renting is similar to selling and nobody is allowed to sell land. Renting also implies that an individual has more land than needed. However, some individuals indicated that in practice renting takes place.

Table 9 Modes of access vs freedom to rent out wetland gardens

Mode of access	Study site				
	Mposa (%)	Mpheta (%)	Likapa (%)	Khanda (%)	Total (%)
n	43	42	43	42	170
Through local leaders	4.7	66.7	51.2	4.8	31.8
Through family members	27.9	28.5	39.5	16.6	28.2
Total not free to rent out	32.6	95.2	90.7	21.4	60.0
Through local leaders	7.0	2.4	4.7	14.3	7.1
Through families members	60.4	2.4	4.6	64.3	32.9
Total free to rent out	67.4	4.8	9.3	78.6	40.0

At the time of the survey, rental charges varied from K300 to K700 depending on the size of the garden. Renters usually come from places such as Zomba City and Liwonde, although some are from within the sites. The renters mostly used hired labour (*ganyu*) to work in the gardens and sometimes the owners of the gardens also participated in *ganyu*.

DISCUSSION AND CONCLUSION

The study has shown that people with access to wetland gardens have an advantage in terms of food availability. Seventy-five percent of the respondents with gardens said that they have enough maize for family consumption. Wetland gardens also supplement cash income in the households. Those who are unable to gain access to a wetland garden thus are at a considerable disadvantage. Those who can either borrow or rent a garden are somewhat better off. However, rental fees may be high and thus limit access.

While acknowledging the value of wetland gardens, we must emphasize that the gardens rely on water from the streams. This implies that an increase in demand for wetland gardens has a potential for conflict over water with stream-bank gardens and with irrigation schemes upstream. To resolve such conflicts, the water policy proposes to give water permits to any users using water for any productive purposes. However, it

is not clear how thousands of small farmers with small wetland gardens will be organized to get water permits.

The value of wetland gardens is further threatened by the fact that people who do not have gardens cultivate in the hills. These are the people who cannot afford to rent, or they do not have relatives from whom to borrow, or the gardens are all fully allocated such that the wetland has reached a saturation point. A report by FAO (1996) warned against cultivation practices in the uplands, especially when this is done without soil conservation techniques. The argument is that upland cultivation facilitates soil erosion and siltation in rivers, and it encourages peak flows in streams that then facilitate gully formation in wetlands. The overall result is a reduced flow of water into the streams and lowered water tables in the wetland. The effects on the farmers are that the area under cultivation is reduced and the period when the wetland can be cropped on residual moisture is reduced as well, a situation that ends in increased conflicts over access to, and use of, areas with moisture. However, on a positive note, soil erosion brings fertile soils down into the wetland as farmers themselves pointed out; they said that they do not apply chemical fertilizer because “fertility comes from the uplands.”

The investigation has revealed two patterns of access to and use of wetlands and wetland gardens: one in which chiefs claim ownership and allocate gardens, sometimes on an annual basis, and the other in which families and households claim ownership. What accounts for the difference seems to be the interpretation given by different chiefs and families to their rights and obligations. As far as the household claims are concerned, the wetland and wetland gardens may be seen as their *de facto* private property. This supports the analysis in the new land policy (GoM 2001), which accepts that “customary” tenure more often means family property, and which proposes the means for legal recognition of such private ownership. As far as the chief-controlled system is concerned, those chiefs who demand annual payments argue that access to the wetland is conditional on the willingness of an individual to pay tribute. This is disputed by some other chiefs as well as by some villagers. Rising demand for the wetlands, especially in view of recurrent droughts and dwindling uplands for cultivation, may well increase the tendency of some chiefs to claim a monopolistic control over wetlands.

If chiefs were to succeed in doing so, one may expect that access will be even more restricted, especially for incoming migrants. Already, some chiefs say they are attracted to the practice as a way of increasing their income. Moreover, existing conflicts over this issue have generated arguments over who is the rightful chief, some claiming that a certain lineage is not supposed to provide chiefs because they came into the area later, while another lineage claims that the other group cannot provide chiefs because their ancestors came to the area as slaves. Analysis suggests that such cases are not about chieftaincy or original settlers alone, but about who should have authority over valuable land. The results are social conflict, social divisions, and splits within villages.

In terms of broadening access, it seems that where chiefs allocate gardens in return for payment, people from outside the districts and even outside Malawi have obtained gardens. This is contrary to the pattern of *de facto* family property, where families control and allocate gardens, almost always to relatives. On the other hand, the practice of demanding annual payments by some chiefs reveals a monopolistic

pattern and is a clear deviation from their traditional role as custodians and administrators. It is also counter to the proposal in the new land policy (GoM 2001) that *dambos* should be exclusive to members within the Traditional Authority's area or be converted to smaller areas under common property.

The study therefore concludes that wetland cultivation is very important for people's livelihoods. However, this value is threatened by other activities in the ecosystem; its sustainability, therefore, is dependent on the collaboration among various users, as well as collaboration among wetland-related policies in land, agriculture, environment, wildlife, and water sectors. Achievement of wetland utilization goals for agriculture is dependent on enhancing access by various people. At a national level, the achievement of the goals is dependent on putting in place a policy and laws. But the policy and laws have to be sensitive to the social and political relations existing in the wetland, otherwise there is a chance that the policies will only work to the advantage of the chiefs to accumulate land for themselves at the expense of other villagers. At the local level, enhancement of access is dependent on establishing governance practices that are transparent and accountable to the people in allocation of the gardens and dispute resolution. This would require formation of groups of local users to manage conflict resolution and land allocation systems, instead of leaving such systems in the hands of chiefs only. In sum, this study reveals a localized debate over the value, modes of access, and legitimate rights over wetlands and wetland gardens, which, so far, has remained invisible to policy makers, planners, and development practitioners. It is to be hoped that the detailed analysis of the social and political relationships in wetlands provided here will further more appropriate consideration of these valuable resources in policy and administrative procedures.

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