GENDER RELATIONS IN UTILIZATION AND CONSERVATION OF THE KILOMBERO FLOOD PLAINS RAMSAR SITE WETLANDS, TANZANIA

Munishi[1], P. K.T., Kilungu[2], H. H., Jackson[1], H. and Soka[3], G.

[1]Department of Forest Biology,
Sokoine University of Agriculture
PO Box 3010, Morogoro, Tanzania

[2]Department of Tourism and Hospitality,
Open University of Tanzania,
P. O. Box 23409 Dar es Salaam, Tanzania

[3]Department of Wildlife Management,
Sokoine University of Agriculture,
PO Box 3073, Morogoro Tanzania

Corresponding Author: pmunishi2001@yahoo.com

ABSTRACT

Gender relations refer to the gender dimensions of the social relations structuring the lives of individual men and women, such as the gender division of labour and gender division of access to and control over resources. This leads to the differentiation of roles that a different gender has to play in the society. The present study was conducted in the Kilombero, Morogoro region to investigate gender relations in utilization and conservation Kilombero wetland resources. Data were collected from six villages namely Mofu, Kivukoni, Idete, Chita, Melela and Mngeta. Household interviews and transect walks were the main approached used for data collection. It was revealed that men, women, elders, and youth participated in various activities and the utilization of Kilombero wetland resources. Amongst gender categories, 78.3% of the women, 52.2% of the men, 50% elders and 47.4% youth practiced crop farming. There were more men (62.2%) utilizing the wetland for income alone than those utilizing the wetland for both income and food (37.8%). More women (41.7%) than men utilized the wetland for food alone. More men (64.4%) than women (63.9%) play an important role in conservation of wetlands through educating others on sustainable utilization of wetland resources. Elders (43.3%) were reported to participate in wetland resources conservation by advising youths on sustainable use of resources because they are aware of what is happening today compared to the past. Youth (42.8%) do the same because most of them are educated and are willing to adopt conservation measures. Land in wetlands was accessed by both males and females though total area cultivated by men was larger than that by women. The wetlands of Kilombero are utilized by all gender for various economic activities though males and young people have the biggest share. This disparity in access to wetland resources can be eliminated through more awareness on the gender dimensions of wetlands management.

INTRODUCTION

Gender refers to the socially constructed roles and responsibilities assigned to men and women by the society (Lwanga 2001). It refers to socially ascribed roles, responsibilities and opportunities associated with women and men, as well as the hidden power structures that govern relationships between them though it may as well have other dimensions. Gender alludes to the cultural, social, economic and political conditions that are the basis of certain standards, values and behavioural patterns related to genders and their relationship (Riquer 1993, IUCN 2010). Despite recent advances, it still remains the case that in most societies there are significant differences between the rights and opportunities of women and men. These include, among others, differences in relation to land and resource rights, possibilities for advancement at work, salaries and opportunities to participate in and

influence decision-making processes. The reality is that inequality between men and women is ingrained in social norms and values around the world. In its totality gender may refer to different social roles that women and men play, and the power relations and processes between them (Lwanga 2001; Sass, 2002). These roles and responsibilities vary between cultures, they are learnt and they change over time. Gender relations can also be referred to as dimensions of the social relations structuring the lives of individual men and women, such as the gender division of labour and gender division of access to and control over resources (Sass 2002).

Understanding women and men's relationships with the environment plays an important role in developing solutions to more sustainable use of natural resources (Sass 2002; GTZ 2010). Women and men have different motivations and experiences of corporation, related to the different roles and responsibilities in their lives, families, households and communities (Sass 2002). Men and women also have different interests and preferences in natural resources conservation, and face different constraints in participating in natural resources management institutions (Agarwal 2000; Sass 2002).

Neglecting gender not only leads to a mistaken assessment of existing community institutions for NRM in terms of participation, distribution, equity and efficiency, but also distorts the understanding of human impacts on the resources (Sass 2002; Agarwal 2000). This can lead to the suppression of opportunities for forming and sustaining successful resources management groups. Agarwal (2000) reported that there were institutions which appeared successful after group functioning had been assessed, for example in participation, equity and efficiency, but nevertheless lacked a gender perspective in the extent of community participation in decision-making, equity in the distribution of costs and benefits, and efficiency in utilizing and protecting resources.

The present study assessed gender relations in conservation of wetlands among Kilombero wetland resource users. It was expected that such findings would help identify (i) gender participation and the activities carried out by men, women, elders, and youth in the utilization and conservation of Kilombero wetland resources; (iii) whether men and women have equal access to, and control over the wetland resources in the Kilombero Flood Plains Ramsar Site.

RESEARCH METHODS

Location of the study area

The Kilombero Valley Flood Plains Ramsar site (KVFPRS) covers approximately an area of 596 908 ha. The central point coordinates are 8 °40' S and 36 °10' E and lies between 210 and 400 m.a.s.l. with the main part of it lying between 210 and 250 m.a.s.l. It is the largest low altitude inland fresh water wetland in the world. It is divided by the Kilombero River and falls within two districts of Kilombero and Ulanga in Morogoro region. KVRS boundary follows watershed boundary rather than administrative boundaries as such it is treated as one entity. The Ramsar site has a total of 108 villages adjacent to it with 72 villages in Kilombero and 36 villages in Ulanga. Agriculture is the main source of food and income generation activity followed by fishing though productivity varies depending on the availability of moist land. Majority are subsistence farmers involved in the production of maize, rice and green vegetables.

Population

According to the 2002 National Census (URT 2013), the population of Kilombero district was estimated to be 321,611 people. The major ethnic groups included Wapogoro, Wandamba, Wabena and Wambunga. Immigrant pastoralists present in the area included Wasukuma, Wamasai and barbiag who are pastoralists.

Data Collection and Analysis

Purposive sampling was employed for village selection. Criteria included closeness to the wetland, extent of wetland utilization and dependence on wetland products. Assumption of this study was that stakeholders would provide the most and required information, though triangulation was also employed in order to reveal some information, especially gender participation in wetland conservation within local communities.

We conducted household surveys in order to know local peoples' understanding on wetland resources utilization and sustainable wetland management. Six villages namely Mofu, Kivukoni, Mngeta, Chita, Melela and Idete were surveyed. Households for interviews were selected randomly from the village register. We interviewed a total of one hundred and eighty (180) respondents; 30 respondents from each village. Only above 18 years respondents were interviewed. In order to elicit information, open and close-ended questions were used to collect data from the respondents related to gender relations in wetlands conservation. Data from the surveys were coded and analyzed using Statistical Package for Social Science Software (SPSS. version. 16).

RESULTS AND DISCUSSION

Respondents Characteristics

About 63.3% and 36.7% of respondents were males and females respectively (Table 1). This is because in most cases, males were more available and ready to engage in discussions. A larger proportion (56.7%), of the respondents was in the age group 18 - 40, while 35.6% were in the category of 41-60 age group and 7.2% were above 60 years old. This implies that majority of the respondents had been in the area for more than 20 years and thus with sufficient knowledge and experience about the area in regard to gender dynamics in the management of the wetland.

Household Origins

Immigration in Kilombero wetlands was reported to be high (44.4%) due to the presence of adequate forage, water and fertile soil. These factors have attracted people to the area. Immigration into Kilombero wetlands is attributed to the fact that the area is endowed with favourable conditions which favour various economic activities including fishing, grazing and agriculture.

The respondent's characteristics in this study included households' origin, sex, age, education level, and occupation. These characteristics were used to portray the general status of respondents and how the status influenced perception of gender participation in wetland management practices in the study area. The target population was made up of women, men, boys and girls who utilized Kilombero wetlands in various ways.

Respondents' education level

About 83.9% of the respondents had acquired primary education, 8.9% secondary education and only 7.2% had no formal education (Table 1). Since the majority of the population had formal education and likely more formerly knowledgeable on natural resource management the potential for participation in sustainable wetland practices by all gender is high among the communities.

Occupation

Majority (92.2%) of the respondents were farmers while only 6.7% were involved in other economic activities such as fishing and business (Table 1). This indicates that Kilombero wetlands are fertile and suitable for agriculture. It was observed that rice, maize and green vegetables were the main crops grown in the area.

Table 1: Household Characteristics in the Kilombero Floodplains Ramsar Site

Variable	% population
Level of education	
Never went to school	7.2
Primary education	83.9
Secondary education	8.9
Tertiary Education	0
Gender	
Male	63.3
Female	36.7
Age	
< 18	0.6
18 – 40	56.7
41 – 60	35.6
> 65	7.2
Origin	
Native	55.6
Immigrants	44.6
Occupation	
Farming	92.2
Fishing	2.8
Employed	2.8
Business	1.2

NB: Multiple responses allowed

Economic activities and wetlands goods and services in Kilombero wetlands

Majority (91.1%) of the respondents admitted that agriculture was the main economic activity, followed by fishing (75.6). Other economic activities included livestock grazing (22.8), timber harvesting (13.9), trading wetland products (7.8%) and handcrafts (6.1%) (Table 2). The major wetland goods from the Kilombero wetlands are agricultural products (92.3%), fish (72.8%), and water (50%). Others included firewood (30.6%), wildlife (30%), craft materials (16.1%), construction materials mainly thatch grass, poles and ropes (15%). A few respondents admitted to obtained fodder and medicinal plants from Kilombero wetlands. According to Solomon, (2004) and Munishi *et al.* (2010) wetlands provide numerous socio-economic benefits to local people: They are a source of clean drinking water and water for domestic uses. Craft materials including papyrus, wild-date-palm leaves, and clay soil for pottery, fish, firewood, wild animals, construction materials, and medicinal plants are obtained from most wetlands. They also provide dry season grazing areas for cattle, and critically, they are important agricultural resource where green vegetables and cereals are cultivated on the residual moisture during the dry season The main value obtained from wetlands, as conceived by many, is the consumption and use of goods, such as water, fish, firewood, building materials, agricultural products, medicine, and pasture (Luwumu and Acuba 1998; Bakema and Iyango 2000). Flood control, wildlife habitats, source of rainfall, navigation, energy production e.g. hydroelectric power and plant biomass and good climatic condition were the services mentioned by few respondents to be provided by Kilombero wetlands. Though majority know about products from the wetland only a small of the population in communities adjacent to the Kilombero wetlands are aware of services provided by the wetlands.

Agricultural products are the leading wetland goods due to the fact that about 94% of the respondents were farmers. A study by McCartney and van Koppen (2004) reported that agriculture employs about 90% of the total population in the Kilombero wetlands.

Table 2: Economic activities and major wetland goods and services in the Kilombero wetlands

Variable	% population
Economic Activities	
Agriculture	91.1
Fishing	75.6
Grazing	22.8
Timber harvesting	13.9
Trade	7.8
Handcraft e.g. Pottery, Basketry, etc.,	6.1
Wetland Goods	
Agricultural products	92
Fish	73
Water	50
Firewood	31
Wild animals	30
Crafts	16
Building materials (thatch grass, poles, ropes)	15

NB: Multiple responses allowed

Gender relations in access to and utilization of Kilombero wetland resources

Gender relations in the utilization of the wetlands involved women, men, youth and elders who use wetland resources differently. They attach different values to these uses in relation to the roles they perform in the society, for example women may perform both domestic and economic activities, while men performed mainly economic activities, and limited domestic activities (Sass 2002); Flintan 2003). It was observed that that women in different Kilombero floodplains Ramsar Site performed both domestic as well as economic activities while male's role was more on economic activities. Other economic activities such as fishing was performed solely by men though other activities in the fishing production chain involved both gender. This agrees with the findings by Flintan (2003) who suggested that both women and men in Africa and Asia, and particularly those from poorer households, could still be highly dependent on the collection of natural resources for fulfilling household needs and as a contribution to food security and poverty alleviation. In this study it was found that men had more access to wetland resources than women. There are great differences between women and men in access to and control over resources; each gender has distinct roles and responsibilities in use and management of resources and in economic and household production (Agarwal 1986b). Land was accessed by both males and females since farming was done by both. But the total area farmed by men was larger than the total area farm by women (Table 3). This was due to the fact that women had no land ownership rights instead they were given small portions by men for gardens. In most societies, women typically have fewer ownership rights than men (Rocheleau 1996). It was observed that men were involved in fishing activities and small scale irrigation around Kilombero wetlands. The results revealed that about 43.3% of men were involved in fishing activities in Kilombero wetlands. Fishing is a risk activity done under hardship conditions. Men prefer to fish because it is a good source of income for the household. There were a few women who had access to forest resources, mainly collection of firewood. Men were reported to be involved in the collection of building poles and ropes, hunt wild animals and illegal charcoal burning. Game meat was mostly accessed by males because hunting was considered a males' role. Charcoal-making tends to be the responsibility of men, though it was reported to be illegal activity in the area. This study revealed that forest products land, wildlife, and fish were the resources that were predominantly accessed by males. While females accessed only clay soil for pottery and water for domestic uses. This suggests that women's access to wetland resources was limited by their gender roles, which were in

turn determined by their culture. According to Meinzen-Dick *et al.* (1997), the gender differences faced by women in access to natural resources affect natural resource use in four main areas: environmental sustainability, efficiency of resource use, equity of resource allocation among users, and empowerment of users, particularly women. The reasons were the cultural perceptions, beliefs, and customs inherited from predecessors, the belief that God designed men and women to play the roles they play, the feeling that various roles women and men play are those they consideressential, the roles that individuals adopt are expressions of the skills they are born with. The availability of resources was also mentioned as a reason for the role differences between gender groups. Thus, as UNDP (2002) commends, one of the key issues that needs to be addressed by African countries is the low participation of women in terms of access, control (decision-making structures; unequal power relations and limited control by women over basic resources) and management due to lack of opportunity and information about natural resources.

Table 3: Gender access to wetland resources and participation in conservation of wetland resources in the Kilombero Floodplains Ramsar Site

Variable	**Gender**			
Access to wetland resource	Men	Women	Elders	Youths
Land	107	62	na	na
Water	56	32	na	na
Fish	23	10	na	na
Forest	21	9	na	na
Wildlife (bush meat)	7	2	na	na
Participation in Conservation	64	63	43	43

NB: Multiple responses allowed.

Gender participation in the utilization of Kilombero Wetland

The socio-economic activities carried out by individuals in Kilombero wetlands included crop farming, fishing, harvesting craft materials, gathering medicinal plants, and livestock keeping. The main socio-economic activity carried out by both women and men in Kilombero wetlands was crop farming. The agricultural livelihoods of poor rural women and men depend on the condition of natural resources, particularly livelihoods of people living on fragile lands (World Bank 2005). Amongst the gender categories, 78.3% of the women, 52.2% of the men, 50% elders and 47.4% youth practiced crop farming. Cultivated crops included vegetables such as tomatoes, onion, cabbage and eggplant Food crops included sweet potatoes, Irish potatoes and yams, while cereals included maize and rice. This is in agreement with observations by Luwumu and Acuba (1998) that production and consumption goods, such as agricultural products were the main values obtained from wetlands by an average rural people. Even though there were more women farmers than men, individual women had smaller gardens than individual men farmers. It is possible that the total area cultivated by men was larger than that cultivated by women (Table 3). The majority of women and men cultivated for both food and cash crops, which implies that both women and men rely on the wetland not only for food security, but also household income from sale of various wetland products such as fish and craft materials. It was learnt that women cultivate mainly for household food security, while men cultivate mainly for commercial purposes. This is attributed to women's reproductive and nurturing roles such as household maintenance, compared to men's productive roles such as market or subsistence production with an actual value or potential exchange value (Francis and Jahn 2001; Flintan 2003). There were more men (62.2%) utilizing the wetland for income alone than those utilizing the wetland for both income and food (37.8%). About 41.7% of women admitted to utilize wetland resources for food only. The main benefits from the wetland reported by youths were income, followed by food while for the elders food was the major benefit followed by income.

Kilombero Wetland Resources Valued by Different Gender Groups

It was learnt that men valued fish, forest and land resources while women valued forest and water resources. Youth valued both land and forest resources. Respondents indicated that men valued forest resources most because forest was a source of building and construction materials, grass for thatching houses and charcoal production. The SARDC (2000) stated that men's traditional roles required them to construct houses and granaries using forest resources. Land was valued most because it was used for growing crops and building houses. Men valued wildlife and fish resources because they were a source of food and income though it was obtained illegally. They used resources usually associated with their gender roles in society as household heads and family protectors. The respondents felt that women valued water and forest most, followed by land resources. Water was highly valued because women's daily household tasks required water for cooking and cleaning. Forest resources were valued because they were a source of firewood. Fish resources were also valued by women because they were a source of protein for the family. Clay soil was valued by women because it was a source of income through selling pots. Youth valued forest resources most because of charcoal-making business and land because they were involved in helping their parents. The results indicate that men benefited most from selling the natural resources which they valued than any other gender groups.

Gender participation in Conservation of Kilombero Wetlands

Both men (64.4%) and women (63.9%) play an important role in conservation of Kilombero wetland resources. About 43.3% of the elders admitted to have participated in the conservation of wetland resources by advising the youth on sustainable use. It was learnt that elders were aware of what is happening today compared to the previous time. The youths (42.8%) were doing the same because most of them are educated so it was easy for them to adopt conservation measures. Historically, NRM and other conservation processes have been dominated by men, and have their roots within the hunter-focused and, later, the preservationist-focused policies established during the colonial period (Said 1978; Grove 1995). Women in particular, played little part in conservation processes, the movement being seen as a "man's world". Where this world interacted with communities, it did so through local male leaders (McClintock 1995). As conservation moved from being based on protectionism to becoming more community-focused and inclusive, the importance of involving all natural-resource users became evident (Table 4). It is apparent that more males participated in conservation activities than females (Figure 1). Women were more engaged in domestic activities and caring for their families. It was clear that both males and females were involved in conservation of Kilombero wetlands through avoiding deforestation in water sources, planting trees along water sources, protecting wetland resources from poaching, reporting those who destruct and utilize wetland resources illegally to the government officials, educating others on sustainable utilization and conservation measures of wetland resources. Flintan (2003) suggested that men may resist women's participation in conservation and development because they feel threatened. Men thought that women's domestic roles and responsibilities may be neglected if women took part in any extra-household activities. Both males and females were willing to participate fully in educating others on how wetlands resources should be sustainably utilized but they lack support from their government.

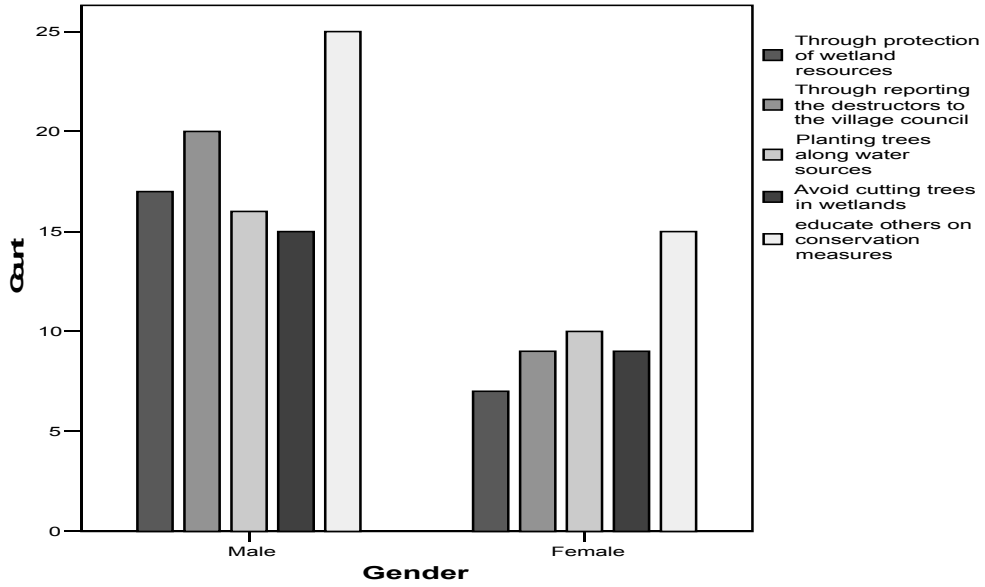

Figure 1: Activities done by men and women in Conservation of Kilombero Wetlands

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Kilombero Valley Floodplains Ramsar site (KVFPRS) wetlands have substantial local regional and national economic value emanating from products acquired from the utilization of the wetlands.

The interrelations among gender in the utilization of the wetlands prompts a need for taking a gender-sensitive approach if a fuller understanding of the context and socio-economic impacts of wetland resources is to be achieved.

Gender divisions of labour has differential impacts to the different ways which men and women relate to, and use, wetlands, based on their gender roles at household and community levels.

Gender equality is lacking among Kilombero wetland resource users. Both men and women are the main users of Kilombero wetlands whose main activity was crop farming. Majority of women and men were engaged in agriculture for both food and income. Based on the benefits accrued from the utilization of the wetlands both men and women participated equally in the conservation of the wetlands.

Gender equality in access to wetland resources and economic benefits is an important aspect in the conservation of the Kilombero wetlands.

Gender awareness among the wetland resource users can ensure gender equity in access to, control over and conservation of the wetland resource.

Behavioural changes on conservation and commitment to conservation among resource users of Kilombero wetlands will increase the effectiveness of involvement in wetlands management practices for future use.

Policy and extension support on enterprises that enable both women and men understand the different roles that men and women play in wetlands utilization is important

REFERENCES

Agarwal, B. 2000. Conceptualizing environmental collective action: Why gender matters. *Cambridge Journal of Economics*, 24: 283–310.

Flintan, F. 2003. *Engendering Eden: Women, gender and ICDPs: Lessons learnt and ways forward*. Summary document. Wildlife and Development Series No. 6. London: International Institute for Environment and Development. Francis, J and Jahn, S. (2001). *Integrating gender*

perspectives: Realizing new options for improved water management. Bonn: International Conference on Freshwater. 10 pp.

GTZ 2010. Climate change and gender: economic empowerment of women through Climate Mitigation and adapatation. 21 pp.

Hunter, L.M., A. Hatch and A. Johnson 2004. Cross-national gender variation in environment behaviours. *Social Science Quarterly*, 85 (3): 677–694.The United Nations Development Programme (UNDP), and the International Union for Conservation of Nature (IUCN) 2010. Training Manual on Gender and Climate Change. 262 pp

Lwanga, M. 2001. Gender, environment and sustainable development. A paper presented at the Conference on Sustainable Development, Governance and Globalization: An African Forum for Strategic Thinking towards the Earth Summit 2002 and Beyond, Nairobi Kenya September 17–20, 2001.Mugabe, M.N. 2003. Gender relations in accessibility and control of forest resources in Muko Sub-county, Kabale District, Uganda. MSc. Thesis, Makerere University, Uganda. 87 pp.

Mulugeta, S. 1999. Socio-economic determinants of wetland in the Metu and Yayu-Hurumu Weredas of Illubabor Zone. Paper Presented at the National Workshop on Sustainable Management of Wetlands in Illubabor Zone, December 13, 1999, Addis Ababa, Ethiopia. Ethiopian Wetlands Research Programme, Metu, Illubabor.

NEAP (National Environmental Action Plan). 1990. Wetlands, water resources, fisheries and aquatic biodiversity in Uganda, Issues Paper.

NEMA (National Environmental Management Authority) 1996. *National wetland conservation and management programme phase III, 1996–2001*. Wetlands Unit, Ministry of Natural Resources with technical assistance from the International Union for Conservation of Nature (IUCN).

Nyachwo, F. 2000. A gender analysis of the effects of adopting clonal coffee production on household workload: A case study of Ntenjeru Sub-County, Mukon district. M.Sc. Thesis, Makerere University, Uganda, 61 pp.

Ongia, F.O. 2000. Gender roles and the conservation of non-timber forest products in Agwata Sub-county, Lira district, Uganda. MSc. Thesis, Makerere University, Uganda, 74 pp.

Watson, E. (2005). Gender-sensitive natural resource management (NRM) research-for ¬development. DFID NRSP Programme Development Report PD123: Cambridge, UK

Campbell, J. 1991. *Women's role in dynamic forest-based small-scale enterprises. Case studies on Uppage and Lacquerware from India*. Rome: FAO.

Sass, J. 2002. *Making the link — Women, men, and environmental change: The gender dimensions of environmental policies and programs.* Washington, DC: Population Reference Bureau.

Vernooy, R. 2006. *Social and gender analysis in natural resource management. Learning studies and lessons from Asia*. Canada: IDRC.

Mugisha, W. and Nyakojo, 1999 'Gender mainstreaming in the wetlands programme'. National Wetlands Programme, Government of Uganda,.