

WOMEN LAND AND WATER RIGHTS IN SOUTHERN AFRICA

**INTEGRATED ASSESSMENT OF GENDER, LAND AND WATER AND THEIR
IMPACT ON FOOD SECURITY**

by

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Women's Land and Water Rights in Southern Africa

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I. INTRODUCTION

With the new politico-economic environment that offers attractive investments possibilities to national and foreign investors, Mozambique has undertaken an economic development program, which largely depends on the improved administration and utilization of land and water resources. With an abundance of land and water resources, Mozambique possesses an excellent potential for agricultural development, animal and forest production to assure food security of its local population.

Land and water are the primary natural resources that enable agriculture, food production and rural development in Mozambique. They are also equally important factors of production whose association with appropriate technologies and related factors such as labour, investment and institutions enhances their productivity. This fortunate association has enabled global agricultural production to outpace growing demand despite declining availability of per caput land and water resources. For this trend to continue, increased output will have to come mainly from intensified production, using water for irrigation as general land expansion can make only a limited contribution. Gender is an important factor for this trend to occur. Gender is defined in this paper as the social determined division of roles and responsibilities and power between men and women. These socially constructed roles are usually unequal in terms of power, decision making control over assets and events, freedom of action, ownership of resources and so on.

Land and water use conflicts, however, are widely considered to be the major obstacle to economic development in the country in general and in food security in particular. These conflicts have been associated with the large irrigation schemes in the south of the country; questionable tourism development initiatives along the coast; the unplanned location of foreign investment; the lack of transparent procedures in relation to land allocation, between different land uses, and questionable practices with respect to utilization forest and wildlife. Another major factor contributing to land and water use conflicts is the fact that land and water is becoming one of the main commodities in rural areas, but it still belonging to the government. Land and water has a market value and communities are very often making transactions, and land and water markets are emerging which could incorporate smallholder's communities into larger commercial interests. These conflicts are negatively affecting the socio-economic, political and physical environments of the country. Therefore this paper discusses some of the impacts of land and water use conflicts on food security in rural areas of Mozambique, and discusses the causative factors behind some of food insecurity using a gender perspective, take into account the complexity of land and water access and control, using Namialo, an Administrative Post of Meconta District, northern Mozambique as a case study.

Mozambique is one of the poorest countries in the world, even though its economic growth has been strong since 1993 when the peace treaty was signed and the long civil war ended. The growth -which has reached an average level of 8 % annually- is concentrated very much in the South, more specifically in the Maputo and Beira

Corridors. Over 70% of Mozambican's 18 million people live in absolute poverty. General poverty is common all over the country, but more so in the rural areas and during the past three years either floods or drought have worsened the situation. In 2001 Mozambique ranked in the 157th place in UNDP's Human Development Report, being the sixth poorest country in the world. The struggle against poverty has become the major policy for the Mozambican government and it has prepared, with the help of donors and the World Bank, the **Action Plan for the Reduction of Poverty (PARPA)**. This 5-year plan (for 2001-2005) seeks to reduce the incidence of poverty from its current level of 70 % to 60 % by the year 2005 and to less than 50 % by the end of this decade.

Human Development Indicators by gender show a large similarity with the poverty indicators in Mozambique in particular for women which accounts for more than 60% of the poorest in the country. Fecundity index is approximately of 5.6, and the degree of literacy is around 23.6% in average (16% in rural areas). Cultivated areas by women are less than 1 ha per family in average although 95% of women labor is applied into this sector. Only 41.9% of women have gained any income in 2003. Poverty eradication is the main goal of the Mozambican Government and poverty is defined in this paper as:

- *Incapacity of individual or families to satisfy their minimal food and non-food needs (UNDP 1998).*
- *A family or individual is considered poor when does not have access to any type of income, productive resources or basic social services which would guaranty a condign and health life in a sustainable manner (MPF 1999).*

Poverty incidence in the female headed household is slight high than male headed household. In the rural areas 19.5% of the non-poor are female headed household which in the urban areas this number accounts to 20.6%.

In the rural areas the poor and non-poor have the same ways of accessing the land and they have approximately the same amount of land per household. Land distribution between these two groups is not proportional. Approximately 59% of the poor have less than 1 ha, 21% have less 2 ha, while 22% of non poor have less than 1 ha and 25% have less than two hectares. 13% o the rural people who practice agriculture are using labor.

Other important statistics include that the population is very young (55.2% dependency ratio, the population density is low and scarce transport infrastructure results into isolation of many regions. Most of the population live in rural areas (77%) and most of the workforce is engaged in the agricultural and fishery sectors (95%). There are almost no landless people in Mozambique (less than 2%), but productivity is low and mechanization is almost inexistent. Markets are predominantly informal and do not reach remote areas and the environment is under stress from over exploitation (fishery, forest products) and recurrent calamities. Education levels are very low, with 52% of the men and 16% of the women in rural areas having some schooling.

The majority of small-scale producers are women. Women perform the bulk of agricultural labour in producing food for family consumption as well as producing crops

for the domestic and export markets. A Gender review conducted by DANIDA reports that “women have less control than men do over key resources such as land, labour, credit and agricultural inputs and have less access to education. Under widely prevalent customary norms in Mozambique, men have privileged rights over land through inheritance rights¹ and political position (Loforte 1996; Waterhouse 2001). Their relative power is enhanced through privileged access to employment. According to government statistics, over 95% of women work in (mainly subsistence) agriculture compared to some 66% of men (INE 1999). Men predominate in most areas of formal sector employment.

Basic social service provision in most of the country and especially in rural areas is still very poor. This is reflected in key social indicators. Life expectancy at birth was 43.5 years in 1999 (GOM 2001: 25) and expected to decrease with the growing impact of HIV/AIDS. Rising HIV prevalence rates are already estimated at 13% of the population (MoH 2003). High HIV/AIDS incidence occur between 15 to 49 in 2002 and it is estimated that 500 infection cases occur each day in particular in the rural areas. According to the last general census of 1997, infant mortality was 146/1000. In the same year only 18% of the population had completed primary school or above (MPF 1998). Less than 10% of the economically active population had formal sector employment. A GDI indicator of 0.36 puts Mozambique in the lowest rank for Southern Africa.

Food security is also a problem in Mozambique. The basic causes of food insecurity and chronic malnutrition in rural Mozambique results from lack of food availability, including its inappropriate utilization. Lack of availability and access are partly attributed to low production, lack of access to technology, inadequate marketing infrastructure and low income opportunities. Food availability and access problems differ, to an extent, between regions of Mozambique, i.e. from northern of the Zambezi river food production is substantial higher than in the areas in the southern. This is due to different climatic conditions, levels of soil fertility, population concentrations and other factors.

Water right is the right to use water-not own it. Water availability in Mozambique per capita is approximately 5556 cubic meter per year, considering only the runoff water or 12000 cubic meters per person per year if we include the run off originated from neighborhood countries.

2. LITERATURE REVIEW

2.1 Historical overview of land and water Utilization

During the colonial period in Mozambique the customary system of land and water ownership was not clearly defined. Only by an effective occupation a man or woman had a right to use a portion of land. While water access in particular close to irrigation areas was controlled by colonial authorities. During that period land was a collective property in which the division of land within the tribe or social organization had to do with the needs of families, dominated by man. However, the statutory systems was

¹ Men are privileged inheritors of land both through matrilineal descent systems where land control passes from father to son or through matrilineal descent where land passes from uncle to nephew.

clearly defined in which the Colonial Portuguese government attributed concessions for cotton, sisal and tea exploitation in the northern Mozambique, timber and mineral extraction in the central part of Mozambique and the scheme of *'colonatos'* in the southern Mozambique to large companies and Portuguese individuals.

For example, in the northern part of Mozambique land was allocated based on international cotton demand and price. According to Isaacman and Isaacman (1983), in the early 1940s a slight increase in cotton production led the companies to introduce quotas among smallholder growers, in particular for man and to take repressive measures against local farmers which resulted in an increase into the total area of cotton production, from 27,000 ha to approximately 300,000 ha. Almost all-productive farm land was diverted to cotton and sisal production.

In the Central part of Mozambique the Mozambican company was the majority concessionaire, which administered more than 100.000 sq. km. According Newitt (1995), the Mozambican company operated in the areas from 1878 through 1941 and they had the right to grant land, water and mineral concessions. This company acquired also the monopoly to market all the natural resources in the area including cash crops, constructed roads and improve ports. In exchange the colonial government received 10% of the shares and 7.55% of the total incomes from the exploitation of large plantations of coconut, wild rubber, sugar, sisal and cotton (First 1971).

In the 1950's, the colonial government introduced an incentive policy to attract colonial settlers, the military and other Portuguese residents to Mozambique to take an active role in commodity production. As a result a large number of colonial settlers who employed seasonal African wage laborers came to Chokwe and seized large tracts of land from the local population to create their own plantations called "*colonatos*" along an irrigation schemes. They controlled the access to water in these irrigation schemes. With an increase of large-scale rice plantations using water for irrigation under the control of João Ferreira dos Santos (JFS) in Chokwe and forced rice cultivation in some parts in the valley of Limpopo river, land become a very important commodity, in particular the land located in the irrigation schemes (Bowen 1994).

After independence, land and water resources were nationalized and the customary system, considered feudal and tribal, was undermined (Meyers 1994a) although some of the traditional systems continued in place, i.e. Macua traditional system continued to be used although with less authority. The official development strategy to collectivize agriculture—i.e., the establishment of state farms, using large irrigation schemes and cooperatives was introduced and they had an impact on land and water. In many areas—but not in all—rural dwellers were forced into communal villages, often located far from their own land. They could not effectively farm both their own fields and cooperative land, resulting in abandonment of family land. Land and water become abundant resources. In many parts of the country, people moved into communal villages—a process that accelerated with the encroachment of the war in the early 1980s—and grew mostly in the cooperatives, leaving little labor to farm their own land.

Following Mozambique's adoption of a World Bank and International Monetary Fund (IMF) structural adjustment program in 1986, the government changed its development policy from socialist to capitalist. Under capitalism, communal villages, cooperatives, and state farms have been largely reduced, if not eliminated. But Mozambican farmers have been confronted with new challenges: international financial institutions (e.g., World Bank and IMF), working hand-in-hand with the government, have given resources and funding projects that promote an increasing utilization of land and water (under large irrigation schemes). In addition, parastatals (e.g., SODAN) and large privately-owned companies (*João Ferreira dos Santos*) have been given large tracts of land to grow cash crop (Tique, 1996). Land and water competition started again and the land law and water use policy become outdated.

No transparent measures for land allocation were in place. For example a same piece of land could be allocated to men or women depending on the traditional system by the district, provincial and national authorities, even though there were people living and using it. Conflicts over land arose from an overlap of the traditional tenure system with the governmental system. The traditional system was counterbalanced by the government system which attributed the right of use to a parcel of land under legal title, recognized by the state and commonly managed at provincial and district levels by the state officials (Meyers 1994b). While access to water was free, even within the irrigations schemes.

The governmental boards at the provincial level had the responsibility to concede land for commercial use and other national projects under large irrigation schemes, while land concessions for smallholder rainfed agriculture was defined at the local level. However, the absence of a clear definition on what constitutes commercial and smallholder farmers and the absence of a clear land and water policies by the government has resulted in illegal takeovers by private groups as well as by both local and provincial authorities (Bowen 1992; Pitcher 1996). At this time access to water continued to be free. According to Meyers et al. (1993), land conflicts between the local and official systems in Mozambique have increased, and showed trends of intensification if the current governmental policies continue to grant large concessions to Joint Venture Companies (JVC) and the private sector without the participation of the local authorities. For example, in Nampula approximately 85,000 hectares of land have already been granted to JVC, of which 90% have been given by the provincial authorities (Meyers et al. 1993).

After the civil war, the power of the customary authorities and their relationship with their communities and local government's officials vary throughout the country depending in most cases to the degree to which the authority, Frelimo in this case, was successful in replacing them. In the northern and central Mozambique where Renamo is the most influential in many areas the customary authorities are the most dominant authorities. While in some parts of these areas controlled by Frelimo the official authorities had a very slight power of the land and water resources, since customary leaders continued to operate unofficially. The dual authorities result from the fact that the local populations do not recognize the governmental as the authority in the area.

In 1995 the traditional chiefs (*regulos, mwenes, cabos* and *capitães*) requested the government to restore their authority as leaders of their community with all benefits and rights acquired during the colonial period. Their authority, mainly of the *regulos*, was partially restored to include land and water allocation, resolution of land and water use disputes and authorization to temporarily use the land they cultivated during the colonial period. They had preferential access to land which, in general, they divided among themselves, taking the large and most fertile parcels close to water points.

2.1.1 The Land Law and Regulations (1997)

This law stresses that all the land belongs to the State. No private land rights exist, all holdings are secondary rights. It also maintains a bias toward land use planning for the good of society rather than market mechanism and decentralised control over resources.

Two types of rights are possible, one acquired through the state as a concession and leased, the second via occupation. With regard to the former, to obtain title the applicant must follow a legally described process and with regard to the second right, communities can secure occupancy rights based upon customary norms and practices, which are not contrary to the Constitution.

Collective and individuals bodies may acquire renewable titles for up to 50 years. Occupation rights by communities are supposed to have equal weight as those acquiring rights through the formal titling procedures. The new law also specifies competences of different levels of government to grant rights in land (provincial Governor 0-1000 ha; Ministry of Agriculture and Rural Development 1000-10000 ha; the Council of Ministers 10.000 ha and above). The duration of this license may be different from the land lease title. Both individuals and legally defined collective bodies (profit and no-profit associations and cooperatives) may obtain land titles.

Worth mentioning are also the Municipality Law and the National Environmental as well as the National Forestry and Wildlife Policies, which all are favourable to the objectives of the Project. *The Municipality Law* aims at decentralisation of authority to district level. The Municipalities Law stipulates that mechanisms should be developed for involving traditional authorities as well as any future community institutions in local administration. *The National Environmental Policy, The National Water Policy* as well as *The National Forestry and Wildlife Policy and Strategy* promote local community participation in the planning and decision-making process on the use of natural resources.

2.1.2 The 1991 Water Law

The basic principles and policies for water management are incorporated under the Water Law. The Water Law provides a structure for both conservation and development goals. It can spur efficient investment in water development and conservation. The Water Law addresses, among other things, the ownership of water resources, the legal nature and stability of water rights, the effective and beneficial use of water, the transferability of water rights, and the need to acknowledge and respect existing uses and customary entitlements. The Water Law also seeks to prevent the transfer of negative entitlements, negative monopolies and reduce transition costs.

The Law specifies that Ministry for Public Work through its National Water Directorate are the institutions that are leading the process for water management. These have a coordinated role while the Regional Water Administration (ARAs) based according to the major catchments are the implementing agencies of water policies, in particular on adjusting the water tariffs for urban areas as a way for cost recovering.

In 1995 it was approved the National Water Policy (PNA) which define the strategies to be followed by the water sector, including the main points defined by the Water Law and its specific strategies for supplying water for the main urban and peri-urban areas, rural supply, sanitation and integrated water management. The PNA define short term targets including the costs to fund them.

Under the National Water Policy is envisage that until 2000 at least 40% of the rural population having access on a daily basis 20 litres of water per person obtained from less than 500 meters of distance obtained from a secure source.

2.1.3 National Food Security and Nutrition Strategy

The development goal of the National Food Security and Nutrition Strategy is to sustain improvement in household food security. Specifically the NFSNS objects:

- to improve agricultural productivity and use of natural resources;
- to improve access to and participation in markets;
- to improve nutrition status of mother and children;
- to improve on-farm storage and increase knowledge on prevention of HIV/AIDS.

Current interventions on food security tend to focus on poor households in rural areas through improvement the availability and access to utilization of food at provincial, household and individual levels. These objectives will be accomplishing through improvements in the agricultural productivity (while maintaining and enhancing the natural resources base) and improved household nutrition levels with concentration on women and children in more food security regions.

The NFSNS is focusing on 5 major strategic actions, namely food availability, access, utilization, monitoring and evaluation and monetization of commodities. These actions are implemented through collaboration with NGOs and other governmental sectors and community groups.

- The first strategic action aimed to increase food availability primarily through increased agricultural production and productivity by improving access to seeds of improved crop varieties and to other economic viable, while promoting also environmental sustainability agricultural practices and inputs.
- Increase access to food will be enhanced when rural families have access to additional sources of income with which to purchase food. It is envisage that households will be able to retain more of their income if the cost of food production and processing are reduced.

- To ensure the utilization of food benefits through the improved quantity and quality of food production will be capitalized within the households to meet basic nutrition levels. Under this strategy health household will have a greater labor force to work in their fields and participate in off-farm activities and be able to make grates investments in their activities through reduced health expenses.

2.2. Land and Water Reform in Mozambique

2.2.1. Land Reform

In the late 1990's, after the first democratic elections in 1994, the Mozambican government under the pressure of civil society and national and international organization drew up a new National Land Law and Policy. One of the main objectives of the law was to recognize peasant land rights to local communities, also referred on its regulations (1998) and the Technical Annex (1999) on forms how to make land delimitation. The new legislation maintains that all land belongs to the State, but seeks to protect peasant land rights through the recognition of occupation rights to the land. These regulation objects to recognized local land users since they are the ones who have protecting the land and other resources from degradation and that the land which they have historically use and occupied constitute the basis for their livelihood. Therefore community channel for land market may be established with the community rights since they have the right to acquire a collective title for using and benefiting from the land.

2.2.2 Implanted system for Land Rights

There are in Mozambique two systems from which someone can gain access to land and water, namely the statutory and customary laws. The land law and its regulations that regulate the rights and access to land and other natural resources recognized both forms of rights and use of natural resources. In general private sectors use the statutory system to gain access and rights to land and the family sector exploits the customary law. Although past laws since the colonial period through out the period after the independence tend to favor the statutory, the New Land Law (1997) attributes large importance to the customary law (community tenure rights).

2.2.2.1 The customary law

Mozambique is dominated by many customary tenure regimes based on traditional procedures, geographical contexts and cultural histories. These customary tenure systems are molded by different socio-economic and political processes occurred since the pre-colonial and the colonial Portuguese penetration in Mozambique to the post-independence period. According to Kloeck-Jenson 1998, the rules and norms guiding access, use control over land use, within the customary tenure system, is usually associated with a person's membership status in social groups. In general, in Mozambique the customary system is divided by two systems, patrilineal and matrilineal kinship principles although it is believed that there is some variations of these systems according to the socio-organization of the local community, cultural group

and geographical position, population density, kinship organizations, inheritance patterns, land quality, markets, and historical experience.

The matrilineal system most practices in the northern part of the country, area most occupied by the Ajaua and Makua tribes, is very often associated to the agrarian societies living in small and large scale settlements, in which the allocation of land and natural resources is determined by matrilineal rule. In general, it can be stated that the matrilineal system can be applied to succession and, or inheritance through the female line, in which a woman inherit from their mothers or maternal uncles transmit the family properties to their nephews (sister's son). The patrilineal systems are mostly practice in the central and southern part of the country is more associated in the southern with the raising of livestock, expansive grazing lands and irrigation areas. While in the central part it is associated with Nguni Empire that occupied the south of the Zambezi River in the nineteenth century (Meyers 1995). This system refers to succession and or inheritance through the male line, in general from father to his son or other descendants. Generally, women do not inherit land since, according to local perceptions; a woman should leave the family land when she marries. She will then have the right of access to her husband's land, though in the case of divorce she would lose that right.

Land held by a customary system is often held by a group, community lineage or clan, family or individuals. In many cases when land is held by a community, families and individuals have a great deal of control over their resources and are responsible for day-to-day management. In many cases private rights exist and many types of land and resources transactions take place daily among community members. In general landholders may also sell or lease other rights while not selling land itself, such as rights of tree, animals, plants and other natural resources (Whithwater, 2001).

In sum, it appears that customary tenure norms still operate widely in Mozambique. According to these norms, men have privileged access to and control over land, through inheritance. They have greater security of land tenure, at household level. Customary norms are changing, however, through increasing pressure on the land, land conflict and the emergence of a land market. The capacity to access new and fertile land is increasingly linked to the ability to pay and to mobility. In both these respects, it would further seem that men are advantaged, relative to women.

2.2.2.2. Statutory Law

The constitution of 1979 states and the 1990 all land and other natural resources located in land and other natural resources located in the soil and subsoil, in territorial waters and on Mozambique continental shelf are owned by the state. The state shall decide the conditions for their use and exploitation. Thus all land rights are secondary to the state's primacy. The laws prohibit the marketing of land by sale, rent, mortgage or other types of alienation. However the law allows the selling of the infrastructures and the state to confiscate land for improper use or for public domain. In the case of wildlife this state ownership pattern aspects raises problems for game farming and ranching, for private reserves, and for community based wildlife and forest management.

The Land Law Regulations promulgated in 1987 specify how the land law should be implemented, including the competence's of different levels of the government over the administration. For In the new land law (1997) the provincial governor grants titles to areas from 0-1000 ha, the Ministry of Agriculture to areas between 1000-10,000 ha, while the council of Ministries to areas above 10,000 ha.

According to Meyers et al (1997) these laws tended to centralize and to allocate greater control over the natural resources in the hands of the state, particularly the central government. As a result these laws failed to recognize the administrative power that existed in the local communities. However in the new Land Law the communities are now supposed to be consulted prior to approving a concession and title) request within their territory and that they participate in the resolutions of land and resource conflicts with these private interests. The law also requires that the Land Commission develop legislation that define the mechanisms to identifying representative of local communities. Another important feature of the law is that the customary systems are recognized for conflict resolution.

Furthermore, the land law recognizes that a land use rights may be acquired by the nationals" occupation in good faith" of a piece of land considered as free, and as long as they have been using the land for more than 10 years; it also says that the absence of a title does not preclude the recognition of a land use rights, especially in relation to local communities. This is based on the basic principles of new vision of the management of natural resources in which encompasses an equitable and sustainable use of the natural resources by all sectors with objective of supplying equal opportunities of access by local communities to land, while adopting appropriate practices to conserve and preserve its natural resources.

For private investors the regulation stipulated that security of tenure for private investors (non-family or non-communities) is guaranteed by a registration title, and that security of tenure for the family sector and communities is guaranteed by occupation. In this regulation, private individuals approach the state directly for assistance in identifying "free or available" land. The law requires that a private sector interests register the holding, acquire a title and pay a land tax.

Right of land us and benefit is aright that individual or corporate persons (be they national or foreign) and local communities acquire in respect of land, subject to the demand and limitations of the land legislation. Man and woman may be holders of the righto land use and benefit. By making the right of individual persons (men and women) explicit and clear, the legislator wished to stress that the right can be held by women independently of male guardianship. This flows from the principle of equality provided for in articles 66 and 67 of the Constitution of the Republic.

2.2.3. Water Rights

The water sector in Mozambique is under process of transformation, from a controlled and centralized management system to a decentralized system with large participation

of the private sector and communities. People are begun to give an economic value to water resources. Under the National Water Policy, advocates the need to make water available to all population. The sector policy also advocates that water management should be decentralized to local level autonomy, but under certain regulations to ensure public safety controlled by the provincial government. Some projects have emerged to improve water availability and distribution around the country. These projects are supported in general by NGOs under the umbrella of the National Water Policy.

The program also envisages management by a private company, since it seeks of the need to fix social tariffs. Privatization the management of water supply includes establishing a monthly charge for consumption which covers the costs of producing and managing the service. The study of the beneficiaries' capacity which should also indicate thir ability to contribute to the rehabilitation of the internal water services has still not been undertaken in some other areas the source chosen by women is that which costs the least, the well and the standpipe. Thus there prevails the payment capacity in the event that this is the desired source. Women have no autonomy to decide on the installation of the taps nor on monthly payments, but private management has no interest in supplying alternative sources as standpipes which do not generate the same profit as the private tap. Women will have to live with this situation, and use their efforts to remedy the feeble capacity of the current model to solve the problem. They will have to go on buying from their neighborhoods tap every day the water their need to drink and to walk for long distances seeking water for their domestics uses, often from contaminated sources.

Water was never controlled and no payment was ever made for its use. It was always regarded as sacred resources and hence could not be alienated. The opening of wells was the task of the women who mobilized among themselves, and men in most cases joined the women for this task, which was not preceded by any ceremony. No attempt to prohibit access to water was permitted during the dry season (Lopes et al 1995).

The rivers and the mountains were sacred places and one could not go there in any old way if anyone broke the rule he would fall ill or some misfortune would happen to him. In these places, ceremonies were held to solve problems facing the regulado, such as water shortages, pests or epidemics (Lopes et al 1995).

3. Land and Water: two corner stones in Mozambique

In Mozambique, land is mostly used for agriculture production. The agriculture is the most important component of the National Revenue. It absorbs 84% of the active population, contributes with 40% for the gross domestic product (GDP), and about 60% of the exports (DEA, 1997). Agriculture is in fact the engine to reach food security, to reduce poverty and, therefore, a crucial basis for sustainable management of natural resources. The actual cultivated area in the country is around 5.000.000 ha out of a total of nearly 80 million ha. Main producers are the small farmers, cultivating about 95% of the total cropped area, the majority practising rainfed agriculture, mainly for subsistence and with low level of inputs. The availability of land and water is thus central to development, food security, and poverty reduction. As the biggest user of water, often at

highly subsidised rates, attention is focussed on irrigation to improve water use efficiency levels that are generally low.

About 500 000 ha of un-utilized and under-utilized land suffer from problems of waterlogging and impeded drainage (peat soils and hydromorphic soils) and could be put to better agricultural use with adequate reclamation measures and better water management practices. A considerable part of the land area that is semi-arid (80%) or arid (2%) might also be brought under cultivation, provided supplementary irrigation sources to be developed.

3.1. Water for Irrigation

Irrigation increases cropping intensity and contributes to expansion in cropped areas. It increases yields, stabilizes output, enables crop diversification, reduces risk and increases farm incomes and employment. Through its influence on agricultural incomes, irrigation has a multiplier effect on non-farm incomes. It contributes to food security and poverty alleviation. By improving agricultural productivity, irrigation contributes significantly to overall growth and development. Irrigation reduces the risk of crop losses from uncertain rainfall and enables production in areas or at times without rainfall. However diverse, irrigation systems provide water to enable farmers increase output per hectare. There are strong synergies between irrigation and other principal sources of agricultural growth such as fertilizer, improved plant varieties, better husbandry, up graded infrastructure and better integration into markets. These encourage farmers to invest in land improvements and in other inputs.

In 1968, the irrigated area in Mozambique totaled 65,000 ha with Maputo and Gaza Province, in the South, concentrating about 72% of the irrigated areas. The expansion of the irrigation sector since 1968 occurred mainly with the implementation of major sugar cane schemes and the Chokwé scheme, which was actually initiated before 1968. Estimates from 1973 indicated a total irrigated area around 100,000 ha with Maputo and Gaza Provinces occupying the majority of the irrigated areas (Mello e Marques, 1973).

Inventories carried out in 1986 and 1987, indicated a total developed area for irrigation² around 120 000 ha, from which approximately 42,000 ha were fully operative at that time (Mihaljovich and Gomes, 1986; Sogreha, 1987). From these 42,000 ha, 67% were located in the Limpopo, Incomati, and Umbeluzi rivers, 25% in the Buzi, Pungoé and Zambeze river basins, and the remaining 8% were distributed among the other river basins.

More detailed studies, including water resources and environmental impact assessment, can probably show more conservative figures. In the Zambezi river basin, for example, early studies identified irrigation potential around 1,500,000 ha (HP, 1965). More recent studies (Burep, 1980), indicated that highly suitable soils for irrigation are around 1,000,000 ha, but from this only 200,000 ha do not require the elevation of water more

² Total developed area for irrigation should be understood as areas with infrastructure and which can still be irrigated with reference to past practice.

than 10-20 m. These areas were suggested as the most recommended for a short-term irrigation development. Mention should be made to the existing conservation and protected areas in the right bank of the Zambezi River, which can further limit the implementation of these irrigation projects.

Previous reports, referring FAO estimates in 1983, indicate a potential of 3.3 million hectares of land suitable for irrigation throughout the country (UNESCO - DNA, 1984). This estimation constituted a first approximation mainly based on reconnaissance studies, most of them carried out before 1975. When these estimates were updated with more recent and detailed information the country potential for irrigation was reduced to about 2.7 million of ha of irrigable lands³ (Consultec, 1998). From this potential, more than 50% are located in the Zambezi river basin in the center of Mozambique. The Umbeluzi, Incomati, Limpopo, Buzi and Pungoé river basins in the South and Central parts of the country, where a Master Plan for irrigation development was elaborated, cover about 15% of the total country irrigable area (Gomes et al., 1999).

Estimates made by the National Irrigation Development Master Plan in 1993, indicate that in the Umbeluzi river basin, even with all the hydraulic structures in place, the availability of water will not be enough to cover all the soil potential for irrigation (only 8,100 ha out of 21,000 ha can effectively be irrigated). The Incomati and Limpopo river basin can easily reach their land potential for irrigation, but only if major hydraulic structures are put in place (Moamba and Mapai dams, Chuali dike).

Irrigation is fundamental to agricultural intensification. Irrigated agriculture practised on 20% of all arable land accounts for 40% of all crop production and almost 60% of cereal production in developing countries. In coming decades an estimated 80% of the growth in crop production will come from intensification largely enabled by irrigation. Seventy percent of the increase in cereal production expected by 2030 will be attributable to irrigation. As rainfed agriculture lacks the potential to replace irrigated agriculture in any significant way, there is no major alternative to irrigation in the challenge to meet future growing food and other agricultural needs in developing countries.

The biggest irrigation schemes are the Chokwé (Limpopo river basin) and the sugar cane plantations (Incomati, Buzi, Pungoé, and Zambeze river basin). Chokwé is the most important irrigated area in the country with 25,000 ha equipped for irrigation, representing 21% of the total developed area. Sugar cane schemes account for 29% (34,250 ha) of the country developed area for irrigation. Recent estimates indicate that the actual irrigated area is around 35,000 ha (Consultec, 1998).

The decrease in the total irrigated area can be attributed to several factors, such as:

- Lack of credits, high costly inputs and scarce technical assistance in the rural areas caused by the fragile economic situation of the country,

³ Irrigable lands should be understood as areas that, with the present knowledge concerning land and water resources, are feasible to be irrigated in a near the future.

- Escalating construction costs together with a decline in public expenditures for irrigation,
- Low flows of some international rivers during the dry season causing shortage of water and allowing saline intrusion and decreasing the water quality for irrigation and,
- Poor water management and lack of maintenance of the irrigation schemes, which results in inefficient structures and, in some areas, the consequent increase of the soil salinity and sodicity.

From these examples, it can be drawn that Mozambique is endowed with soil potential for irrigation, which considerably exceeds the area that can currently be exploited, considering the availability of water resources, the implementation capacity of major hydraulic structures, and the actual land use. The scarcity of water resources for irrigation is more severe in the southern basins, where semi-arid climatic conditions and international river flows add to urban and industrial requirements, causing an enormous stress in the riverine ecosystem.

Assuming that such irrigation potential of the country will be brought under development at medium and long terms, and a significant part of it on soils that may present drainage (imperfectly to poorly drained soils), secondary salinization, occasional, irregular flooding or inundation problems, proposed irrigation development has to be based on sound scientific considerations, in order to prevent soils from major hazards.

To find short and medium term solutions to the problems of soil and water management and to provide scientific support to development programs on small-scale irrigation in the country, there is an urgent need to establish a research agenda to address irrigation and water management problems at farmer level. Such research agenda will consider various aspects of adaptive research, establishment of demonstration plots and seed multiplication within the improved agricultural technologies for increase crop production; soil and water management for improving the efficiency of on-farm water management in order to ensure increased crop productivity; generation water management technology for transfer to the users; to coordinate and guide research activities of different irrigation areas on irrigation and drainage; training farmers, scientific and technical staff in water management; and improving a data bank of available information on soil and water management in the country.

There are now technical, economic, social and environmental solutions to most of the problems caused by irrigation. Thus, if projects adhere to sound investment design and implementation guidelines, irrigation can be an environmental asset. As irrigation is a major water user, improvements in the current low level of water use efficiency will release large volumes for expansion, and use by other sectors. Technological, operational and managerial techniques are improving efficiency levels. The application of the principles of irrigator participation, financial autonomy, and privatization will enhance the viability of future investments in new or existing schemes.

Contrary to a widely held view, returns on investments in irrigation are generally comparable to alternative investments. Moreover, most analyses fail to take the positive indirect social and environmental effects of irrigation fully into account. Future investments in irrigation will be mainly for rehabilitation and upgrading. Such incremental investment will benefit from the large amount of sunk costs in existing schemes thereby enabling higher rates of return. A clear indication that irrigation yields adequate returns is the considerable amount of private investment it attracts world wide (see private investment).

4. Gender aspects of Land and Water Use and the impact on Food Security

There is a large diversity of ways women and men can get access to land and water resources. Inheritance, requests, grabbing, buying and borrow are the most common ways from which local people can get access to land and water. These forms are guaranteed based on customary system. The family sector can have land and water security through one of those forms as long as it is know by the community.

It is important to state from the onset that all the farmers in the most of rural areas have land and can access to water. This includes single women, unmarried men, and women living under a polygamy system and boys. Some families have divided land between husband and wife. The husband's land produces for sale and the wife's for consumption. This situation is not however universal. This is strictly a family decision on which the local structure has no influence. In some cases access to land and water has been allowed to people who are not resident. The family sector can have land and water security through one of those forms as long as it is known by the community.

4.1. Gender aspects of Land Access and Utilization

A number of studies have been carried out in many parts of the country to establish existing tenure systems and ascertain the access rights pertaining to the tenure systems. According to the New Land Law (1997), in Mozambique all land and water resources belongs to the state, but two broad tenure systems exist: traditional and modern. Land in the peasant sector is generally managed according to customary land tenure norms, where individual membership of the community gives that person the right to use community land, with the local leaders' knowledge. Land tenure security is acquired through community membership, which may be strengthened by planting trees on the land.

The most common channel for the transmission of lands is via inheritance. In general the amount of land rural people use ('own' under traditional rules) depends on the type of crops they produce, the amount of household labour, the type of production systems, the micro-climate variation and pressure for fertile lands.

Given a general shortage of labour power in the peasant sector, capacity to use the land is one of the key determinants of landholding, at household level. However, the increasing land shortage in the area has meant a tendency to parcel out family land ever more frequently, creating constraints on the ability to practice fallowing or crop rotation.

Despite this pressure, not a single, official request has been made by local peasant farmers, for the Government to title their land. All requests for land have been made informally, via the traditional authorities, and principally through the regulo.

Most peasant households in the area cultivate two or more fields, situated slightly distant from each other to take advantage of different soil types and precipitation. Normally, a husband and wife / wives have their own, separate fields.

a) Inheritance

This is the most common system for local people to have access to land under customary systems is the inheritance. Under this system man or woman get access to land from his ancestors under patrilineal or matrilineal system, respectively. According to Shumba et al (1996) the individuals (men and women) from the area and with common ancestors can inherit a number of rights over the land and the natural resource from this traditional system. In general this process is respected by all members of the community and ruled by traditional leaders. Local families tend to occupy large area in order to their descending to have access to land under this process.

b) Request

After the identification of unoccupied portion of a land and in some cases land not reclaimed, the individuals both man and woman not residents in one area can contact the leadership of a community to occupy that portion of land. After that the leadership has to verify if that portion of land is occupied. If not they can allocate the land to the person who request it. This process is done by the authority of the area, traditional or official or both. In general traditional leaders are suspicious when is a single women requests a piece of land, in particular under the patrilineal system, since women can only have access to land through her husband or her male relatives.

c) Land grabbing

Some people can get access to land by just grabbing by building a house or by cultivating a portion of land in the area without informing the local authorities. This process occurred particularly after the civil war. However these people are not security in the land because they are part of the community. In general are male who are doing these acts.

d) Buying

In some area when a person wants to use a portion of a land or a resource in the land, particularly for a person (woman and man) living in the urban areas who wants to use a resource in the area he can buy to a local community. In this case the owner and the user establish a price in some time without the knowledge of community leaders and the occupation occurs after the agreement be reached. These types of agreements are very secret because they are not allowed by law. Usually who sells that are young people who want to get some money to move to urban areas.

e) Borrowing

Some families can get access to land by borrowing based on the family relations and friendship or by a third person. This type of access to land occurs within a family or a lineage and does not request an intervention of the community leaders. These who can allocate land using this system are elder people, divorced women or widows who can not use the resource and by humanity reasons and they allocate their land to some relatives or friends who are able to use it. In another cases a person can be allocated because the owner moves to other areas for long periods.

4.1. Gender aspects of Water Access and utilization

Water was never controlled and payment was ever made for its use. It was always regarded as sacred resources, and hence could not be alienated. The opening of wells was the task of the women who mobilized among themselves, but, in some regions or in dry years, men joined the women for this task, which was not preceded by any ceremony. No attempt to prohibit access to water was permitted, particularly during the dry season" (Lopwa wt al 1995).

"The rivers and the mountains were sacred places, and one could not go there in any old way if anyone broke the rule he would fall ill or some misfortune would happen to him". In these places ceremonies were held to solve problems facing the regulado, such as water shortages, pests or epidemics.

As stressed in this report the irregular distribution of water sources in the neighbourhoods, and even within a neighbourhood, which reduced the usefull time available to a household, since the sources are often a long way away. It is thought that this problem" affects women most, including girls of scholl age, because they have the task of fetching water". Because of the distances, during the rainy season these families use contaminated pools as alternative sources, which leads to the high rate of diarrhea. The interviews carried out by Macamo (1997) confirm this situation: We suffer in fetching water. We take it from the river. It takes two hours to fetch waster. What we find valuable is that now it's the rainy season, and we use the pools of water that are formed. In the dry season we spend more time.

Normally women with the help of their daughters, fetch water two to four times a day to drink and cook and for their husband's bath. The women and the children wash clothes and bath in the river.

In study in which 133 and 72 men took part, 91% of the women and 74% of the men expressed willingness to pay of a standpipe. Women are also in the majority then when it comes to preferring free water from the rivers: 21% as against only 6% of the men opted for its resource. In deciding to pay for a tap in their own yard, even if it may be more expensive than the standpipe, 72% of the men accepted ad only 42% f the women agreed. Since there are few brick houses, and few home owners who would make the investment, the preference for domestic connections is low: 18% of men and 2% of women. The reason for woman lack of autonomy is taking decisions on matters concerned with investments or monthly payments is often due to the fact that they do not know how much their husbands earn (Ross 1997)

5. The Case Study: Gender Mainstreaming of the Land and Water of Namialo, Meconta District, Nampula Province

5.1. Location and Demographic Characteristics

The estimated population of Meconta District was 108,248 in 1993, subdivided into approximately 25,290 families, occupying an area of 3,733 square kilometers (INE 1997). Although the density of the population varied within the district, it had an average of 29 people per square km. Of this population, 48.91% (52, 934) were men and 51.09% (55,320) were women (INE 1997).

According to the 1997 population census (INE1997), that set the minimum working age at 12 years, approximately 95% of the population in Meconta District work in agriculture (Table 1) and 2.4% work in industry (mostly cotton and seed factories). Tique (2001) divided the farmers in the area into five groups based on their farming characteristics: 52% of the population is considered as being made up of individual farmers, who work by themselves without hiring labor. Of the 52%, almost two thirds are female. Most of these farmers have 1 to 3 ha of land and are classified as being in the family sector. Thirty nine percent of the farmers use hired labor and possess 3-5 hectares of land. These are also classified as belonging to the family sector group. Approximately 6.5% (3% were female, although this number can vary over the year especially

Table 1. Characteristics of employment of the active population in Meconta district

| AREA | % |
|----------------|------|
| Agriculture | 94.5 |
| Industry | 2.4 |
| Commercial | 1.0 |
| Communications | 0.6 |
| Construction | 0.2 |
| Education | 0.4 |
| Health | 0.1 |
| Others | 0.8 |

Source: TIA [Agricultural Census] 2002.

during the harvest period when more women are hired as laborers) worked as hired laborers on parastatal farms, mainly Namialo Cotton Development Society (SODAN) and Mozambique Seeds Company (SEMOC). Private farms with titles for land exploration and occupation constitute 0.9% (2% were female). Currently this group is much larger due to the inclusion of "small private farmers," a group of farmers with 10 or more hectares, but with no land titles. Finally, 2% worked on cooperative farms (67% were female). Currently this group has organized itself into a farmers' association.

Meconta District is subdivided into four administrative posts: Meconta center, 7th of April, Corrane, and Namialo (Map 2). The distribution of population within the district of Meconta is greatly influenced by the location of the central villages, companies, historical land ownership, availability of water and land, presence of market and other economic and social infrastructures. According to INPF (1985) only 0.9% of all the families have access to electricity, 1.9% to water in their own houses, 1% have brick houses and 70% have latrines, in Meconta. Also, in this district patients are attended by only one doctor and three nurses. However, a Catholic church (St. Filomena's) is located in the area and the resident nuns have historically given medical assistance to the local population.

According to INE (1997), Meconta also has 78 small stores, the majority of them owned by people originally from south Asia, mainly India. This group is increasing its economic importance in the area and has been serving 1,071 people per store. Their economic importance results from the commercialization of food crops. Furthermore, their participation in the commercialization of cash crops is increasing with the government's effort to promote cotton cultivation. This group is located mostly in Namialo.

The total population of Namialo, registered in 1999 at the local administrative post, was estimated to be 36,874 people. This was approximately 30% of the total population of the district of Meconta. Economically Namialo is the center of the district and the population in the area is concentrated there. It is economically important because it is the home of the most important commercial farming companies (SODAN, João Ferreira dos Santos (JFS) and SEMOC). There are also some other factors that account for its importance. For example, during the civil war (1976-1992), Namialo was a secure place and people migrated there. It is also close to transport: a railroad and a provincial road which connect most of the districts (including Nampula and Pemba, the provincial capitals of Nampula and Cabo Delgado, respectively, to Nacala port, the third biggest port of the country) pass through this district.

Namialo is subdivided into four localities: Mecua/Napacal, Namialo center, Eduardo Mondlane and the 25th of September. Most of the population of Namialo, approximately 90%, practice agriculture (Personal Interview with Paulo Sabado 1995). According to data collected from interviews with the Agricultural District Director of Meconta and with the Director of SODAN (1995), the family sector occupies approximately 2,000 hectares under the control of SODAN, 300 hectares are occupied by small private farmers (with 10 or more hectares), 723 hectares are occupied by private farmers (farmers with land titles), approximately 700 hectares are occupied by the SODAN farms and approximately 125 hectares belong to SEMOC.

5.2. Human Settlement: gender, age, marital, administrative structures

Namialo is mainly occupied by the Makua, a Bantu ethnic group that has been living in the area for centuries (Martinez 1989). Within this group, the allocation of land and political power is determined by matrilineal rule, where the maternal uncle is the leader of a lineage group, called *Nihimo* under the subordination of a *mwene*, a village head

(Coissoró 1966). However, according to Martinez (1989) the person who really controls the village community is a woman called the *Pyamwene* (the sister of *mwene*), the older sister of the village head. In general, she does not control the area, but she functions as a counselor for the head, and consequently she makes most of the decisions.

As mentioned earlier the *Makuas* have a matrilineal system where the mother takes care of the education of the children and the other domestic activities of the household. She is also responsible for overseeing the collection of firewood and water, and the production and selling of local beer. The division of labor by gender under the *Makuas* tradition is characterized by a woman having responsibility for all farming activities, which include land preparation, crop selection, seeding, weeding and harvesting (Machado 1968). The father of the family is responsible for building the house, repairing tools, cutting trees, opening new farm areas for shifting cultivation and hunting (mainly wild rats). When the Portuguese government introduced forced labor, in which local people were forced to work on railroad and road construction, it changed the division of labor within the household (Chilundo 1995). Under the new system, women became responsible for all household activities, including the cultivation of cash crops and work on plantations, while their male counterparts were working on road, rail and bridge construction.

Preferred marriages were among first cousins (the son and daughter of a brother and sister), but marriage was forbidden between cousins who were the son and daughter of two brothers, or of two sisters (Medeiros 1985 and Machado 1970). This results from the fact the cousins who were the son and daughter of a brother and sister were not considered as blood relatives, but as kin, that is as individuals who could be married, since they belonged by birth to different halves. Parallel cousins those who born of two brothers or two sisters are regarded as blood relations.

In general the preference for the multilateral version of the marriage between first cousins is firstly a expression of the struggle between lineages for control over land, labor, descent etc., and reflect the movement towards differentiated control over production and reproduction by hierarchical groups of descents (Oliveira 1987/88).

Another noteworthy feature of the *Makua* population is the number of divorces that occur. This number is very high when compared to other ethnic groups in Nampula and in Mozambique in general. According to Martinez (1989), the reason behind these divorces is the fact that the first marriages are not considered important among *Makua* families. Most of these marriages occur essentially due to the necessity to give adult status to sons and daughters. Machado (1968) suggests that these divorces also result from the fact that there is no exchange of goods between the man's family and the woman's family. This happens because the man moves to his wife's family home without gaining control over any resource in the area.

In the *Namialo*, the dominant clan is *Lucasse* headed by Chief *Cavala*. This traditional chief, was also recognized by his strong resistance against the Portuguese penetration of the area early in the 1900's. Chief *Cavala* is the head of all *mwenes*, including the *mwene Piteria* (who belongs to a *Mulima* clan) and *mwene Nahoco* in *Namialo*, and both *mwene*

Macala, and *mwene* Nacoma in the Meconta District. With the Portuguese penetration in the area in the middle 1920s, new “quasi traditional authorities” were created to work parallel or to substitute the traditional authorities in promoting and convincing the local population to implement colonial policies. These “quasi traditional authorities” were constituted by *regulos*, *cabos* and *captains*. According to the *regulo* Netia:

The Portuguese came to the area and promised them salt and clothes in exchange for power. After two years they brought these products that they had promised and gave them to his uncle to distribute to the population. The salt they brought was extracted in Nacala. Although my uncle did not like the Portuguese, he recommended to the population to cooperate with them. First the Portuguese installed a post in Mussimate close to the Monapo river, near Netia, then they moved here to Netia, and later my uncle was proclaimed *regulo* Netia. (Personal interview with Emilio Bassiano 1995).

Regulos became the dominant authorities in most areas during the colonial period, particularly after the introduction of compulsory cotton cultivation. In many areas they substituted *mwenes* when it came to land distribution and collecting taxes. They also worked directly with the foreman during the compulsory cotton cultivation era to assure local population participation (Fortuna 1993).

5.3 Access to Land in Namialo

Economically the Makua depend on farming, hunting, fishing and the collection of forest products (Martinez 1989). Farming is the most important practice of the Makuas, who use their farm products to feed themselves, to exchange for other products and/or to sell in the markets. The most common farming practices used by Makuas are rotation, intercropping and shifting cultivation which are used with millet, sorghum, and wild beans. These were the main crops before the colonial occupancy. When the colonial system penetrated Nampula province in the middle 1920's, cassava and peanuts were introduced and became two of the most important crops produced in the area (Machado 1968).

Under the Makua customary system, land is the common property of the community (Walter 1988). All the lands used by individuals of a determined lineage belong to the lineage as a whole and are controlled by *regulo*. Whenever a user wants to shift from one farm area to a new one, the user has to communicate the decision to the *mwene* or *regulo* especially after the Portuguese arrived, to avoid the possibility of encroachment on somebody else's land. However, the *mwene/regulo* does not have the power to refuse a parcel of land that has not been in use, to any one who requests it.

Within this ownership pattern, all land for farming, forestry, hunting and fishing belongs to the community. The Makua customary system does not allow for individual land and water ownership, although it recognizes the user of a parcel of land as its occupant, with the rights to use, reallocate and loan the land. According to Coissoró (1966) within this Makua system, an individual has absolute rights to use a particular

piece of land until she/he decides to abandon or transfer it to someone else. However, during that period the community respects her/his family's rights to use the land. Only, in cases where the owner is absent for long periods or she/he has moved to another village and does not expect to come back, she/he can lose her/his right to use the land. Exceptions to this rule occur when the owner is expelled from the village having given religious offense, or does not reclaim her/his land after it has been taken by someone else.

In the Makua communities, land used by a certain family belongs to the mother and she has the responsibility to transfer the land to her daughters. Only a mother of the same lineage has the authority to pass the land on to her daughters. In the absence of daughters, the land is transferred to her nephews or nieces or it goes to her brothers, but never to her husband or his relatives.

This matrilineal system of land transfer has changed in some areas. In fact, attempts to change this matrilineal rule dates from pre-colonial period when men used the inability of women to pay taxes, to control the most important resources (e.g., land and trees) and goods (e.g., salt and cloths). According to Chilundo (1995), during these periods women were confined to household activities, while their men were working at sisal plantations or at railroad constructions. As a result women were dependent on their men's income to fulfill their tax obligations. Women who failed to pay their taxes were also subjected to forced labor. Thus women sought protection from their husbands. Abuses occurred between men and women as women became more dependent on men. Being outsiders and deprived of resources (e.g., land and cashew trees), men used the inability of their women to pay taxes to gain control over the land. Men gained benefits from access to the resources and they also became the head of their household. Chilundo (1996) further explains how men, in some cases, were also able to expel their mothers-in-law and other relatives from their land and transfer the rights to use it to their relatives.

Realizing that they were losing power, women became market oriented. Although they continued having control of their household activities, they changed from producing food crops to cash crops. They also, in some cases, moved to work in plantations in order to get cash to pay their taxes. With the introduction of compulsory cotton cultivation, in which both women and men were later required to pay their taxes through discounts on cotton sales (Isaacman 1996), women regained their control over their land.

With independence in 1975, the Frelimo government nationalized all land in the country. Customary systems were undermined and the government authorities had the right to allocate, alienate and redistribute the land. With the government adoption of socialist policies, communal villages were established, and agricultural production was organized into cooperatives and state farms (Bowen 1992). Under these policies people were displaced from their original areas and forced to move to communal villages. In these communal villages, besides a collective farm, people were given new parcels of land to cultivate food crops. These parcels were given to men, whom at the time, were considered the head of the households by the newly nominated officials at the communal villages (Personal interview with Temueleque 1995).

Most of the land that previously belonged to a certain lineage group, was transferred to the community. In the 1980's a civil war also displaced many people from their areas to places considered safe (e.g., Namialo). Competition for land in these areas arose and men increased their control over the land. This competition was exacerbated in 1986, when the provincial government forced local people to settle close to the main roads, where they were required to cultivate cotton. After 1992, with the peace accord, some people returned to their original areas, but others, particularly men, retained control of the areas acquired during the communal villages. Also the increased flux of private groups and returned colonial land owners who acquired titles at the DDADR to explore large parcels of land, often without local permission, increased land competition in the area. These groups, supported by the government and the World Bank, which are rebuilding cotton production, moved to the area in large numbers.

Competition for land increased and most local farmers with more than 10 hectares were converted to semi-commercial farmers. Although this group of local farmers was protected by the SODAN, they organized themselves into a local farmers association to acquire official land titles. However, other smallholders who did not join an association still have no land titles since. The land law of 1979, still in effect, does not allow titles for land exploitation to be attributed to farmers with less than 10 hectares. Although a National Land Law is under revision, many smallholder farmers have lost their land in favor of private groups, while their customary systems have been overthrown. This issue is elaborated in Chapter V on the impact of post-Independence policies.

5.4 Access to Water in the Study Area

Namialo is located within the Monapo river watershed. The Monapo river has a length of 240 km occupying an area of 8,800 square km. Attempts to create an irrigation system failed in the area in 1981, when a dam was created to conserve water, although Risselada (2001) had suggested that the Monapo watershed could be a good source of water because of its favorable peak flow if a large dam was constructed. Furthermore, the FAO/UNDP report in 2001 suggests that Namialo is the most appropriate site for its construction. However, constructing a dam in Namialo is inappropriate for the needs of the area especially because farmers practice rainfed agriculture. The subsurface water is limited in the area due to the small quantities found. For example, the FAO/UNDP study (2001) found only a total discharge of 5 cubic meters per second. According to Hidrotecnica Portuguese (1980), 90% of the surface runoff of the Monapo river occurs between December and April, although there is a strong variation in certain years as a result of droughts.

Water is scarce resource and venerable and the competition is more pronounced. The concentration of water in the depressions on the watershed, which forms ponds and wetlands, can be a good source of water, especially for watering small fields. As I observed in the field, some farmers already use this water on their farms especially for watering horticulture. They transport the water in large cans from the ponds to their fields.

5.5 Production systems in Namialo

Cotton is the main crop produced in the area. Cotton is majority controlled by man. In general women participate in the cotton production during the field preparation, weeding and harvesting. Since man oversees cotton production, the main cash crop produced in the area, woman is dominant in the food crop production.

Cassava is the main food crop produced in the area and it has an advantage of considerable tolerance to different soil conditions. However, due to its root characteristics and compaction of the soils, resulting from cotton cultivation overtime, cassava is commonly planted in light textured soils (*Othako, Ikani and Holoku*) and *M'hiro*. According to farmers, the soil *Nipati* was not appropriate for cassava. Cassava takes between one and two years to be harvested, especially in dry conditions where it can remain in the ground without rotting, and recommence growth with the next rains.

Maize, one of the most important food crops in the province, in particular, was commonly found in small plots around the farmers houses or around termite mounds. However if there were good humid conditions, maize could be found in many plots, especially in the non-cotton farmers' plots. The most common soils where maize was produced were *Nipati and Kotokwa*. Since these soils have the highest water holding capacity, by cultivating maize, there was a gain per hour of labor under humid conditions, therefore non-cotton farmers had enough time to work as hired laborers on small private farm. To use their time efficiently, farmers cultivated less demanding crops such as millet, sorghum and maize. Although maize was not part of their tradition, in general, non-cotton farmers and some smallholder cotton farmers cultivated maize in parcels of 0.25 to 0.5 hectares or less in size. Maize was also cultivated in monocultural manner, since it was only farmed on very small plots. Small private farmers, in general, cultivated maize in scattered plots around their houses.

Other food crops produced in the area are beans, groundnuts, millet and sorghum. Horticulture are also produced as a second season crops and they are dominated by women.

5.6 Gender aspects of access to and control over, agricultural production and income

The majority of the population is totally dependent on agriculture production and income. This dependence varies according to community members, households and between woman and man. There are different forms of access and control over income in money and in agricultural products.

Role and responsibilities, attitudes of both men and women are taken into account both gender groups do not have the same access and control over resource of agricultural resources, work and benefits. There are differences between men and women interests even within the same household and how these interact and are expressed, differences based on age, marital status wealth.

Although gender roles change over time as a result of social, economic and technological changes in the study area (Namialo) women control the barns, and the responsibility to share out the household reserves. However, according to Staehelin 1997, it is the man who decides how much is to be sold and how much is kept in the barn for household consumption. Pitcher (1996) stresses the importance of women control over barns as an

activity they carry out in an autonomous fashion. Many of the women interviewed thought it entirely obvious that control over the barns is an should be their task, not because the men regard this work a inferior, but because the women would never allow the men to be responsible for controlling the household food.

Control over money income and the way decisions are taken over the use of income are not so clearly defined as control over agriculture produce. The fact that the man receives the money from the sale of produce does not means that the man looks after it, and the person who looks after it is nor necessarily the same as the one who decides alone on how it is to be used.

In general the man and the women are jointly responsible for protecting the money. Normally the man buries it or hides it, while the women prefer to carry it with them. One usual method is related to the fact that the woman to keep it in her belt made of piece of material, local called capulana.

5.7 The case of 25th of September Association in Namialo

The emergency of farmers association occurs in early 1990's as a new move replacing the cooperative system which was linked to the previous socialist regime. The farmers association is composed by a group of people with the same objective resulting from the fact that in many rural areas local people does not have means to solve their own problems, and then they get together to solve it as a group. This occurs in general for crop production and commercialization, access to credits and other inputs, price negotiations and most recently for land titling process. Although the associations are require to consult their own communities for land allocation, in general the community leaders are members of the association and in most cases this consultation process is not conduct in a proper manner as required by law.

The 25th of September is an association of Small and Medium Private Farmers (ASMPF) created in Namialo at the former communal village called 25th of September. It was a local response to protect the farmers from losing their land to private groups and to solve internal land conflicts. The first task of the association was to acquire the title for all land that their members were cultivating or would be cultivating in the near future (Tique 1996). Initially the ASMPF requested 350 hectares of land in the same place where the communal village 25th of September was located. In order to receive the title, the ASMPF had to pay for title fees (e.g., demarcation fees, criminal statutory fees and other procedural costs) on the basis of the previous land law 1989). This association was registered in September 1997, and they already have their own land titling acquired under the previous law (Title 1135/T/99).

Conflicts between the farmers association and community emerged in 1995, mainly between the pioneers (considered *de facto* leaders of the association), the local traditional authorities (cabos in this case) and women farmers who still inherited their land through the traditional system; continue to date (2002). The conflict between the association and the local traditional authorities resulted from the fact that the traditional authorities--who had rights to concede land to its community members and to solve land litigation

between its members--felt that the association was taking over their authority. The pioneer members of the association, all men had preferential access to land near the Namialo river, the national highway (EN8), for sing water for irrigation and close to the markets. Also, the areas acquired by the association belonged to the *Mugila regulado* (a traditional lineage group in the area) although some of the leaders of the association, including the president, do not belong to the same *regulado*, but they occupied large areas within the *regulado* (now divided into communities after the delimitation). Under these circumstances, the traditional authorities felt that their land was being grabbed by outsiders, without any transactions or compensation to the community. This community had already been delimited in 2000 and the area titled by the farmers association are also included within community's areas.

The second point of disagreement, in 2001, arose from the fact that each member of the ASMPF was required to pay for the amount of land he/she would occupy in the association. This was because the *cabos and regulos* and other traditional authorities had to pay for the land they occupied acquired through their rights in the local traditional systems. Thus farmers, mainly women who inherited land from their parents, had to pay for it. For example Maria Mwassarapi recounted:

The association leaders, mainly Manuel Nachico (who calls himself President of the association) asked me to pay initially 50,000.00 Mt (\$2.00 dollars) in 2004 and now he has increased it to 100,000.00 Mt. (\$4.00 dollars) for this land that always belonged to my parents. They did not ask me to incorporate my land in their association. It is not right (Personal interview with Mwassarapi 1995).

However, according to the president of the ASMPF, they requested payment for land occupation in order to pay the government for the land title (Interviewed with Manuel Nachico by Cesar Tique in 2004).

A new conflict is appearing most recently (2001-2) between a Portuguese citizen who lives in Namialo, who request approximately 1500 hectares located near the 25th September community. The ASMPF decided also to increase their area to 700 ha since their membership has already increased (from 75 to 120). Part of these areas is overlapping with the area requested by the private farmer, since the area is also located outside of the initial *cabos*'s area. While during the negotiation process with local communities, the consultation process, local leaders (*regulos*) agreed to concede the area to a private individual, in exchange for employment on his farm and in inputs for cotton cultivation. According to the local leaders (*regulos*) their preference for private individual results from the previous conflict with the farmers association, and by the fact that the ASMPF never attempt to solve the dispute with them and now they don't want to negotiate with them for the new having access to the new area.

Another reason is the fact that members of the ASMPF are separating themselves from the community since they are able to negotiate their own cotton prices better than the

rest of the community, within the association forum⁴. They now are bargaining for low producer prices with other members of the community, in order to get better profits after selling for the companies. Community members are very suspicious of the ASMPF leadership.

While, the *cabo* prefer to allocate the land to the ASMPF. First because he now is a member of such association, secondly because he has a usufruct right to decide for land allocation located within his domain. The private farmer complains that the ASMPF is usurping his areas, attributed by the community, even-though he has an agreement with community leadership, because an existent infrastructure in the area.

Although this example occurred at a micro-level scale, it shows a hierarchical pattern based on power and economic relations that may be happening at the regional level, in which the association, traditional, private and governmental leaders, dominated by man at the local and regional levels have always given themselves preferential access to the best land, leaving the less fertile and marginal land to the rest of the farmers, in particular for women. This conflict is between over power, since the *regulo* is feeling that not only the association, but also his *Cabo* is taking decisions without his consent. This is becoming not only a land question, but also a territorial dispute, since the *Cabo's* area is located within the *regulo's* area, but according to communities delimitation process the limits is based on the *Cabo's* area. Power and economic relations have led in general to an inequitable distribution of the land resources and are undermine land existing local land markets.

5.8 Land and Water conflicts as a Result of Rural Land Markets

Land conflicts followed these same characteristics as the one's having earlier 1990's. In this study conducted in Namialo in June 2004 (INIA 2001) farmers were asked if there was more or less land and water available now than before, Forty seven percent (47%) of the farmers reported that there was less land and water resources available in 2004 than in the past. Twenty percent (20%) responded that there was abundant land and water resources now (in 2004) than before and eight percent (8%) responded that there were no land and water resources use problems yet but there would be in the near future. Fifty seven percent (57%) of the farmers who agreed that there was land and water resources scarcity at the present time and twenty percent of the farmers, who predicted that there would be land and water resources scarcity in the near future, attributed it to the expansion of private groups in the area. Seventeen percent (17%) of the farmers believed that because all farmers want to increase the size of their farms, and there are using water for irrigation land has become scarce. Ten percent (10%) of the farmers agreed that it was the increase of population, which leads to land and water resources scarcity

⁴ Forum is composed by elected individuals from farmers association who represent them in the negotiating process with private enterprises for crop price allocation, inputs and production. Forums are become much more market oriented and they are able to discuss at high levels (including at national level) about their production systems, mainly cash crops (cotton, maize, groundnuts and cashew nuts) and to find better markets.

The influx of private groups with land titles around major irrigation areas given by the provincial authorities and the Minister of Agriculture has been largely increased and they seemed to have the best land, at the expense of local farmers. The farmers whose land was expropriated around main irrigation areas were allocated new land, further away from their houses and, in most cases, in marginal areas, although the consultation mechanism among community members was conducted.

Another type of conflict is related to claims by returned relatives of some colonial settlers who had large properties in the area. These settlers had the usufruct right to use the irrigated land during the colonial period, obtained through compulsory policies. Local farmers in general complained about the invasion of these groups, under the approval of the district administrative authorities. This constrained local farmers who occupied these areas after they abandoned the country. These colonial settlers are requesting their areas to the Government, usually at the central level, which in some cases decided without take into account the current situation, in which communities have been occupied for more than 10 years.

Some conflicts emerged between who controls land within the general territory and the land within territories within *regulados* under matrilineal system. Leaders of some farmers associations, the local traditional authorities (*regulos*) and smallholder farmers who still inherited their land through the traditional system, are creating conflicts between the association and the local traditional authorities (*regulos*) due to the fact that the traditional authorities--who had rights to concede land to its community members, *regulados*, and to solve land litigation between its members--felt that the Cabo's (including within farmers association) are taking over their authority, in particular in areas dominated by cash crops, i.e. cotton.

5.9 Private Land Markets

Private land markets started long time go especially after the introduction of the structural adjustment program in 1987. In this year the government started to privatize most of its small, medium and large-size companies from all sectors of the economy. Most of the state farm companies were also privatized depending on the economic sector. In the cotton sector, the government created Joint Venture Companies (JVC) in 1991. These ventures included the government, through its Ministry of Agriculture, (49%) and the private sector (51%), to develop the zones considered to be good for cotton production. Most of other economic areas had decline at the time, such as tea, sugar and rice industries and their land privatization had a very little impact in the land markets.

Individual land markets also become a very important in the context of the new economic development. After the structural adjustment programs individuals who where looking for private investments, including governmental and administrators leaders acquired large areas for private use. Large parts of the districts where allocated to these individual without consent of local communities and their traditional leaders. During this period the Ministry of Agriculture, the provincial directorate of Agriculture

and the district authorities could allocate land, independent of its size and location. Overlapping allocation increased and land conflicts become a very detrimental factor. After the new Land Law and with an increase on international investments in Mozambique, rural land market has been steadily increasing, mainly along the corridors, prospects developing poles, near main infrastructures and in the past agricultural and tourism potential areas.

This market has been conducted in different ways, by individuals, private enterprises and families. The majority of promoters of a private land markets are urban people who wants a piece of land for agriculture, livestock, ranch or other type of land use. In general these people usually buy land from rural people. This practices is secret and it is made between relatives, fiends and outside of legal channels. The prices vary according to the needs of the seller, size of land, its location, capacity of the buyer etc. Then this piece of land is titling to a new owner under the normal legal mechanisms.

Internal markets within communities also occur. This happens in many cases among individual members of a community. For example, some farmers, mainly male young people open new fields (0.5 to 1 ha) and sell them to whom wants to farm within their own communities. These people normally carry this action when they want some money to move to urban areas, or to South Africa in the case of Southern Mozambique. Who buys those areas are in generally elder people who does not have household labor to farm. The price in this cases vary from USD\$10 to USD\$200, depending on the size of area and location of the farm.

Another emerging market results from private groups and individuals coming from South Africa and Zimbabwe, who rent part of the land from individuals during large periods for farming, mainly cash crops, game farming and other type of land use. During the field work conducted in many parts of the country (see Tique 1997 in Namialo, Nampula province, 1998 in Majune, Niassa province, 1999 in a study conducted in Mabalane, Gaza province, 2000 in study conducted in Gondola, Manica province, and 2002) most of the respondents agreed that there is an increase on land selling in theirs areas to foreign people. These people usually appear in the areas using Mozambican partners, who use they nationality for getting land rights, while in fact who pays and invest in the land is a foreign individual. The exchange in this is cases are not only in cash, but also, it is made "in kind", i.e. mechanical gin, tractor, cars, etc.

6. The need for a Land Use Planning to improve better community and private land usage

Previous objectives of land use planning carried out by the institutions involved was twofold: first to identify land use planning needs at different operational levels (national, provincial, district and community) and, secondly, to develop a set of procedures, concepts and methodologies for land use planning and natural resources management for national adoption. These objectives are achieved in terms of the following: land use planning activities; the availability of data and gaps within existing databases; institutional requirements and mechanisms and methods of operation; human resources training; and formulation and developments of strategies to undertake

stated objectives. These activities are executed in a centralized manner, but often without the necessary level of coordination among the institutions that undertake them. Communities consultation and delimitation usually were not considered during the earlier land use plans.

Within the new framework of Mozambique's new "development drive" of decentralization and increased grassroots participation in natural resource management, a major emphasis of an integrated land use plan has been placed on district and community activities. The proposed strategy is, firstly, to establish together with communities, then with the district and lower level authorities a knowledge base about the present land use and negotiate an agreement for future land use, the so called district master-plan. Subsequently, local communities, which are identified in the first phase, are to be assisted with the development and management of their territories.

Methodologies for both levels to achieve the above have been established now and are documents in the respective reports of the provincial teams but they should be improved considering the need to defend communities rights while involving them in partnership with private investments in order to provide an added value for their community activities while providing access to better potential lands to also private groups.

Results and conclusions of the land use planning component should be directly used in major policy proposals by the government of Mozambique, both in agricultural policy and the national Land Policy. In the position, the proposed national agriculture; development program, land use planning has been perceived as the process for identifying development opportunity and programming development actions. The component has also been instrumental in the elaboration of national programmed proposals by the Land Commission. Various discussion papers were prepared for this purpose.

Apart from the methodology development, the case studies have had a direct impact on provincial, district and local authorities and land users. In Xai-Xai a comprehensive district land use master-plan was established and presented to the provincial District government. In addition, future land use arrangements for 14 localities were negotiated. In Gondola 6 communities were targeted; not only land use development options are proposed but a process of farmers mobilization and community self help was induced. In Mocuba a comprehensive social and physical inventory was established. Most recently a land use planning was conducted to Inhambane province, in which a community consultation is strongly recommended whenever land allocation for private purposes is considered. It must be underlined that through a series of workshops and seminars, both at district and provincial level, tens of administrators and technicians were reached and introduced to basic land resources management and planning issues.

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