

LIWONDE FOREST RESERVE STRATEGIC AREA PLAN



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**MACHINGA PLANNING TASK FORCE
MAY 2007**

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1. Introduction

The Liwonde Forest Reserve was gazetted in 1924, to protect catchment areas and special tree species. Since the gazettelement there have never been strategic forest area plans which led into poor management of the resource. This strategic forest area plan will provide guidance on proper management and utilization of the resource for the improvement of communities' livelihoods.

The plan will include the objectives and strategies which provide guidance on what, where and who will undertake activities in the reserve.

○ Role of the SFAP

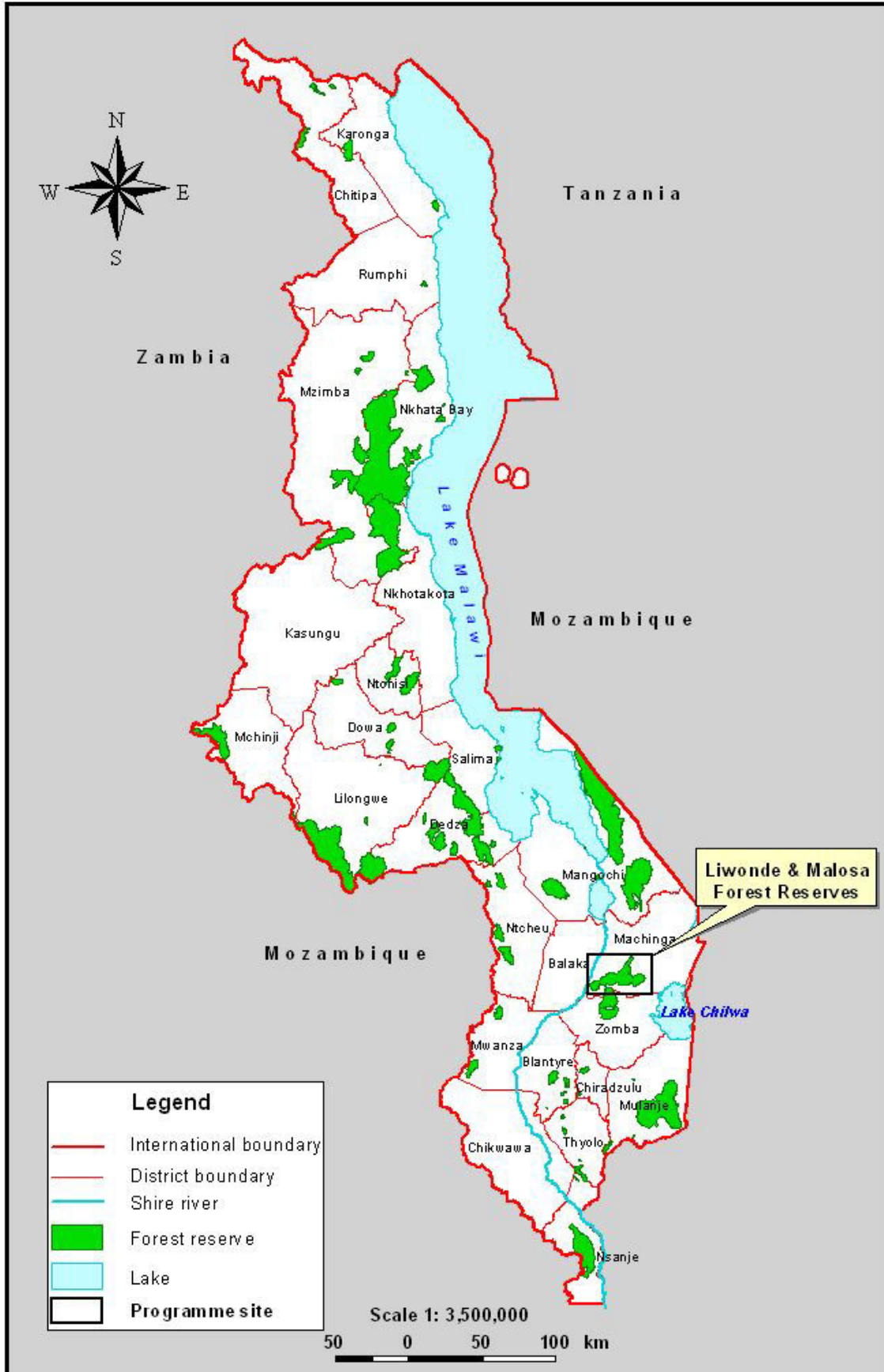
The strategic Forest Area Plan has been developed to provide guidance to the concerned parties during the implementation of their activities in the reserves and the customary land 5km radius of it. It clearly stipulates the area of impact, population, villages to be involved, dominant actors, problems/hotspots, strategic issues, the vision, objectives and of cause strategies to address these objectives.

It provides guidance on how to determine local planning and strategic priorities, identification of broad stakeholder, how to form partnerships, to negotiate roles, responsibilities and accountability. Therefore it recommends the establishment of Local Forest Management Board and Village Natural Resources Committees which would participate in the management of the blocks to be established in the reserves for co-management.

2. Impact Area

Location: The area is in Machinga District in the Southern part of Malawi. It includes the two Forest reserves of Liwonde and Malosa and the area in the customary land (5 km radius of the reserves).

LOCATION OF LIWONDE AND MALOSA FOREST RESERVES



Forest Area Description

Size of the impact area:

- Liwonde Forest Reserve: 26266 Ha.
- Malosa Forest Reserve: 178.738 Ha.
- Customary land in impact area: 5715.04 Ha.
- Chaone: 2193.675Ha

There are over 188,792¹ people living around Liwonde Forest Reserve in Traditional Authorities Sitola, Chamba, Mposa, Mlomba and Nsanama with the total of 135 Village Development Committees. The impact area covers Ntubwi, Nsanama, and Domasi EPAs.

The reserve is a sparsely miombo woodland which is dominated by young trees of 5 to 10cm diameter class because of disturbance. Number of stems per hectare is decreasing especially middle dbh class. At the top part *Brachystegia Bussei* and *Utilis* are dominating and at the lower part *Brachystegia Boehmii* and *Uarpaka* species are dominating. It is becoming a *Uarpaka-Brachystegia* forest. The forest reserve is increasingly under pressure due to collection of firewood, timber, curios, pit-sawing, charcoal production, among others. Wild fires also contribute to the degradation of these reserves. Encroachment and illegal settlements are common in the reserve due to unclear boundaries. These reserves are also surrounded by *Eucalyptus* plantation which acts as a buffer zone at the south-west of Liwonde and northern part of Malosa.

The management of the reserve was done by the Department of Forestry without the involvement of the communities who happen to be the main stakeholders before the production of plan. Traditional Authorities and Non Governmental Organizations had very little say in the management.

Forest Resource on customary land:

There is very little forest resources on the customary land in the impact area which make the communities depend much on the Forest reserves. Mean time, there are only 3 Village Forest Areas.

Local Forest Management Board

A Local Forest Management Board is an umbrella body that is responsible for all activities to take place in Liwonde and part of Malosa forest reserves.

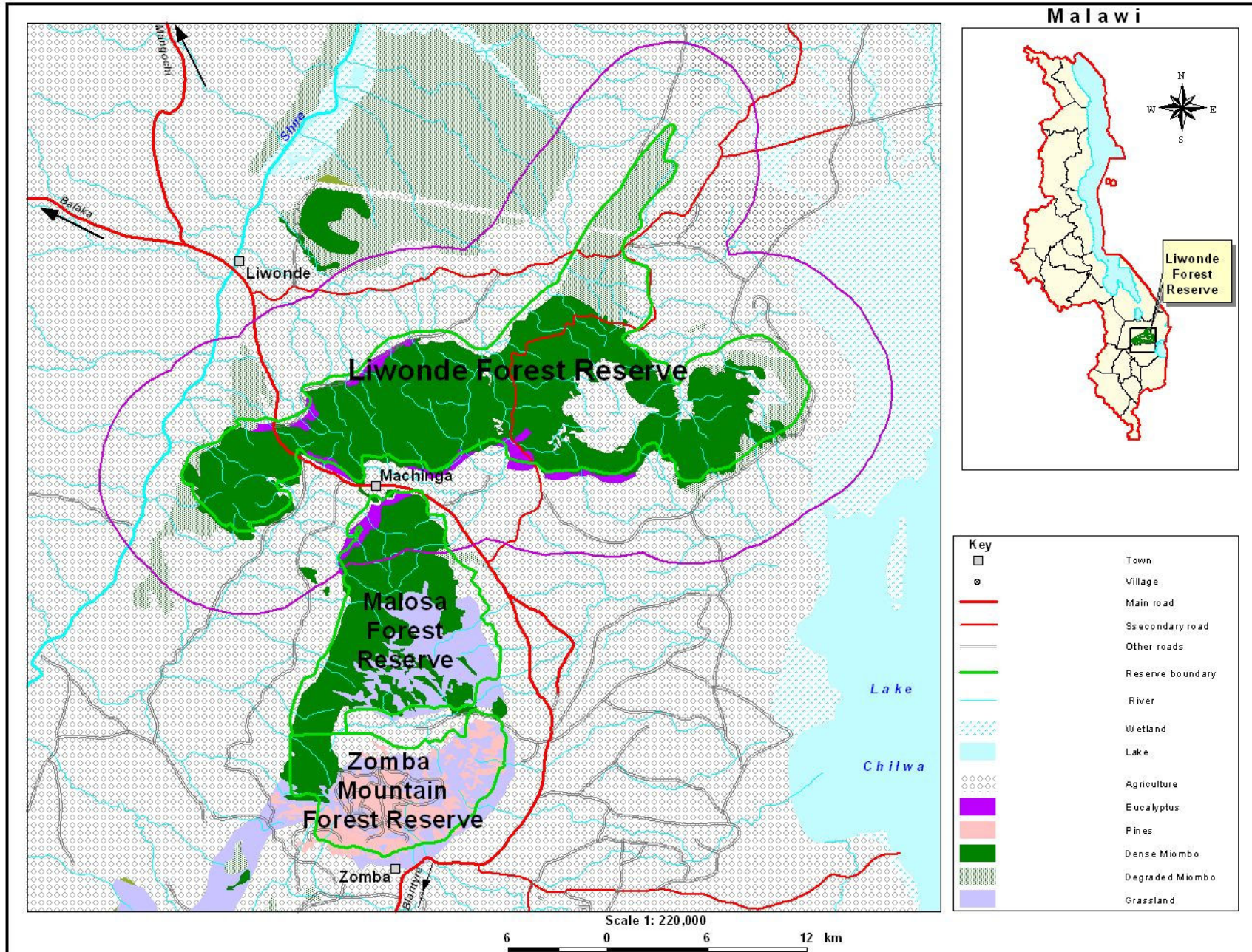
Composition of Local Forest Management Board is as follows:-

- Block Committees Representatives,
- Traditional Authorities Representatives,
- Key dominant actors
- District Forestry Office - Secretariat.

Its mandate will include facilitating, advice and monitoring forestry activities under taken by Block Natural Resources Management committees within the impact area.

¹ Charles Jumbe CARD Pers.comm (23% of the population depend on forests)

LAND COVER AROUND LIWONDE FOREST RESERVE

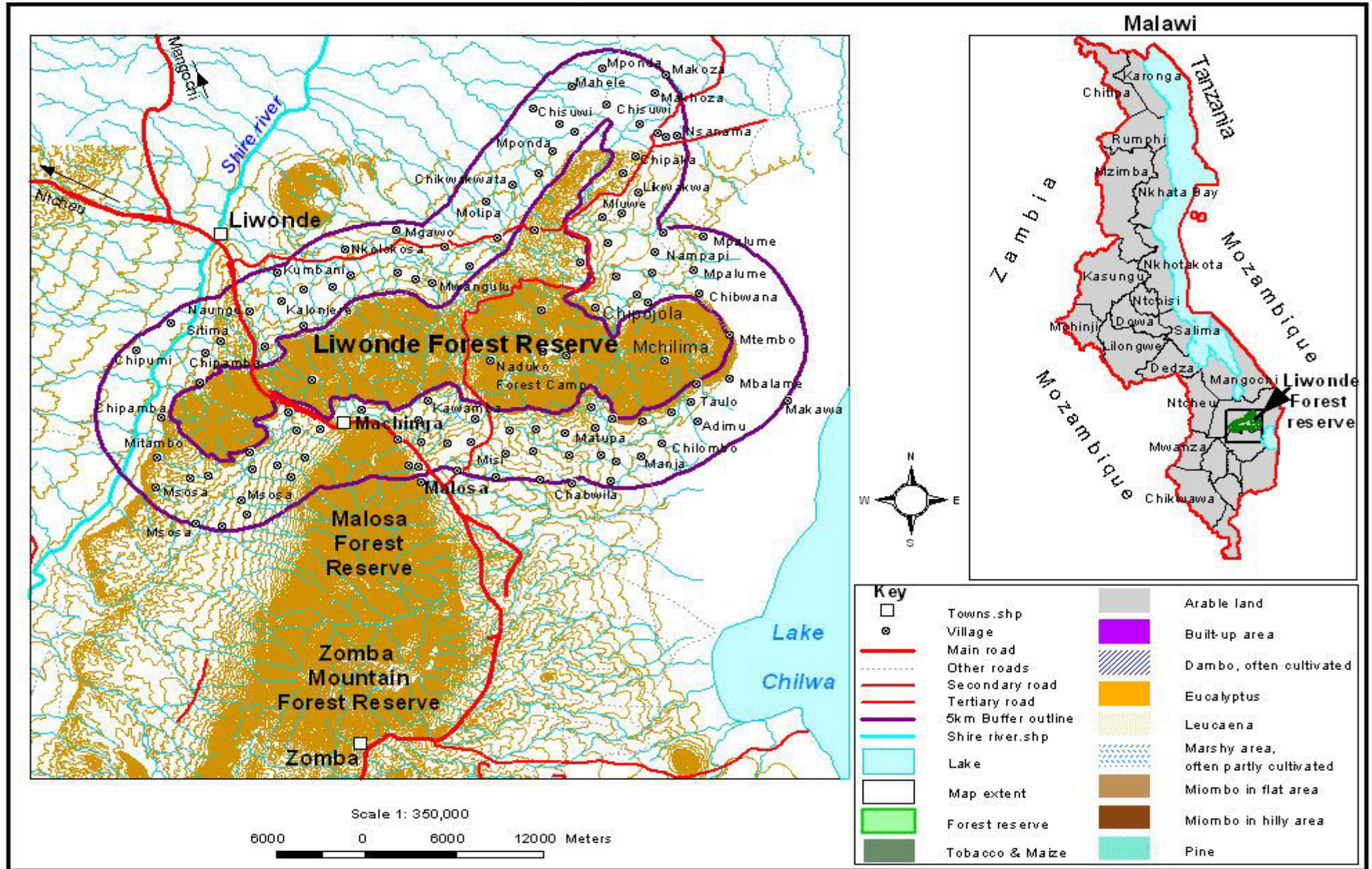


Malawi

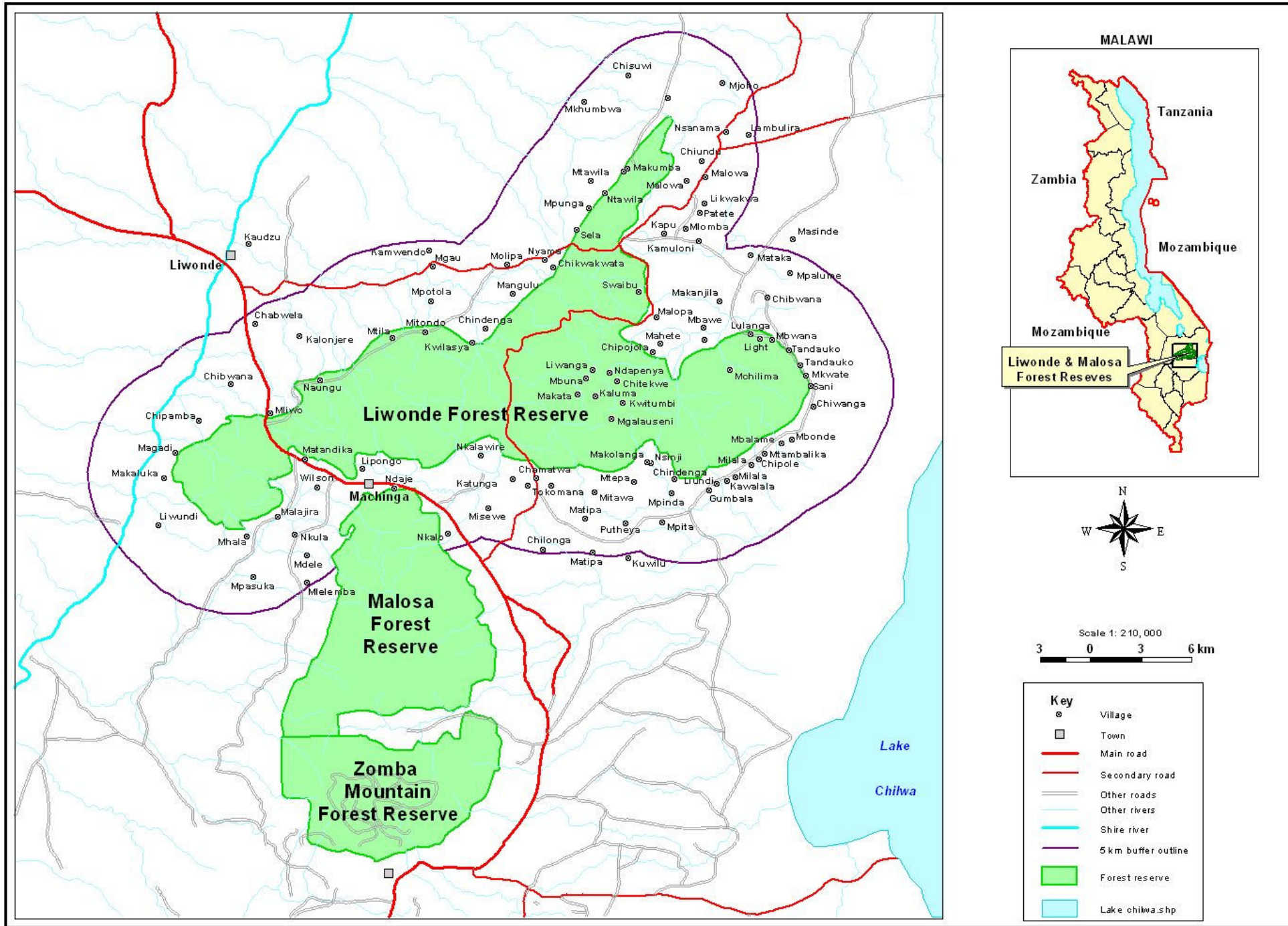


Key	
□	Town
●	Village
— (thick red)	Main road
— (thin red)	Secondary road
— (grey)	Other roads
— (purple)	Reserve boundary
— (blue)	River
▨ (dotted)	Wetland
▨ (light blue)	Lake
▨ (dotted)	Agriculture
▨ (purple)	Eucalyptus
▨ (pink)	Pines
▨ (dark green)	Dense Miombo
▨ (light green)	Degraded Miombo
▨ (light blue)	Grassland

Liwonde Forest Reserve - Gradient Map



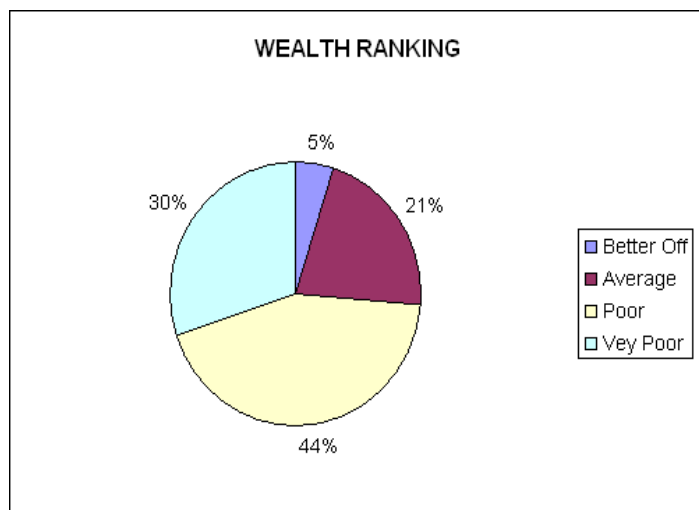
LIWONDE AND MALOSA FOREST RESERVES - SETTLEMENTS



3. Socio-economic profile

Brief overview and summary tables of key livelihood activities, forest product ranking, wealth ranking, and income in relation to forest based activities.

3.1: Wealth Ranking Classes by Percentage



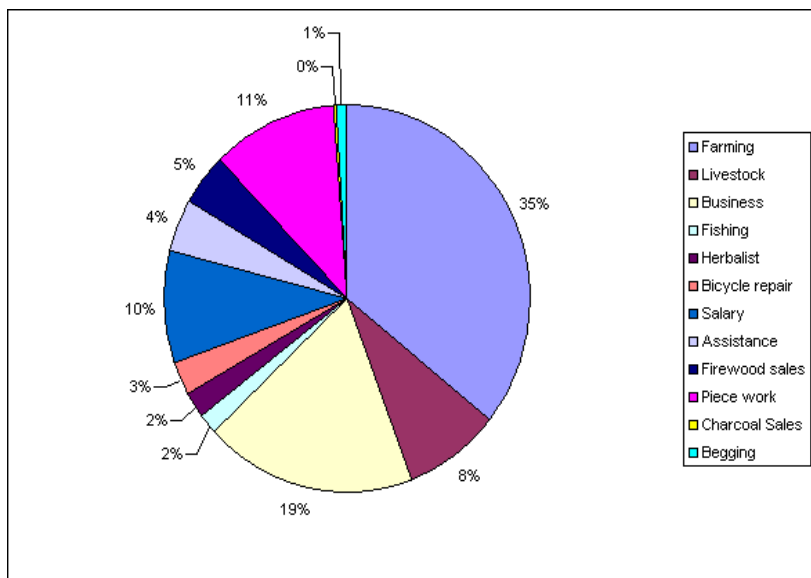
A majority of the population fall into self defined wealth categories of poor or very poor. A majority of households depend on agriculture and small business with some households involved in firewood and charcoal sales. Other data has revealed that communities spend very little cash income on fuelwood as they have free and open access to forest resources.

3.2 Top Ranked Forest Products

PRODUCT	SCORES
Water	13
Firewood	13
Soil	13
Bamboos	13
Grass	13
Fibres	13
Poles	12
Fruits	12
Stones	9
Mushroom	9
Reeds	5
Honey	4
Herbs	4
Palm leaves	3
Wildlife	3
Sisal	2
Curios	1
Charcoal	1

Forest product ranking from sampled villages in the area has revealed that firewood and water are top priority forest products with NTFPs being indicated as less important. This has implications for the perception of value in terms of income and subsistence and management practices of the area.

3.3 Sources of Income



4. Summary of strategic issues & Hotspots

STRATEGIC ISSUES

Unsustainable exploitation of the resources

Key forest products coming from the impact area include: charcoal, curios, firewood which are harvested in unsustainable manner. Areas are being severely exploited as indicated by heavy illegal cutting.

Declining agricultural productivity

It is apparent that agriculture productivity is declining further leading to more farm families having inadequate yield/harvest for food as well as income. As a result the community depends solely on the forest resource for income realization.

Insecure access, rights and benefits

Lack of secure rights and access to the forest resource has resulted to the overexploitation of the state forest areas. The communities do not have sense of ownership and hence they do not value the forest not under their management. This is resulting in uncooperative mindset that resists the establishment of their own forest resources.

Inadequacy and non functionality of local institutions

There are few institutions that have been established in the sampled villages focusing on management of forest and in some cases those institutions are not vibrant. Those that are there either are non functional or had very little knowledge on their roles and responsibilities.

Dependency on forests – positive or negative

People have dependency on the forest for their daily living such that they cannot do without the forest reserves in terms of firewood for domestic use and income, charcoal production and curio making for sale. Unfortunately these are obtained illegally and are not available on the customary land in the impact area.

Top-down approach

Decision making in the management and provision of livelihoods in the impact area was seen to be top down approach. The management of the reserve is largely dictated by central government while the people around the reserves have no say other than obeying the law.

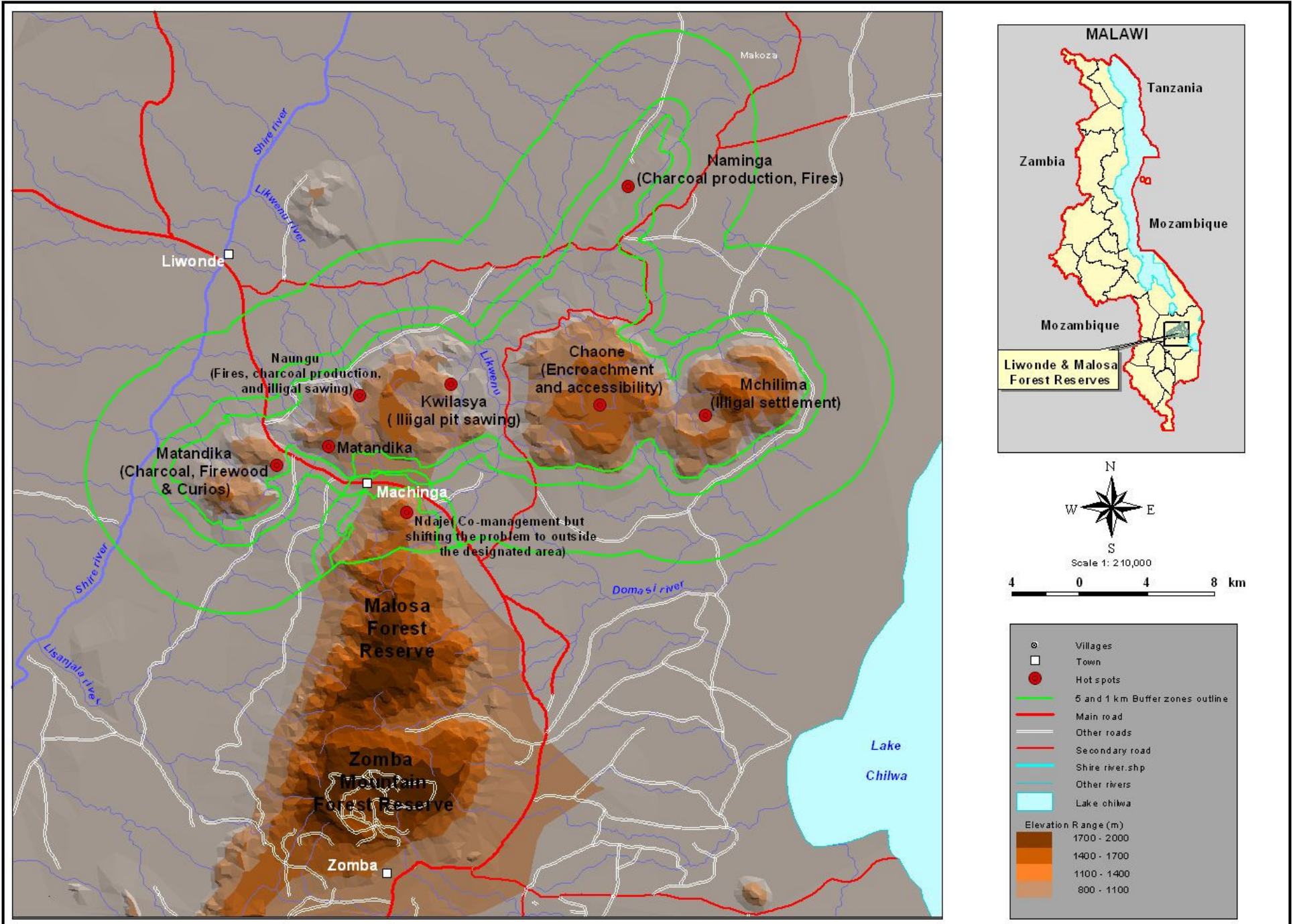
4.1.7 Population versus resource availability

The population around the reserve area is growing while the forest resource is declining and degraded. This has created more demand than what the forest resource can supply.

HOT SPOTS

The following areas are identified as of specific and critical in nature and need to be addressed within the plan:

HOT SPOTS IN LIWONDE AND MALOSA FOREST RESERVES



5. Vision

A well managed forest reserve and forests on customary land that will supply a steady flow of benefits for the improvement of livelihoods and provision of critical environmental services.

6. Objectives

1. To rehabilitate and protect fragile areas within and outside the forest reserve.
2. To increase forest resource cover, productivity and value, to ensure continuous provision of local and national services.
3. To improve livelihoods of forest dependent communities through sustainable forest management and utilisation.
4. To improve governance of forest resources through local institutions.

7. Strategies

	Strategies	Priority (H,M,L)	Objectives	Justification	Implementation Guide Responsibility/ Collaboration	Indicators
<ul style="list-style-type: none"> • Inside Reserve 						
1	Promote co-management in the forest reserve through legal agreements	H	1,2,3,4	<ul style="list-style-type: none"> • Promoting ownership and improved security of forest resources • Facilitate implementation of forest act and policy • Communities can benefit from specific forest products 	<ul style="list-style-type: none"> • Develop management plans for each block • Develop co-management agreements for each block with identified communities DFO & RFO • Communities to be engaged within 1 Km radius and blocks demarcated based on natural boundaries (rivers, steep slopes) DFO • Blocks to include both natural forest and eucalyptus plantations DFO & RFO 	<ul style="list-style-type: none"> • Management plans and agreements developed, signed and implemented

	Strategies	Priority (H,M,L)	Objectives	Justification	Implementation Guide Responsibility/ Collaboration	Indicators
2	Ensure boundaries of forest reserve and community forest areas are mutually agreed and respected	H	2,3,4	<ul style="list-style-type: none"> ❖ Mutual agreement will increase the probability of boundaries being respected and understood ❖ Reduce conflict 	<ul style="list-style-type: none"> ❖ Implemented through existing village structures such as VDC ❖ Target areas where communities claim lack of knowledge of boundary and conflicts are already evident <p><i>DFO & Local leaders</i></p>	<ul style="list-style-type: none"> ❖ Boundary agreed and maintained by community
3	Strengthen community law enforcement within forest reserve area	M	1,2,4	<ul style="list-style-type: none"> ❖ Forestry department and assembly lack capacity to effectively enforce the law ❖ Increase community capacity and appreciation of the law 	<ul style="list-style-type: none"> • Use the communities in hot spots and those that are near the reserve or within 1 Km radius. <i>DFO</i> • Form and work with patrol teams at block level <i>DFO</i> 	<ul style="list-style-type: none"> • Number of cases of illegal practice outside co-management agreement
4	Eliminate encroachment of the forest reserve through engagement of local stakeholders	M	1,2,4	<ul style="list-style-type: none"> ❖ Facilitate implementation of the forest act and policy ❖ Reduce conflict ❖ Increased forest cover 	<ul style="list-style-type: none"> • Identify illegal settlements and encroached areas, demarcate boundaries • Institute community self monitoring of encroachment at block level. 	<ul style="list-style-type: none"> • Number of cases solved by local stakeholders

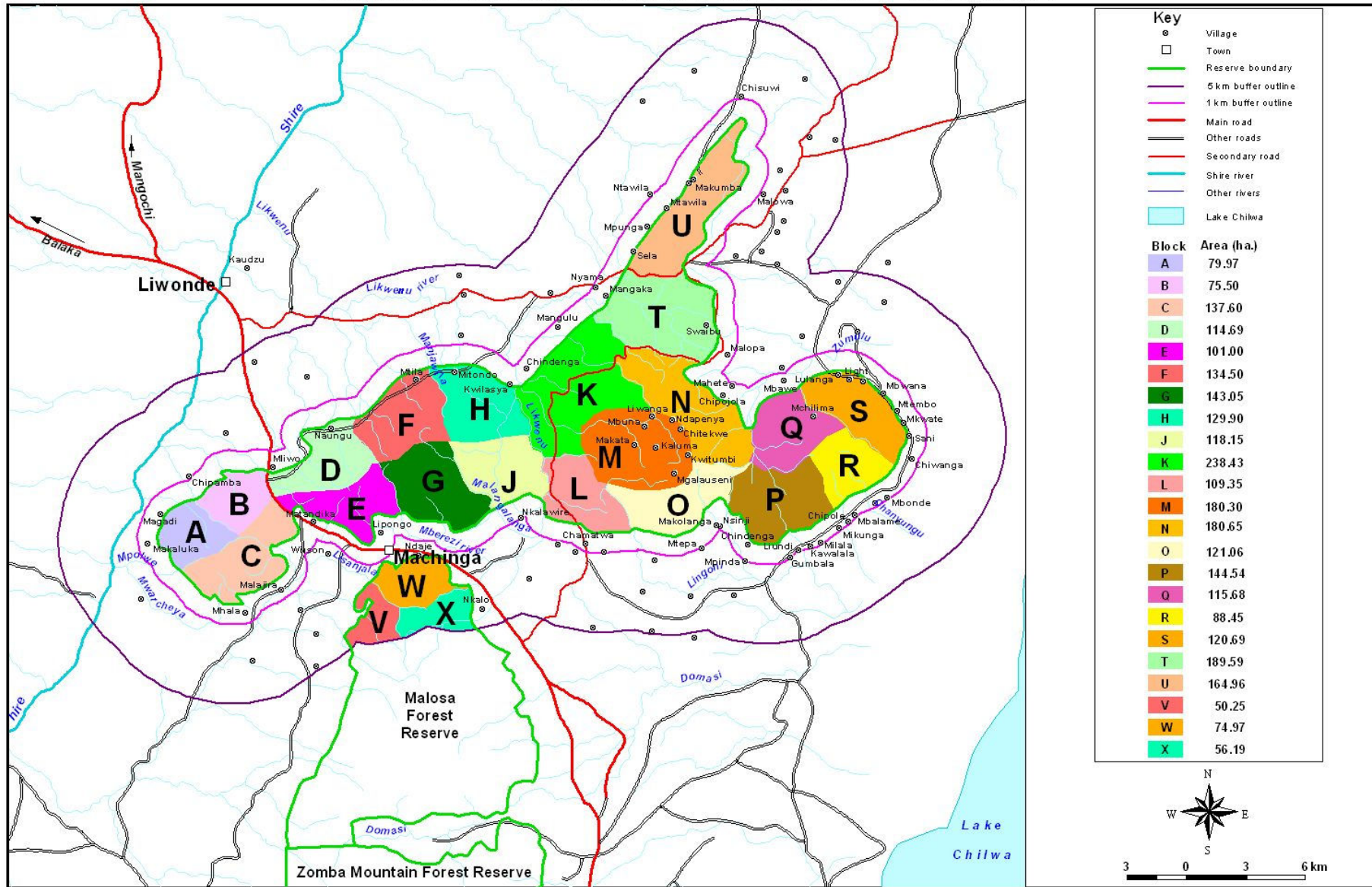
	Strategies	Priority (H,M,L)	Objectives	Justification	Implementation Guide Responsibility/ Collaboration	Indicators
5	Promotion of selective felling in the forest reserve	H	1,2,3	<ul style="list-style-type: none"> Will increase forest productivity and access to tangible benefits for communities Will reduce illegal tree cutting 	<ul style="list-style-type: none"> Only mature trees will be identified, selected and felled. No cutting of trees will happen on slopes of 35 degrees plus unless guided by the department <i>DFO & RFO</i>	<ul style="list-style-type: none"> Amount of tangible benefits accrued by communities
6	Protect water catchment's sources	H	1,2,3,4	<ul style="list-style-type: none"> This will ensure a continuous supply of water to the area 	<ul style="list-style-type: none"> All areas where water springs should be well managed and no harvesting <i>DFO and Water Dept</i>	<ul style="list-style-type: none"> Continuous and consistent water supply
Outside the Reserve						
7	Promote establishment and management of Village Forest Areas under management plans	M	2,3,4	<ul style="list-style-type: none"> Reduce over-dependency on forest reserve Increases regulated access to forest products outside the reserve 	<ul style="list-style-type: none"> Unallocated customary land <i>DFO</i>	<ul style="list-style-type: none"> Number of management plans developed, signed and implemented

	Strategies	Priority (H,M,L)	Objectives	Justification	Implementation Guide Responsibility/ Collaboration	Indicators
8	Promote improved woodlot and tree management at community and individual household level for income generation	H	2,3	<ul style="list-style-type: none"> • Reduce over dependency on forest resources from reserve • To increase income from customary land forest resources 	<ul style="list-style-type: none"> • Allocated and unallocated customary land <p><i>DFO</i></p>	<ul style="list-style-type: none"> • Number of households engaged in FBEs
Inside and Outside Reserve						
9	Promote strategic service delivery by extension providers in area	M	1,2,3,4	<ul style="list-style-type: none"> • Avoid duplication of services • Target critical services in line with needs of communities • Equitable access to services and benefits for communities 	<ul style="list-style-type: none"> • Identify institutions which are going to operate and define where and what • Monitor service providers standard of service delivery in line with forest policy and SFAP • <i>DFO & RFO</i> 	<ul style="list-style-type: none"> • Incidence of duplication of services to communities
10	Promoting fire as management tool	M	1,2,3	<ul style="list-style-type: none"> ❖ Promote regeneration of mixed species and varied forest structure ❖ Reduce late hot fires 	<ul style="list-style-type: none"> ❖ In hotspots create fire management zones ❖ Promote patch early burning and rotational grazing at block level <p><i>DFO</i></p>	<ul style="list-style-type: none"> ❖ Number and diversity of species of regeneration

	Strategies	Priority (H,M,L)	Objectives	Justification	Implementation Guide Responsibility/ Collaboration	Indicators
11	Promote and support effective marketing and value adding mechanisms for forest products	H	2,3	<ul style="list-style-type: none"> • Increase income generating opportunities from forest products • Links value of forest and sustainable management 	<ul style="list-style-type: none"> • Identify and promote specific products both new and old • Work with specific producer groups from the area <p><i>DFO</i></p>	<ul style="list-style-type: none"> • Number of FBES with new market opportunities
12	Promote regulation and licensing of forest and tree products by community institutions both within and outside the reserve	M	2,3,4	<ul style="list-style-type: none"> • Over exploitation of producers on their products will be reduced 	<ul style="list-style-type: none"> • Registered local forest organizations <p><i>DFO & RFO</i></p>	<ul style="list-style-type: none"> • Number of licenses issued by communities
13	Promote effective area based management through collaboration amongst local institutions at strategic level	M	1,2,3,4	Implementation of forest policy recommendations	<ul style="list-style-type: none"> • Regular meetings to promote accountability and monitor impact of management 	<ul style="list-style-type: none"> • No of issues solved through areas based solutions and meetings

8. Strategy Map

L IWONDE AND MALOSA MANAGEMENT BLOCKS



ANNEX 1: Population

TA Name	Population	Male	Female
Mlomba	27,490	14,917	12,574
Nsanama	29,667	² -	-
Sitola	56,011	29,940	26,071
Chamba	47,701	33,760	13,941
Mposa	27,923	20,236	7,687
Total	188,792		

The figures above have been projected from 1998 population.

ANNEX 2: OVERVIEW OF THE PROCESS OF PLAN DEVELOPMENT

On 21-23 March 2007 Liwonde Forest Reserve Area Planning Task Force met with district assembly officials and regional forest office representatives to develop a SFA Plan for the area of Liwonde Forest Reserve (26 000 Ha) surrounded by 135 villages and 188,792 total population.

The team facilitated the process as follows:-

- ❖ Presentation and validation of IRA report
- ❖ Developing a vision
- ❖ Agreeing strategic management objectives
- ❖ Identifying issues
- ❖ Developing management strategies and guiding principles for inside and outside reserve.
- ❖ Defining blocks based on guiding principles.

The people who were involved in the development of the plan are as follows:-

Name	Organization
S.J. Manda	ARFO (Reserves)
T.S. Zulu	Programme Coordinator – PCU (S)
J.E. Msangaambe	District Agriculture Office (MHG)
T.H. Kamoto	Forestry Department Headquarters
G.E. Kanyerere	District Forestry Officer (Chikwawa)
F.W. Ngwangwa	District Forestry Officer (Nsanje)
Alick Mitawa	District Forestry Officer (Zomba)
G.Y.A. Mphepo	Department of Parks and Wildlife
D.W. Mfunya	Nauko Forestry Plantation
L.K. Mjumira	Liwonde Town Assembly
Ezekiel Luhanga	Machinga District Assembly
George Gresham Nyathi	Curio Seller
T.A Sitola	Chief
T.A. Chamba	Chief
G.V.H. Kamuloni	Community
F.D. Salamu	Green line Movement
Evanca W. Chisiano	Department of Information
J.S. Gwaligwali	Chancellor College – Zomba
C.H. Mzilahowa	DPD – Machinga District Assembly
J.K. Banda	ADFO – Machinga District Forestry Office
Karen Edwards	RFO – South (IFMSLP)
Rev. Fr. E.A. Pembamoyo	Anglican Diocese of Uppershire
F.A.W. Khozi	District Forestry Officer (Machinga)
R. Katuya	RFO (South)
D.F. Chitedze	Green Line Movement
L. Dinesi	Malosa Diocese Uppershire
Mr. Janatu	Group Village Headman Magadi

² Population for males and females for Nsanama Village not available

ANNEX 3: SUMMARY TABLE OF OBJECTIVES AND STRATEGIES

Objectives	Strategies
1. To rehabilitate and protect fragile areas within and outside the forest reserve	<ul style="list-style-type: none"> ❖ Promote co-management in forest reserve through legal agreements ❖ Strengthen community law enforcement within forest reserve area ❖ Eliminate encroachment of the forest reserve through engagement of local stakeholders ❖ Promotion of selective felling in forest reserve ❖ Protect water catchments sources ❖ Promote strategic service delivery by extension providers in the area ❖ Promote fire as management tool ❖ Promote effective area based management through collaboration amongst local institutions at strategic level
2. To increase forest resource cover, productivity and value to ensure continuous provision of local and national services	<ul style="list-style-type: none"> ❖ Promote co-management in forest reserve through legal agreements ❖ Ensure boundaries of forest reserve and community forest areas are mutually agreed and respected ❖ Strengthen community law enforcement within forest reserve area ❖ Eliminate encroachment of the forest reserve through engagement of local stakeholders ❖ Promotion of selective felling in forest reserve ❖ Protect water catchments sources ❖ Promote establishment and management of village forest areas under management plan ❖ Promote improved woodlot and tree management at community and individual household level for income generation ❖ Promote strategic service delivery by extension providers in the area ❖ Promote fire as management tool ❖ Promote and support effective marketing and value adding mechanisms for forest products ❖ Promote regulation and licensing of forest and tree products by community institutions both within and outside the reserve ❖ Promote effective area based management through collaboration amongst local institutions at strategic level
3. To improve livelihoods of forest dependent communities through sustainable forest management and utilisation	<ul style="list-style-type: none"> ❖ Promote co-management in forest reserve through legal agreements ❖ Ensure boundaries of forest reserve and community forest areas are mutually agreed and respected ❖ Promotion of selective felling in forest reserve ❖ Protect water catchments sources ❖ Promote establishment and management of village forest areas under management plan ❖ Promote and support effective marketing and value adding mechanisms for forest products ❖ Promote regulation and licensing of forest and tree products by community institutions both within and outside the reserve ❖ Promote effective area based management through collaboration amongst local institutions at strategic level
4. To improve governance of forest resources through local institutions	<ul style="list-style-type: none"> ❖ Promote co-management in forest reserve through legal agreements ❖ Ensure boundaries of forest reserve and community forest areas are mutually agreed and respected ❖ Strengthen community law enforcement within forest reserve area ❖ Eliminate encroachment of the forest reserve through engagement of local stakeholders ❖ Protect water catchments sources ❖ Promote establishment and management of village forest areas under management plan ❖ Promote strategic service delivery by extension providers in the area ❖ Promote regulation and licensing of forest and tree products by community institutions both within and outside the reserve ❖ Promote effective area based management through collaboration amongst local institutions at strategic level

ANNEX 4: HOT SPOTS

NAME OF HOTSPOT	LOCATION	ISSUES
Chaone	Customary land within and on top of Liwonde Forest Reserve	Absence of clear boundaries between the customary land and the reserve as a result they are encroaching the forest reserve.
Matandika	A village along Lilongwe - Zomba M1 road about 6km from Machinga Boma as you go to Lilongwe	Unsustainable utilization of the resource in production of charcoal, curios, and firewood within the reserve.
Chilima	A village within the reserve	Illegally settled in the reserve and its leadership has been legally established by the District Assembly.
Naungu	A village 15km south of Machinga boma	Always attacked by fire during dry season, a lot of charcoal production and illegal pit sawing
Naminga	A village along Liwonde - Ntaja M1 road	Unsustainable utilization of the resource in charcoal production and fires which destroy forest regenerants
Ndaje	A village 800 south of Machinga Boma along Lilongwe - Zomba M1 road.	Government piloted this village for co-management. A block was established for their management but the community is utilizing the resources from Malosa Forest Reserve which is adjacent to their block.
Kwilasha	A village 10km from Machinga Boma along Liwonde – Mangochi via Ntaja road	Unsustainable utilization of the resource in pitsawing



Chaone



Matandika

ANNEX 5: SCENARIO BUILDING FOR CHAONE

Projected Impact/Factors influenced by change in scenario	Scenario One; Business as Usual (How it is now March 2007)	Scenario Two; Promoting co-management	Scenario Three; The road to co-management	Scenario Four; Build that road alone	Scenario Five; Relocation
Creating the story and defining the characteristics which change the scenarios					
Broad Characteristics to differentiate/define scenarios	<p><u>Business as Usual.</u> Chaone <i>Village is located on customary land</i> on a plateau of Liwonde forest reserve. At present <i>the village is not engaged in forest management activities</i> and relationships with service providers and the assembly is strained. Despite requests to FD and assembly there is <i>no access road to the area.</i></p>	<p><u>Promoting co-management</u> <i>Changed Factors; from Business as Usual:</i> negotiate boundary around Chaone through co-management process. Support livelihood interventions as appropriate for at least next two years with support from IFMSLP. Support improved forest management (defined through plan; early burning, rotational grazing, enrichment planting etc)</p>	<p><u>The road to co-management;</u> <i>Changed factors from business as usual.</i> Road approved and built and co-management promoted and livelihood interventions supported</p>	<p><u>Build that road alone</u> <i>Changed factors from business as usual.</i> Road built by district assembly with approval from FD. Co-management not promoted in this area and no support to livelihood development</p>	<p><u>Just Move Them Out;</u> <i>Changed Factors From Business as Usual</i> Chaone village to be relocated to a completely new area outside of any forest reserve and government to gazette the settled area</p>
Factor Analysis for all five scenarios					
1. Forest Resources	Valuable timber species mined by outsiders (pitsawyers) from Liwonde 1982-85. Licences from forest department issued for permission to pitsaw on customary land. Customary forest converted to farming	Under co-management process a full management resource assessment will be undertaken and appropriate management strategies to regenerate the reserve and promote homestead planting will	Under co-management process a full management resource assessment will be undertaken and appropriate management strategies to regenerate the reserve and promote homestead planting will be undertaken.	Increased possibility of access to forest resources and increased deforestation by outsiders/insiders. Larger units of forest products can be shifted using vehicles. Deforestation may	May improve but also may not as "outsiders" will continue to invade and exploit further especially with no village customary laws operating in area. High possibility that

Projected Impact/Factors influenced by change in scenario	Scenario One; Business as Usual (How it is now March 2007)	Scenario Two; Promoting co-management	Scenario Three; The road to co-management	Scenario Four; Build that road alone	Scenario Five; Relocation
	Forest Reserve encroached approx 30% and cover and value of forest will continue to decline	be undertaken. Assumption deforestation will be controlled/maintained and forest will start regenerating	Assumption deforestation will be controlled and forest will start regenerating. Pressure on the forest will be reduced (alternatives) and regulation by the community patrol system and regulation in place.	increase or also decrease as villagers can find income support and employment elsewhere. Large uncertainty of impact on resources with this scenario	community members will still return to area and continue agriculture in the reserve. Resulting in further deterioration of the relationships.
2. Population Levels	Population estimated 5000 people/620 households	Same as business as usual	Possible migration and option for family planning services available may mean population level is maintained.	See scenario three	Uncertain. May increase/decrease depending on new location and access to support and health services
3. Infrastructure	No access road from M1 approx three hour climb from Lingoni. Forest station	Same as business as usual although villagers may invest but the return will be longer	Road will give access to service providers and business people into Chaone and Chaone Villager access to markets	See scenario three	Uncertain. May improve depending on new location and investment of government in relocation services
4. Relationship with forestry department	Relationship with forestry department strained as approval for access road through reserve refused in 2005 with no engagement of Chaone Village	Improved if trust is continually built and contact ongoing	Improved and perceived as cooperative for assisting improving immediate situation based on long term request	May not improve significantly as villagers still feel department has slowed down their own development and it will depend on whether the department uses road blocks	Relationship will remain distrustful of department even in new area based on previous life experience
5. Relationship with district assembly	Relationship with assembly not good quality because	May improve as assembly will be involved in negotiation	Improved considerably because development projects can be allocated	Will improve as villagers will see that their request has been	Relationship will deteriorate with assembly as will feel

Projected Impact/Factors influenced by change in scenario	Scenario One; Business as Usual (How it is now March 2007)	Scenario Two; Promoting co-management	Scenario Three; The road to co-management	Scenario Four; Build that road alone	Scenario Five; Relocation
	perception of neglect. Example construction projects not completed or supervised by assembly officials because of inaccessibility of area	and implementation of co-management. Will be perceived by community as having influenced FD.	to Chaone as access will increase supervision feasibility	met by assembly	unsupported in lobbying perspective to forestry department
6. Livelihood (Farmland/agriculture)	Shortage of farmland (see encroachment) Declining soil fertility Some practice of shifting cultivation (reserve encroachment) and amount of forest converted to agriculture will increase	Will improve with introduction of specific interventions/IGAS/enterprises Farmland situation in relation to encroachment clarified.	Service providers may help to improve agricultural production on land and support to improving soil fertility	See scenario three. Encroachment will continue as there will be an increase in vehicles and increased market opportunities for agriculture	Uncertain. May improve depending on new location and investment of government in relocation services
7. Livelihood (Markets for products)	All farm produce sold at Liwonde Boma transported by foot	Market opportunities may increase with introduction of specific interventions but access to beyond local markets still limited	Markets for products will be expanded and Chaone itself will become a market for specific local products	See scenario three	Uncertain. May improve depending on new location and investment of government in relocation services
8. Livelihood (Job Opportunities/employment)	No job opportunities in Chaone and no other employment locally Labour in surplus	Through co-management process and management activities opportunities may exist for piece work	Job opportunities will increase with introduction of new business in Chaone and development projects and even road construction	See scenario three	Uncertain. May improve depending on new location and investment of government in relocation services
9. Livelihood (Clean water)	Untreated Spring fed water supply declining due to deforestation	Water supply maintained with action to regenerate forest	Opens possibility or organizations like water AID and water dept assessing and intervening	See scenario three	Uncertain. May improve depending on new location and investment of government in relocation services

Projected Impact/Factors influenced by change in scenario	Scenario One; Business as Usual (How it is now March 2007)	Scenario Two; Promoting co-management	Scenario Three; The road to co-management	Scenario Four; Build that road alone	Scenario Five; Relocation
10. Livelihood (financial assets/access to credit)	Very little cash income as products sold in Boma and supplies bought in Boma. No business activities in village. No financial institutions or credit opportunities	May be possible to introduce village savings and loan scheme at local level. Emphasis on saving.	Opens possibility for credit facilities and increased level of cash income circulating in community	See scenario three	Uncertain. May improve depending on new location and investment of government in relocation services
11. Access to education/knowledge	Primary school and nobody goes to secondary school. Drop out level very high	Same as business as usual but some technical skill transfer to community on specific enterprise/IGA/forest management	Increases opportunity for transport development to schools and informal training opportunities	See scenario three	Uncertain. May improve depending on new location and investment of government in relocation services
12. Services (health clinic, schools, extension support, maize mill)	Few services (primary school, day health clinic, no clean water, no other extension services). No maize mill villagers one day to transport and grind maize outside of Chaone. No development support or projects	All services remain the same except for forestry who will need to provide intensive support at start of co-management implementation	Increases opportunity for service providers to move into Chaone. Maize mill business and maintenance of mill possible.	See scenario three	Uncertain. May improve depending on new location and investment of government in relocation services
Assessing Risk and Outlining Decision Making Framework					
Feasibility of Implementing Scenario/Implication of not changing scenario	No financial cost involved in keeping business as usual. Deforestation will increase over time resulting in decreased	Will need to post FA full time in Chaone Difficult to recruit FA for these conditions May be difficult to find appropriate	High Investment costs for building road itself Approval from FD for building road in reserve needed Forestry extension	High investment costs for building road itself including need to negotiate with FD. Forestry extension support more feasible	Highest cost of all scenarios. Will definitely donor support which may not be forthcoming based on

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	water supply, No service providers, investors/businessmen e.g. maize mill operators, grocery providers are interested in investing in Chaone.	IGA/enterprise with limited market opportunity and access Substantial time will be needed to establish meaningful trust with forestry department before meaningful engagement and change	support more feasible either through posting or frequent visits.	but villagers have limited land for their own tree resources and depend on reserve now.	contradiction with EU program. Will accentuate level of conflict between stakeholders rather than appease. FD may not be able to gazette and regenerate
The Communities "answer" or perspective on scenarios	Not happy and feel neglected except in lead up to elections.	Have stated that they are willing to negotiate on co-management of the resources and be actively involved in tree planting and regenerating the forest. However, there would be disappointment if road still not approved as service provision will still constrain livelihoods and especially service development.	Community will be satisfied and maybe more cooperative with interventions of assembly to improve livelihoods in area. Satisfaction will be in terms of both the road, livelihoods and improved security and access to forest resources	Community will be very satisfied with road but will not be engaged meaningfully in relation to forest use and protection. Own forest resources are scarce and they need access to reserve legally or illegally.	Completely opposed to this option. Chiefs have strong holds over area of customary land. and area has strong local history (first Boma for Zomba)
Mark the scenario/s which have the possibility of worse outcome than business as usual?				Worst scenario according to the group looking at the above analysis	Should be deleted as is unfeasible for implementation as decided by the group
Mark the scenarios that will cost the government more than the costs they are currently investing?			This is the most costly scenario in financial terms if compare to costs now but in long term may give best return		

Projected Impact/Factors influenced by change in scenario	Scenario One; Business as Usual (How it is now March 2007)	Scenario Two; Promoting co-management	Scenario Three; The road to co-management	Scenario Four; Build that road alone	Scenario Five; Relocation
Mark the scenario/s that will most probably negatively impact the forest resources?	This scenario was chosen as having the highest probable negative effect on forests				
Mark the scenario/s that will most likely improve livelihoods?			This scenario was chosen as having the highest guarantee of return or probability of success		
Mark the scenarios that will cost more but have the least guarantee of a certain improved level of return					Least guarantee of return as not feasible
Score the scenarios in terms of probability of success (0-5 where 5 is highest with reasons)	1	2	5	1	0

Based on the above analysis the planning taskforce and district steering group through their analysis concluded that the only scenario worse than business than usual is to just construct a road without any intervention of the forestry department to facilitate co-management. It was also considered unfeasible to relocate people. The best scenario with the highest possibility of long term success and return on investment was to intervene in road construction and also develop co-management agreements with the chaone community (scenario three).

