



PARTICIPATORY WATERSHED PLANNING - KABALE

**RWAMATE WATERSHED – KAGARAMA PARISH
BUBARE SUB-COUNTY**

INTRODUCTION

This report is in respect of the field work done in Rwamate watershed located in Kagarama parish, Bubare sub-county, Kabale district. The exercise was conducted with community members following training in Masaka

OBJECTIVES OF THE FIELD PRACTICUM

1. To enable the participants learn how to apply the various participatory survey and mapping techniques in a watershed.
2. To determine problems, issues and opportunities towards developing a community based integrated watershed management plan.
3. To develop the community - based integrated watershed management plan.

Members of the facilitating team

- Edison Hilman – DAO, Kabale
- Twebaze Jeniffer
- Tumuheirwe Honest
- Twinorusha Samuel Kahungu
- Kyokusiima Doreen

METHODOLOGY

- Methods used included the:
- Transect walk with community members
- GPS to mark points, expected to generate digital map
- Observation (Erosion, vegetation land use types and livelihoods)
- Photographs
- Questionnaires, Interviews
- Focus group discussion(FDG)
- Discussions and consensus generation with community members

PROCESS

The Planning process

The facilitating team started off by holding a planning meeting to chart a way forward on how to approach the communities and complete the task at hand. The plan prepared to undertake the task is presented below:

Sn	Objective	Activity	Time frame
1	To apply participatory assessment tools and mapping techniques learned from Participatory Watershed Training, including Land Degradation Assessment tools in the target TAMP micro-watersheds to: <ul style="list-style-type: none"> - Understand the watershed community, their resources, opportunities and problems - Identify and prioritize needs with the problem - Construct problem and objective trees and derive action plans 	Mobilization of communities, compilation of data collection tools, communication	Monday 23/04/2012
		Identify issues, problems and opportunities in the watershed; <ul style="list-style-type: none"> - Conduct FGD - Transect walk 	Tuesday 24/04/2012
		Participatory watershed analysis/data collection <ul style="list-style-type: none"> - Watershed characterization - Water and vegetation assessment - Soil and land use assessment - Livelihood assessment 	Wednesday 25/04/2012
		Data analysis and consolidation <ul style="list-style-type: none"> - Problem analysis, developing problem tree and objective tree 	Thursday 26/04/2012
		Documentation, digitizing community outputs, preparing presentations	Friday 27 /04/2012

3.2. Approach

A- Five member team of facilitators set out to complete the activity in the selected watershed. Mobilization was done through physical visit to the area following phone appointments which enabled the team to:

- Brief leadership of Farmer Field schools about the activity
- Agree on dates and venue for the activity
- Agree on number of community members to participate in the exercise

Decisions

When the exercise started, we were interrupted by a heavy down pour which altered our plan of work; we inevitably took decisions to ensure that work progresses. The heavy morning downpour also implied that farmer attendance was low, though many more arrived when the exercise was already going on.

- We shifted base to a nearby school, where we were able to get rooms for the different groups
- We made changes in the original plan to cover tools that did not require the open
- Each group member was allocated a tool with a corresponding group of key resource persons/key informants

Difficulties/Challenges

- Bad weather interrupted progress on days one and two

- Lack of resources to facilitate travel, stationery, refreshments and other logistics
- Tough terrain, especially during the transect walk, moreover on slippery ground
- Less manpower; it was necessary to have at least two facilitation members per community group to enable one to lead the discussion while the other records, this was not possible
- Little /Limited time, meant that all the tools /assessments could not be completed
- Lack of technical capacity in some areas (water analysis, soil analysis, vegetation identification, others)
- Other commitments by team members

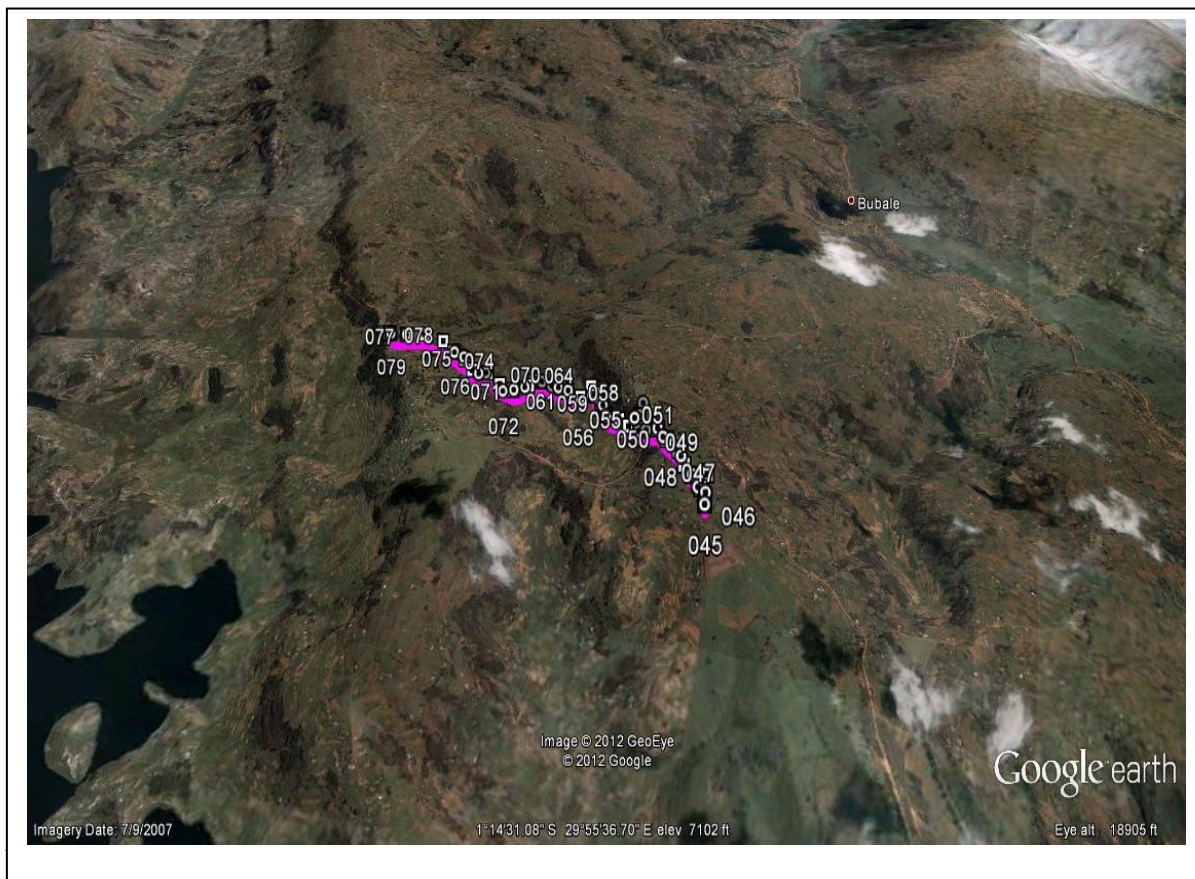
EXPECTED OUTPUTS BASED ON THE FIELD GUIDE

1. Community watershed map/Resource map
2. Data from Focused Group Discussion & interviews.
3. Transect walk map
4. Community problems & needs identified and prioritized

OUTPUTS FROM FIELD

Location of the watershed:

The watershed is located in Kagarama parish, Bubare sub-county. It covers four villages of Rwengwe, Hammurabi, Rwamate and Kyarujumba. The satellite picture shows the location of the watershed in relation to Kiruruma valley, the main Kagera tributary from Kabale.



The watershed map below shows settlement patterns and major agricultural activities in the area. It also shows areas of main degradation activity and community resources, including schools, church, water sources and grazing areas.



The transect walk:

In order to understand and validate status of the watershed communities, a transect walk was made to traverse the villages, where a number of observations were made. The path of the transect is superimposed on a satellite picture and represents the features in the watershed. In addition, the photo plates capture the type of degradation experienced in the area and some examples of good practices that need to be scaled up to improve sustainable land management.



Transect path across watershed



Photographs indicating degradation extent and SLM practices in the area.

Examples of degradation activity





Examples of good SLM practices



Bamboo domestication



Mounds reduce soil runoff

WATER AND VEGETATION RESOURCES ASSESMENT: RECENT CHANGES IN HYDROLOGICAL REGIME AND WATER SUPPLY

- Surface water runoff has reduced due to trainings from Africa 2000 network
- Peak flow /floods has reduced seasonally
- Base flow/dry season flow has increased due to deforestation
- Ground water recharge has reduced
- Soil moisture recharge has reduced
- Erosion and sediments has reduced

Drought/flood risk

- Droughts /floods occurs seasonally
- In the last 10 year droughts/floods increased due to deforestation
- The periods for drought are in the months of December, January, February, and March
- The months for floods are in September, October, November, and December
- Drought & floods cause famine because they reduce productivity thus increase poverty levels

CHANGES IN WATER QUALITY OF DIFFERENT WATER SOURCES AND THEIR CAUSES

Pathogens, nutrients and organic matter, pesticides and other persistent and organic pollutants have reduced because people no longer share water sources where by some community members used to defecate near or in the water source because they have built water harvesting tanks water jars at individual homes and others have tap <NWSC>or buy from reservoir tank of NWSC

CHANGES IN WATER AVAILABILITY

- Water availability has increased
- The community used to share one water source for consumption with livestock, community members have water jars or tanks almost per household where the harvest rain water during the wet season plus reservoir tank for NWSC where they buy water during the dry season
- During the wet season, the community obtain water from a dam where members harvest water for livestock and domestic use.
- However there is no equipment for determining water quality
- The water is not saline

Water resources



DISTANCE AND ACCESS TO WATER

- Water harvest in the wet season in water jars and tanks
- Tap water and reservoir tank for NWSC is about 1miles which take about 10minutes
- River 3miles 1hr used in the dry season for livestock water
- There has been a very big change in the last ten years
- Community members used to share one water source with livestock but with Diocese of Kigezi water and sanitation programme supported construction of jars and tank harvest water for clean water

MANAGEMENT AND WATER CHANGES AND CHAGES IN DEMAND

It was noted that one well dried up due to poor management. The committee was elected to manage water sources but no active, management not coordinated and everybody in our community has equal rights to water sources. Some members, especially the poor share water source with livestock

Soil and water conservation: Farmers are using techniques such as bench terraces but however adapting to graded ditches as well. Soil cover and mulching is also practiced on nursery beds

Water harvesting and utilization: the common types used include; Roof catchment is common for domestic use, Water jars, tanks, reservoir is common for domestic use. Dams are negligible for livestock use. Irrigating is not common with very minimal/little done for nursery beds

Constraints in water access: It was realized that water access is a challenge to the very poor people, a twenty liter jerican goes for 500 shillings which the poor cannot afford. There's a lot of conflict with livestock water users since many of the poor who cannot afford a jerican of water fetch water from the same water point with animals.

Impacts of Low water access

Productivity has reduced due to prolonged drought, pests and diseases, and loss of soil fertility which is in turn caused by runoff, over cultivation, soil shortage due to increasing population. Income reduced due to low productivity, poor health, and low prices in the market. Crop failure is very common and farmers believe that it is caused by pests and diseases. Health is poor due to poor nutrition and low income to meet medical bills. It was however observed that HIV infection rates are reducing

WATER POLICY LEGISLATIONS AND INSTITUTIONAL ASPECT: Members were encouraged and supported to have water harvesting, and almost each member of the community has a water tank or jar. Each member of the community is expected to participate in the construction a water jar or tank as the community contribution. As for rivers/streams there is no user guide and same water points are used for domestic as well as livestock usage.

INDICATORS OF VEGETATION STATUS/CONDITION IN FORESTS

Ground cover

- Cover by tree canopy is moderate 30%
- Cover by shrub is low 2%
- Cover littler is low 10%
- Cover by herbicides is low 4%
- Total summation 46%

Trees and shrubs species composition

The common tree species in the area include: Eucalyptus, Ficus, Pinus patula, while the common shrubs include; *Emishoroza*, *Emihanga*, *Eminaba*, *Ebiko*, *Ekishogashoga*, *Ebikondogolo*. Useful species and wood lots include: *Emibimbiri* used to make mats, *Emigashaja* for making mats, *Emishoroza* for baskets and crafts, *Ebiko* for traditional seats, *Ebikodogolo* for making traditional straws used for drinking local beer. Other benefits recognized by farmers include; fixation of nitrogen in the soil, Conservation of soil, protection the soil from soil erosion, keeping moisture in the soil and addition of manure in the soil. They are also used as food cover (Ebiko), as Medicine, grazing, wild food (enkyerere), charcoal and building Materials.

Changes in access:

- Human activities like man cutting them to make traditional sits, mats, for economic activities
- Effect of overpopulation leading to land clearing for production activities
- Wetland degradation
- Loss of soil fertility
- Poor management people don't care because they don't know the usefulness of these species
- Climatic changes e.g. prolonged drought

Wood productivity/growth: Average tree height was 20m, Diameter at breast height 5-10 and average age of planted tree 20 years. It was noted that management practices are still very poor. The

community recognizes that Burning and grazing in trees woodlots without the knowledge of the owner attracts payment of fine, though it is not well documented.

Farmers calendar of activities

MONHTS	RIANFALL	TEMPERATURE	ACTIVITIES
Jan	X		Primary cultivation of sorghum harvesting for the second season
Feb	X		Planting sorghum
March	X		Planting sorghum
April	x		Weeding, Primary cultivation of beans and sweet potatoes
May		x	Secondary cultivation of beans and sweet potatoes
June		x	Handcraft making
July		x	Weeding
August		x	Harvesting
September	x		Primary cultivation for the second season
October	x		Secondary cultivation
November	x		Weeding
December	x		Harvesting

Other community Characteristics

Attribute	<ul style="list-style-type: none"> • Characteristics/Status
Water sources	<ul style="list-style-type: none"> • Water harvest tank, Water jars
Water use	<ul style="list-style-type: none"> • Drinking, Livestock, Irrigation nursery beds
Challenges in water access/utilization	<ul style="list-style-type: none"> • Stealing of water, Water is expensive in the dry season 500 Shillings per jerican, Long distance the nearest in the dry season is long
Recent changes	<ul style="list-style-type: none"> • Poor management by the community, Increased accessibility, Some wells have dried up
Average land ownership	<ul style="list-style-type: none"> • 7.5acres of land used for crop, woodlot, pasture, follow
Ownership change	<ul style="list-style-type: none"> • Family sharing land is passed on from generation to generation, Selling /disposal is was free, buying
Household uses for each crop type	<ul style="list-style-type: none"> • Crops are grown for home consumption surplus for sale example, Sorghum, Beans, Sweet potatoes, Irish potatoes, Fruits • The family has 1 cow, When livestock increases they sell and get school fees for the children
Constraint to vegetation	<ul style="list-style-type: none"> • Human activities to leads cutting down of vegetation due shortage of land, Soil erosion carrying soil fertility Changes land degradation
Causes soil erosion	<ul style="list-style-type: none"> • Poor methods of farming, Free range farming, Poor farming practices
Impact of Soil erosion	<ul style="list-style-type: none"> • Food security, Poverty, Loss of soil fertility

Quality of the cropping land	<ul style="list-style-type: none"> • Poor soils which are less productive, Woodlot and pasture are not well managed, Grazing land is not good
Main type of land degradation	<ul style="list-style-type: none"> • Soil erosion, Soil loss –run off water, Reduced amount of vegetation, Loss of palatable species
Obstacles to SLM implementation	<ul style="list-style-type: none"> • Limited labour, Limited capital, Limited equipment, Low knowledge and skills
Main sources of finance/ income	<ul style="list-style-type: none"> • Crop and animal sale, Forest products, Salary, remittances from relatives
Income used for	<ul style="list-style-type: none"> • Meeting basic necessities at home, Buying land, Paying fees for children
How the household relies on each other	<ul style="list-style-type: none"> • Husband earns income/salary, Wife does farming, children provide labor
Crises experienced that improve vulnerability	<ul style="list-style-type: none"> • Poor health, Poverty, Food insecurity, Crop failure, Drought
Main changes in land degradation	<ul style="list-style-type: none"> • Land shortage, Poor soil/loss of soil fertility by water-run off, Vegetation loss e.g. Shrubs which were useful for herbs disappearing

Water shed characterization

- The most important land use types are;
 - crop land,
 - woodlots and
 - Grazing land.
- Crops mostly grown are:
 - sorghum,
 - beans,
 - sweet potato,
 - Irish potato
 - Peas and maize.
 - Woodlots are mainly of eucalyptus and free range grazing is a common practice.
- The main livelihood/production activities during the rainy season are:
 - Cultivation of the above mentioned crops and grazing of animals.
- During the dry season,
 - hand craft making,
 - harvesting of crops and
 - sand extraction
- The main natural resources the community uses for production /livelihoods are:
 - medicinal plants,
 - fuel wood and
 - Grazing land.
- The most important types of land degradation in the area are:
 - deforestation,
 - free range grazing

- poor methods of cultivation,
- poor farming methods and
- Soil erosion.
- The main causes of land degradation are:
 - ignorance,
 - limited land and
 - Poor implementation of bye laws on natural resource management.

Bad practices



- There are conflicts in relation to land and water uses in the area they include:
 - Going beyond ones boundaries while cultivating,
 - grazing in other peoples lands and
 - Fighting at the wells (used by many people and there is scramble for water), especially during the dry spells.
- Livestock rearing is by free range and this has caused severe loss of vegetation and consequently soil erosion
- Main livelihood problems include:
 - food insecurity,
 - poverty,
 - poor access to markets and
 - Diseases.
- Interventions that have gone beyond a focus on productivity to address wider ecosystem services are:
 - training on sustainable land management by Africa 2000 net work,
 - water catchment/ harvesting by Kigezi Diocese water and sanitation and
 - promotion of tree planting and natural resource conservation by *Excel Hort consult.*
- There are no organizations that affect the way land is managed in the community. Individuals grow what they think benefits them but on the other hand the system promotes theft and attack by pests since the gardens are isolated and promotes land degradation.

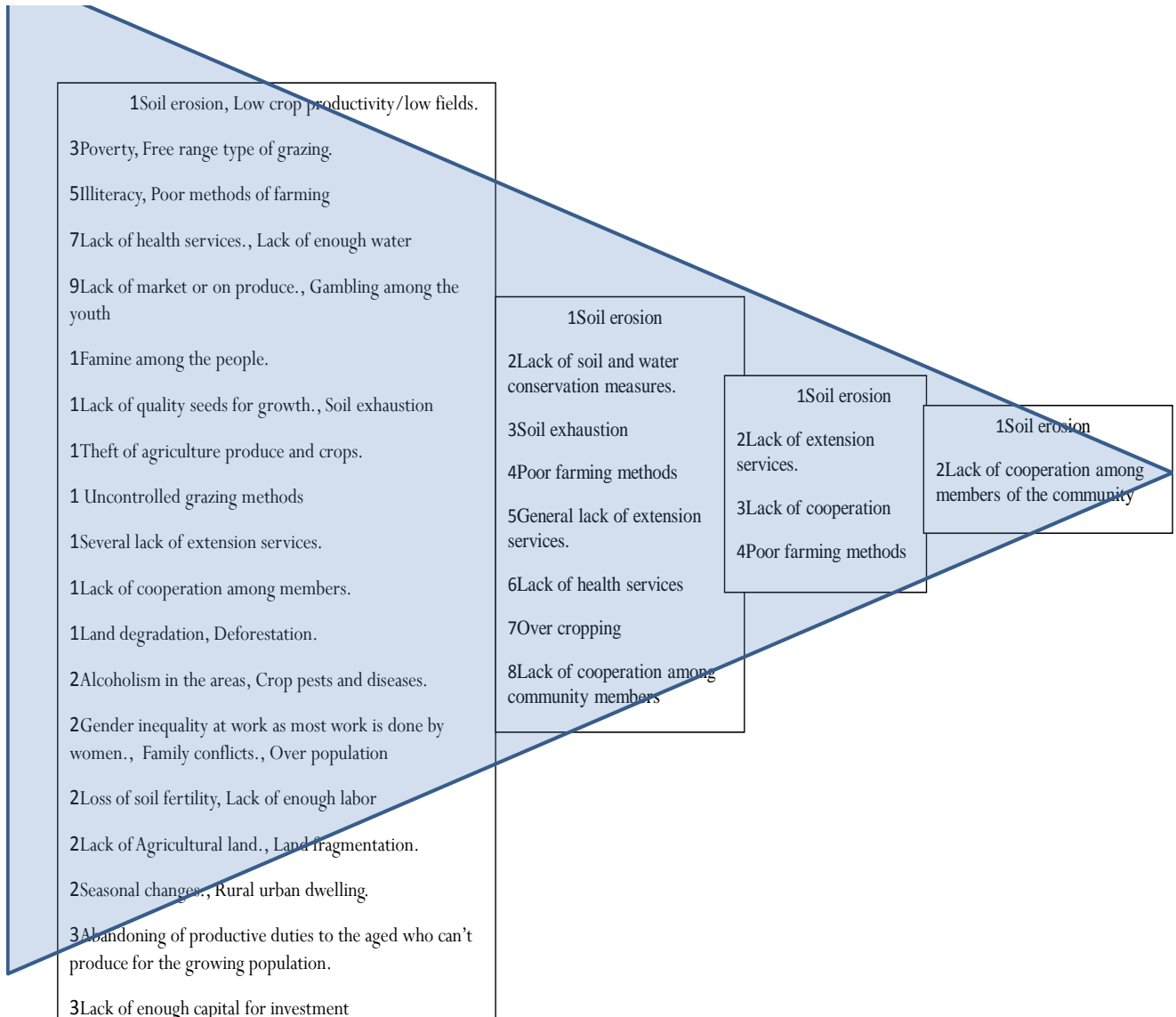
- Land in the area belongs to the people and have all the rights over it
- Existing laws, rules and regulations are poorly implemented and are not helping at all.
- The major social divisions in terms of poverty/wealth are;
 - o Poor, medium and rich.
 - o The poor have very small land holdings i.e. one acre and below while the medium and rich have from two acres and above.
 - o Consequently the poor usually go subsistence while the other ones go commercial.

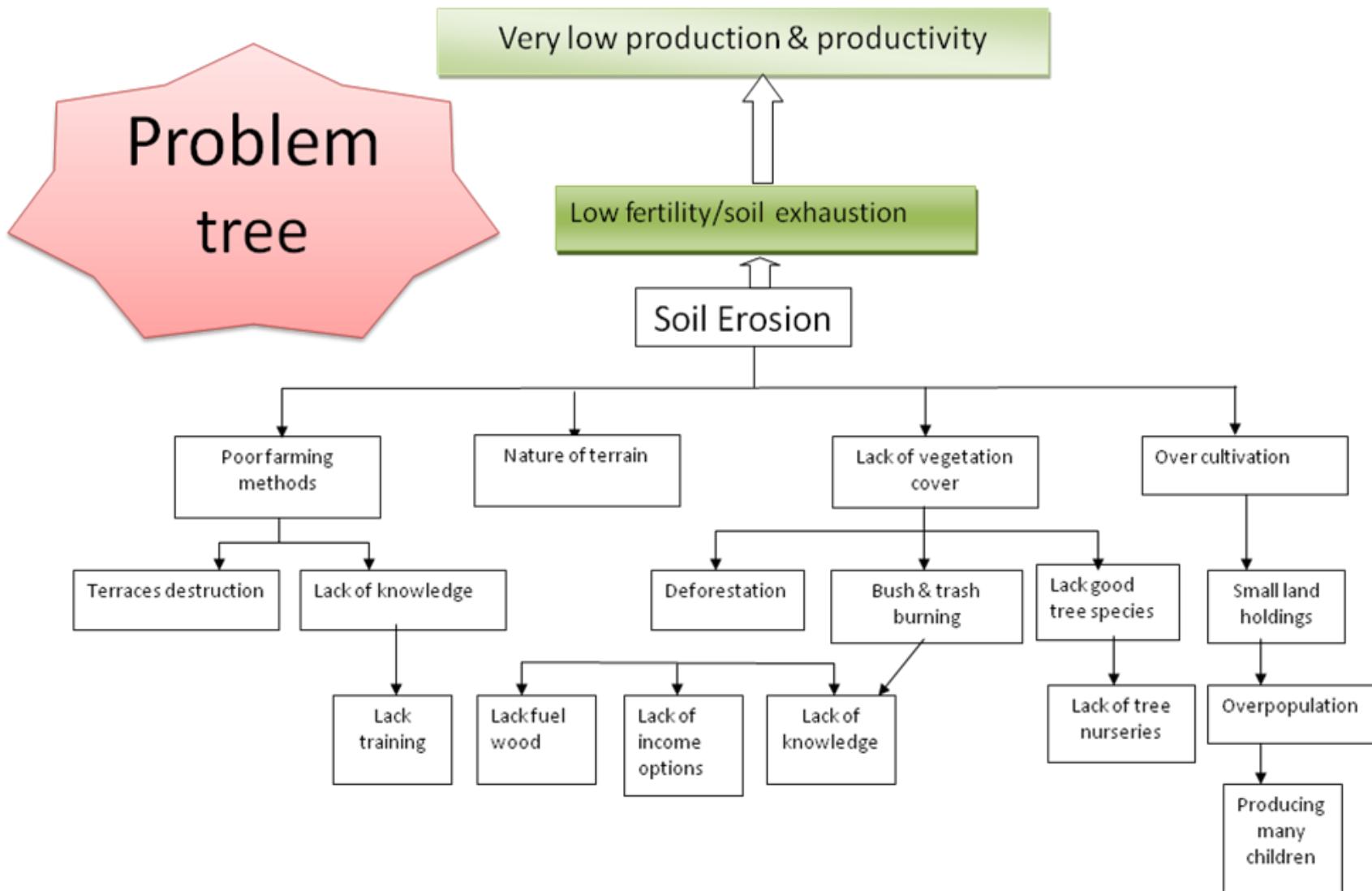
WEALTH RANKING TOOL

- Key indicators for the three main (relative) wealth groups i.e. better off, medium and rich identified with the community in order of importance are:
 - o land size,
 - o type of house,
 - o number of livestock,
 - o education level,
 - o social assets

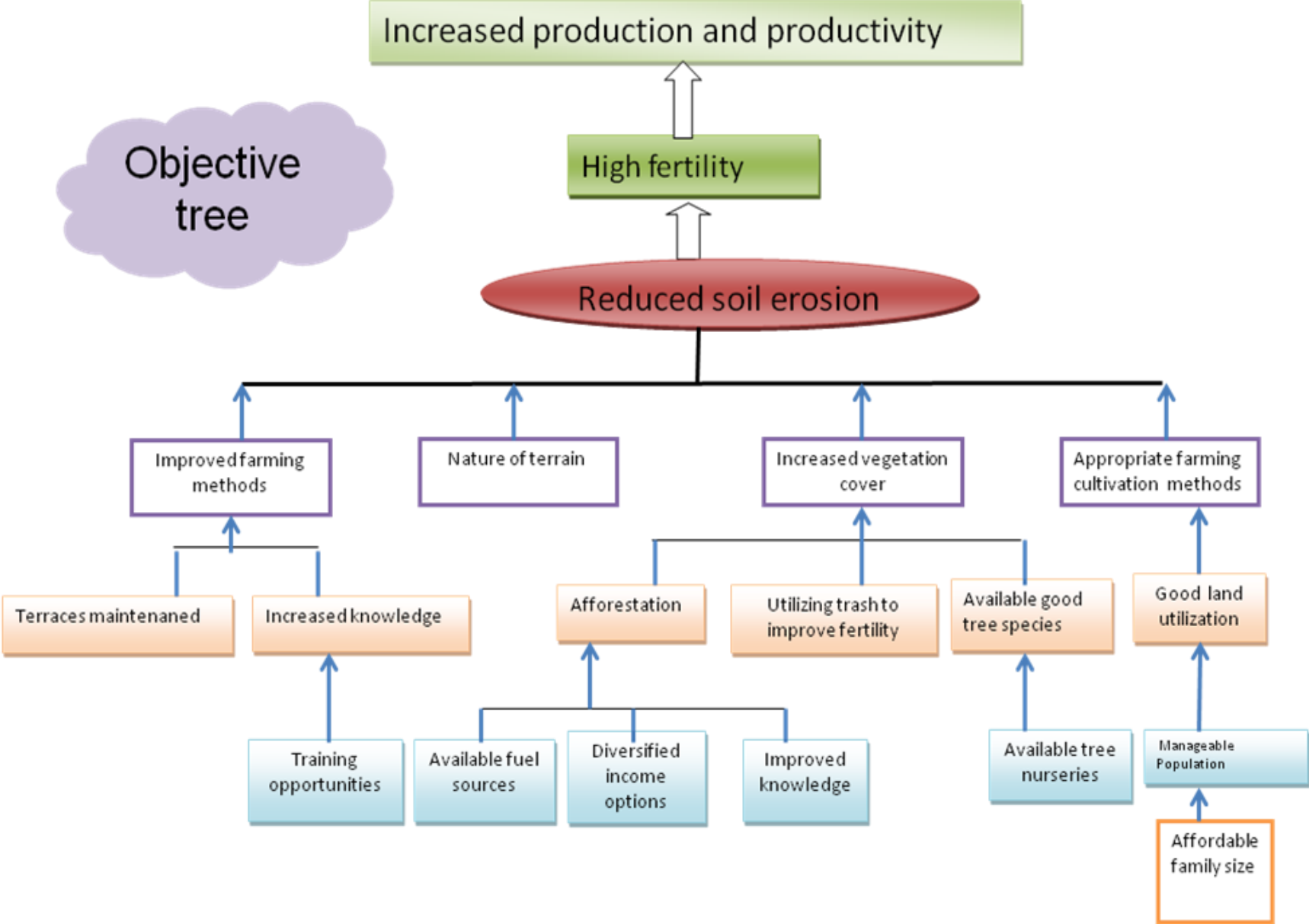
Situational Analysis

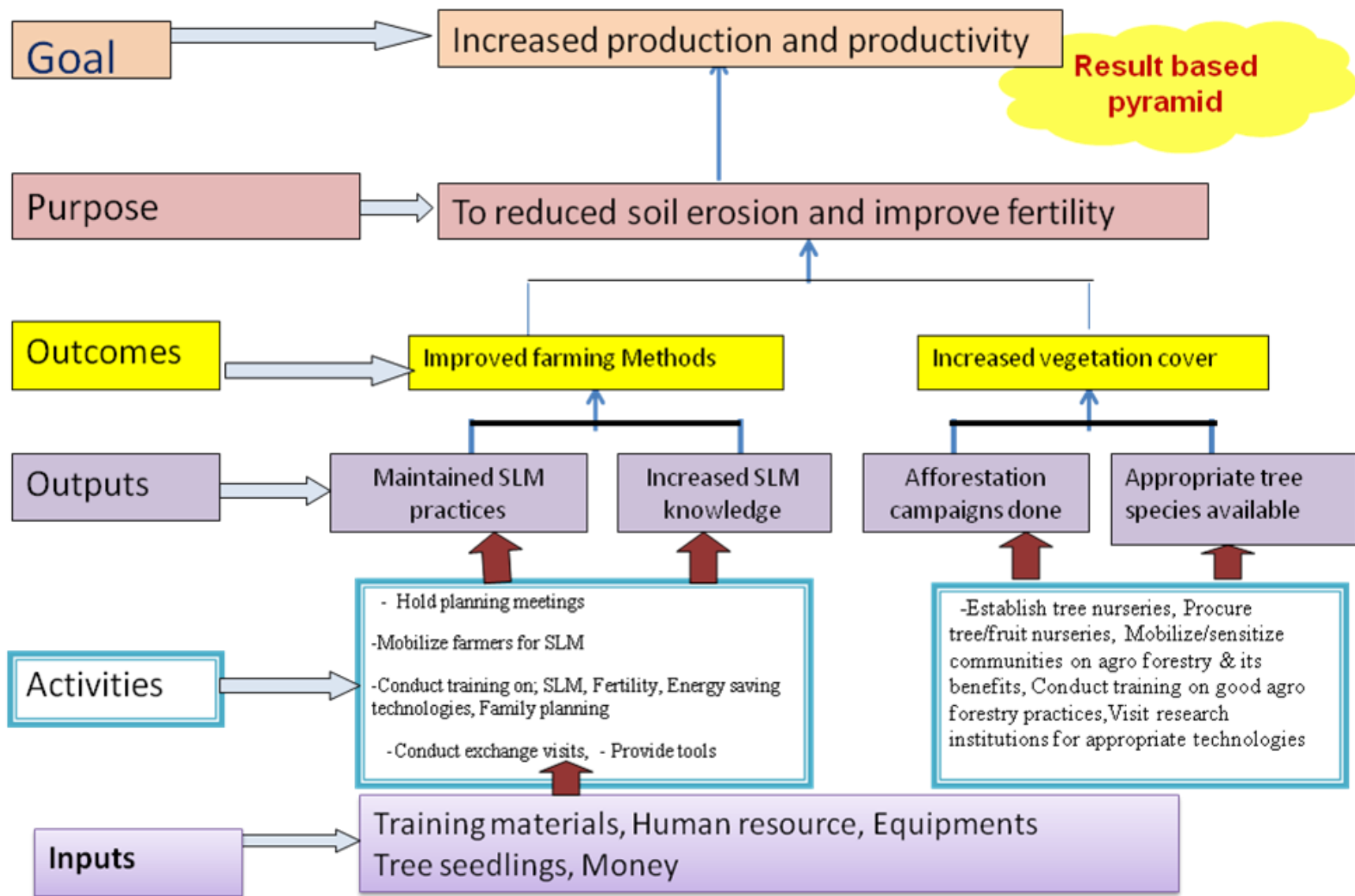
The community was guided to identify key problems that are related to reduced productivity and degradation. The wedge method and problem tree analysis were used to analyze the problems and come out with the core problem, which was analyzed to understand the root causes. This analysis would guide in developing the objective tree and then an action plan for the generated objectives and activities. Outputs of the wedge analysis and problem tree are indicated below.





Objective tree





STRATEGY ANALYSIS FOR RWAMATE WATERSHED

Project objective	What would go wrong	Probability (L/M/H)	Seriousness (L/M/H)	Possible causes	Preventive measures	Indicators
Improved methods of farming	-Land shortage	H	H	-Rapid population growth	-Birth control measures	-No. of couples sensitized
	Inadequate improved farm inputs such as breeds and seed	M	H	- Few stockists for improved breeds and seeds -Inadequate extension services	-Training more stockists -Facilitate extension workers	-No. of stockists trained - New stockists -No. of visits made by extension workers
	-Pests and diseases	L	M	-Inadequate capital for pesticides and farm equipment	Farmers to join SACCOs	No. of farmers in SACCOs Amount of funds dispatched
	-Natural calamities	L	H	-Land degradation -Heavy rains and drought-	-Training in SLM	-No. of trainings held -No of farmers trained
Increased SLM knowledge	-Lack of equipment	H	H	-Lack of capital	-Farmers to join SACCOs	-No. of farmers in SACCOs
	-Community resistance	M	H	-Inadequate awareness	-Community mobilization and sensitization	No. of farmers participating
	-limited labour	M	M	-Community not cooperative/ no collective action	-Community mobilization and sensitization	Group demos established
Conduct trainings on SLM	-Inadequate funds	M	H	-Limited capacity to co-finance	-Farmer groups to have a culture of saving	No. of farmer groups with saving and credit scheme
	-Low turn up of farmers	M	H	- Social and farm Responsibilities	Plan with communities	
	-Poor time management	M	H	Poor mindsets	Mindset orientation integrated in planning and trainings	Mindset content disseminated

LOGICAL FRAME-WORK MATRIX

Project description	Indicators	Source of verification	Assumptions
Outcome Improved methods of farming	-Improved yields -Reduced erosion	-Farm records -Reports -Surveys	-Quality agricultural inputs readily available -Availability of funds for training, supervision and monitoring - Farmers to commit their time to project led activities
Out put Increased SLM knowledge	No. of farmers/community members implementing SLM practices	-Reports -Observations - Field visits	-Equipment availability -Community willingness to work together - Un interrupted availability of funds to support trainings
Activities -Training in SLM, fertility and energy saving technologies -Mobilization and sensitization of community on SLM -Demonstrating SLM practices -Exchange visits	-No. of farmers trained -No. of trainings conducted -No. of FFS formed -No. of community members sensitized No. of demonstration sites in place -No. of participants -No. of exchange visits made	-Training/sensitization reports -Site spot visits -Reports -Farmers' records	-Funds available to facilitate activities -Community will and interest -Community members able to sustain the project -Funds available

PPME MATRIX FOR RWAMATE WATER SHED

Project objectives	What are the M&E questions	M&E indicators	Base line data needed
Goal 1. Farmers in Rwamate watershed to have increased production and productivity	What is the contribution of SLM activities towards increased productivity in Rwamate watershed?	-No of granaries constructed -No. of marketing associations formed -No. of collecting centres established -Bank accounts opened	-Yields per unit area -Quantities of food going to the market -No. of children Types of housing units
Purpose 2. Increasing yields	-How is the well fare of the people? -What are the qualities of inputs used?	-Quantity and quality of produce -No. of farmers seeking markets	-Quantity going to the market -Different types of produce -Prices in the market -Traders flocking the watershed
Outcomes 3. (i) Improved methods of farming	-How are they achieved? -What are the types of SLM practices that will be employed?	-SLM practices in place -increased yields -Reduced erosion	-Type of farming methods
(ii) Increased vegetation cover	-Are there changes in vegetation cover? -What brought about the changes? -Which changes have occurred	-No. of acres of land occupied by wood lots -% of land covered with vegetation -New Plant species introduced	- Plant species in existence
Outputs 4. (i) Increased SLM knowledge	-What are the SLM practices that have been adopted?	-No. and type of SLM technologies in place -No. of gullies rehabilitated	-Existing SLM practices -Soil fertility levels -Soil erosion levels
(ii) Maintained SLM practices	-What are the different SLM practices implemented? -What strategies were employed to maintain the practices?	-No. of households with SLM practices -No. and % age of SLM practices (by type)	-households practicing
(iii) Campaigns/trainings conducted done	-How many Afforestation campaigns were conducted? -How was the participation?	-No. of campaigns conducted -No. of participants	-land acreage planted with trees
(iv) Appropriate tree species available	What are the types of tree species introduced? How much acreage of land has been	-Acreage of land planted -No. and types of trees planted	-Available types and numbers

	planted?		
Activities			
5. (i) Training in SLM practices	- How many community members/farmers have been trained? -What topics have been covered?	-No. of community members/ farmers trained -Reports -No. of trainings	-Existing number of farmers with skills on SLM practices
(ii) Mobilization and sensitization	-Are the communities sensitized on SLM practices?	-No. of sensitization meetings -No. of radio talk shows conducted	-No. of farmers with knowledge on SLM practices
(iii) Demonstrating SLM practices and technologies	-What are SLM practices implemented?	-No. of demonstration sites -Types of technologies demonstrated -No. of households with SLM technologies	Practices of SLM demonstrated

Observations:

- The terrain is very prone to degradation
- Many households not implementing SLM activities
- There is very limited area for livestock
- There are many conflicts over water usage
- Community lack communal approach towards SLM
- The site is a good choice for SLM activities
- Team should be facilitated to complete activity, and similar work on other watersheds
- Need more skills in developing better maps
- Need to identify experts /or provide skills in areas of soil and water analysis, mapping
- Communities should join the FFS to learn a wide range of SLM and livelihood skills

