

**KATOGENRO INTEGRATED MICRO  
WATERSHED MANAGEMENT  
KYEBE SUB COUNTY, RAKAI  
DISTRICT UGANDA  
KAGERA RIVER BASIN**

**A PROPOSAL**

# Watershed Management Group Members

- 1. Kennedy (Nigeria)
- 2. Lira (Kyrgyzstan)
- 3. Rongkun (China)
- 4. Najib (Yemen)
- 5. Jamyang (Bhutan)
- 6. Eleni (Ethiopia)
- 7. Orijabo (Uganda)

# Presentation Outline

- General background of Kagera River Basin
  - Problems, challenges and needs
- Katogenro Micro watershed plan/ proposal
  - Situational analysis
  - Problem Tree
  - Objective Tree
  - Action Plan
  - M&E
  - Institutional Arrangement

# FAO Transboundary AgroEcosystem Management Project (TAMP)

# Kagera River Basin:

- 4 countries share the basin
- 16.5 million people (in 2006) mainly depending on agriculture
- Area 59,700 km<sup>2</sup>
- Av. density: (~270 persons/ km<sup>2</sup>)
- 24% of inflow into Lake Victoria
- Most upstream tributaries of the Nile



République du Burundi



Republic of Rwanda



The United Republic of Tanzania (en)



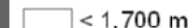
Republic of Uganda

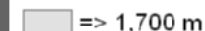


## Legend

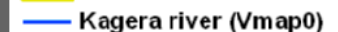
GTOPO30 (USGS)

Value

 < 1,700 m

 => 1,700 m

 National boundaries (GAUL)

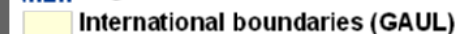
 Kagera river (Vmap0)

 Main rivers (Vmap0)

 Streams (Vmap0)

 Lakes

 Kagera watershed

 International boundaries (GAUL)

# General Challenges in the Basin

- Poverty
- Population Explosion (270 people/  
Square kilometer)
- **Environmental Degradation**
- Diseases (HIV/ AIDS)
- Conflicts
- Climate variability

# Kagera Basin is under massive environmental stress



Main sources of stress impacting the Kagera River Basin have been identified:

- **Stresses within the river Basin**– e.g., untreated wastes, water hyacinth, unrecorded abstraction of water from the river
- **Stresses on littoral zones** – e.g. construction and farming on the river banks, conversion of wetlands, poor solid wastes management



• **Stresses from the basin** – e.g. land degradation, deforestation, inflow of water hyacinth, pollution from agro-chemicals, sediment loads, poor solid waste management

• **Population pressure:** highest demographic growth and fertility rate in Sub-Saharan Africa





## **Other river uses**

Sand Mining along the  
Right bank of River  
Mwogo, Rwanda





# General needs of the Kagera River Basin

SI	Levels	Needs
1	Farm Level	To maintain productivity
		To increase household food & nutrition security
		To reduce risks of production failure
		To household resilience to change/shocks
2	Community	To improve management of individual and common property resources;
		To provide for changing/increasing needs of the community /society (food security, water, energy, products ; income...) in the face of CC ; market forces; demographics, ...)
		To maintain the range of ecosystem services
		To sustain resource base and promote rural development

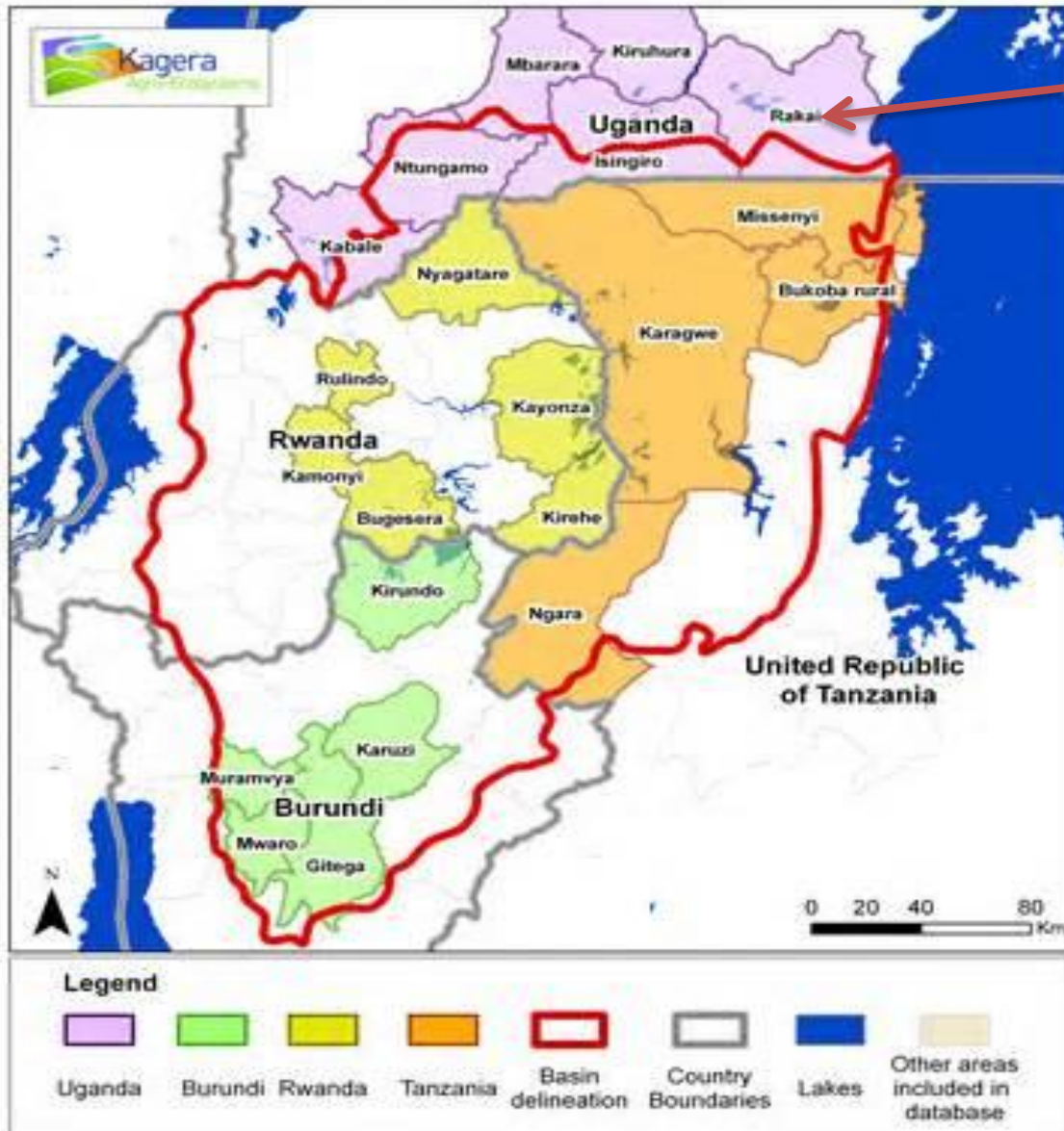
# General Needs of Kagera River Basin

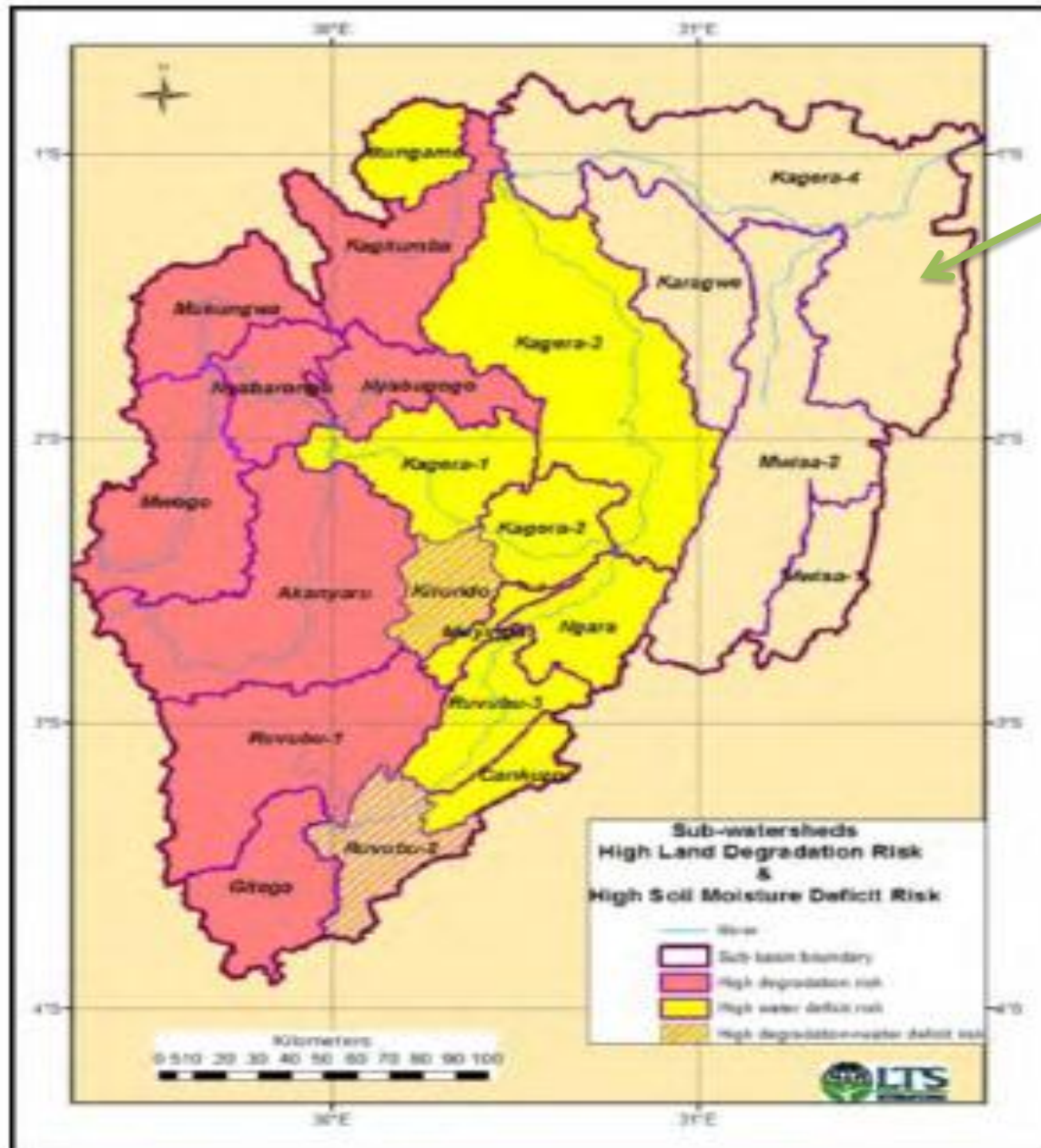
SI	Levels	Needs
3	Watershed Level	To address aggregated effects of climate change and variability (temperature, precipitation, storms, floods, droughts) and land use and management practices
	Governance	To provide an enabling environment for sustainable watershed management
		To reduce risk/vulnerability of populations and infrastructure

**THE KATOGENRO MICRO-WATERSHED  
AS THE UNIT FOR PLANNING AND  
IMPLEMENTING PILOT WATERSHED  
MANAGEMENT INTERVENTION**

# Kagera basin and TAMP project areas

Katogenro  
Micro-  
watershed



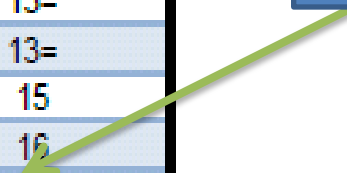


Katogenro  
Micro-  
watershed



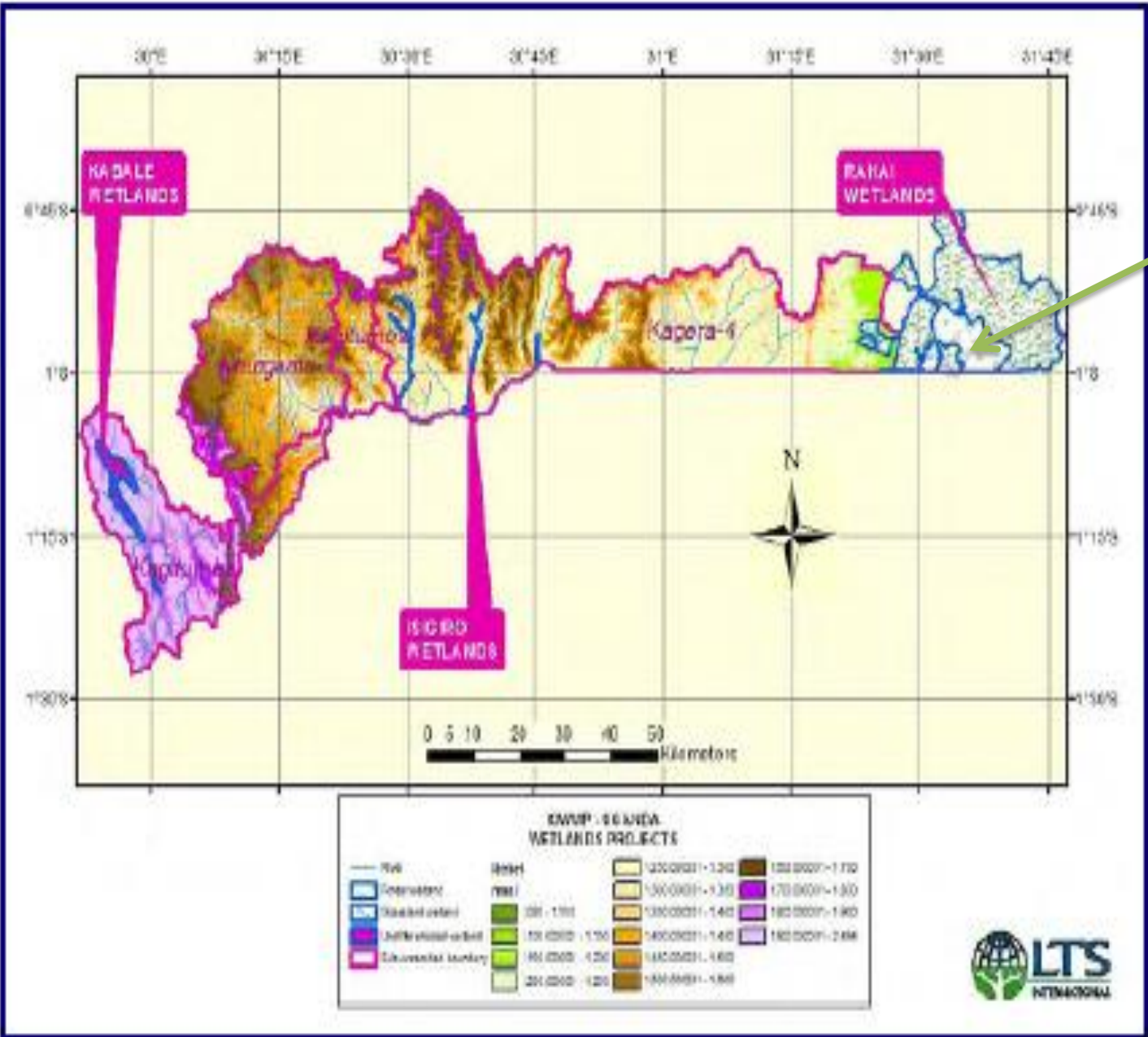
Sub-Watershed	Population Densi	Soil Erosion	Land Degradat	Land Degradati
rank 1 =	Highest density = 1	Most at risk = 1	Composite	Ranking
NYABARONGO	2	1	3	1=
MUKUNGWA	1	2	3	1=
AKANYARU	4	4	8	3
NYABUGOGO	3	7	10	4
GITEGA	7	4	11	5
RUVUBU 1	6	6	12	6
MWOGO	10	3	13	7
KIRUNDO	5	12	17	8=
RUVUBU 2	8	9	17	8=
KAGITUMBA	9	10	19	10
RUVUBU 3	8	14	22	11
CANKUZO	15	8	23	12
MUYINGA	13	13	26	13=
KAGERA 2	12	14	26	13=
KAGERA 1	16	11	27	15
NTUNGAMO	14	14	28	16
KAGERA 4	17	16	33	17
MWISA 1	22	17	39	18
MWISA 2	18	21	39	18
KAGERA 3	21	19	40	20
NGARA	19	22	41	21
KARAGWE	22	20	42	22

Katogenro  
Micro-  
watershed





Katogenro  
Micro-  
watershed







# TREND ANALYSIS



Trend Issues	Change between 1985/90 and 2005/10 as perceived by the community (%)
Crop production	- 75%
	- 75%
Livestock	+ 800%
Water	- 50%
Wood Fuel	- 80%
Wetland encroachment	+ 600%
Soil Erosion	+ 75%

# KAIONGERO WATERSHED TRAVERSE-ANALYSIS

	HIGH HILLSIDE	PLAIN	LOW HILLSIDE	CANA BROOK	WETLAND
<b>SOIL</b>	Poor, rock	Loose, many m	Red clay earth	Clay,	Fertile Silt
<b>WATER</b>	Very dry	Fresh	Dry	Available all year round * Wells	Available all year round
<b>CROPS</b>	Pasture land shrubs	Bananas Coffee Cassava	Bananas Coffee	Forests Sweet potatoes Cabbages	Maize Papyrus US plants
<b>WHAT WAS DONE BEFORE</b>	There was forests, good pasture	- Fertile soils - Less crop diseases - Less vermin	- Fertile soils - Less animal diseases - Less vermin	- Much water - More animal habitats	- More floods - More fish varieties
<b>OPPORTUNITIES</b>	Quarrying Paddock Afforestation Tourism (2nd world)	Afforestation Banana production Coffee	Habitat Siting	Afforestation	Eco-tourism Fishing Water for irrigation

# KATONGERO WATERSHED MAP



# Photos



# Photos



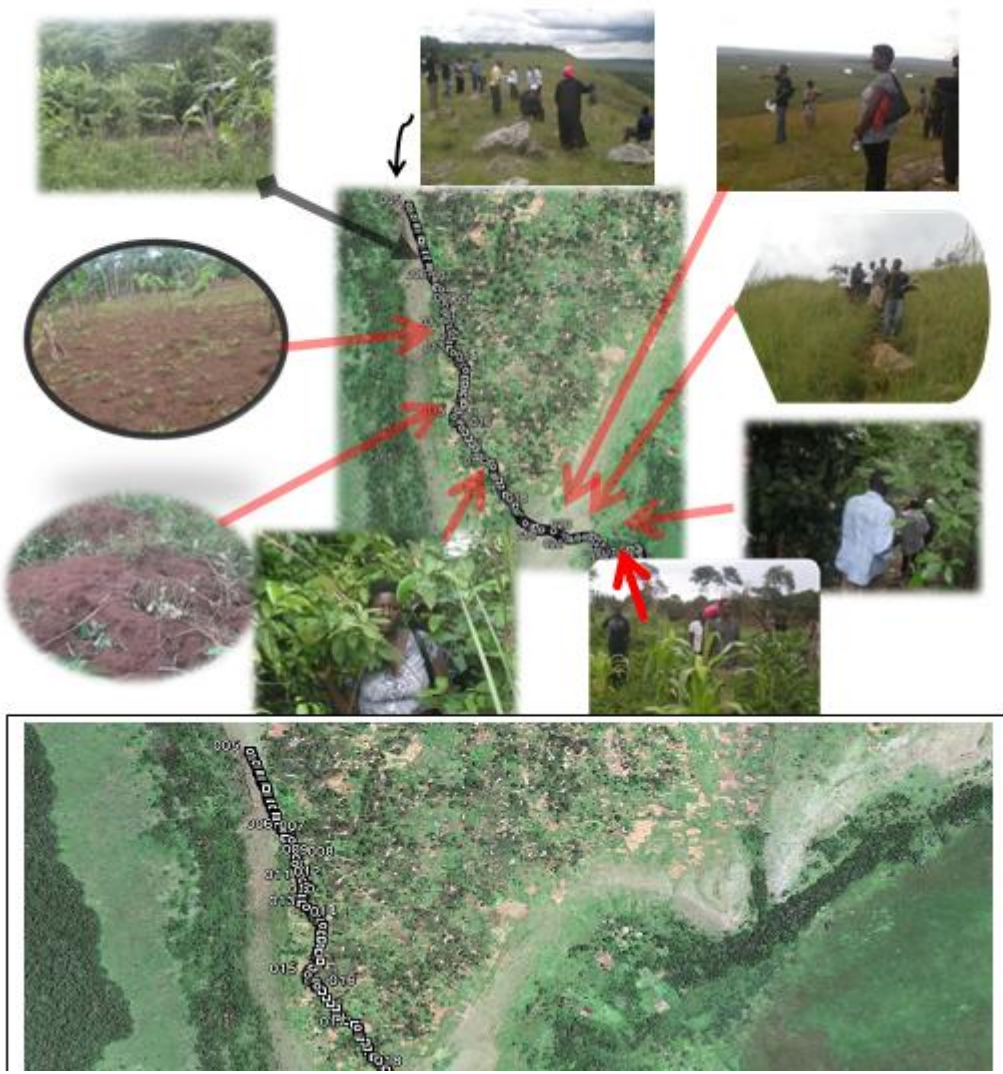


# Photos



**Crises faced by the Households in the last 10 years, and impacts/ effects on natural resources and land mgt**

<b>Crises</b>	<b>When</b>	<b>Impacts</b>
Drought	1997,2005	There was famine and animal deaths, schools closed before terms ended, babies became malnourished.
Food Insecurity	2010,2011 & 2012	There was famine and animal deaths, schools closed before terms ended, babies became malnourished. The food insecurity has been caused by crop diseases eg BBW
Crop Failure	2010,2011 & 2012	There was famine and animal deaths, schools closed before terms ended, babies became malnourished. The food insecurity has been caused by crop diseases eg BBW and Vermin
Livestock losses	1997, 2005 and 2000	Reduced incomes
Natural Disasters	2009	Strong wind breaks which destroyed crops and trees
Health Problems	1986	HIV and Malaria which killed people and reduced labor
War/ Conflict	-	-
Migration		Seasonal cattle migration, overgrazing



THE TRANSECT TRACK

## Community wealth class

SI	Classes	No. of HH	%	
1	Rich	9	3	
2	Middle	144	48	
3	<b>Poor</b>	<b>124</b>	<b>42</b>	<b>Specify livelihood groups, who are men, women, child headed households, etc</b>
4	<b>Very Poor</b>	<b>21</b>	<b>7</b>	
<b>Total</b>		<b>300</b>	<b>100</b>	

## Main land use types in the watershed.

SI	Land use type	Proportion of total watershed area
1	Settlement and cropland	2 square km
2	Grazing land	0.4 sq km
3	Forest	1.6 sq km
4	Wetland and fishing	1.0sq km
<b>Total</b>		<b>4.5 square km.</b>



**More challenges**



**Poor farm practices**



# PROBLEM ANALYSIS AND ACTION PLAN

# MONITORING AND EVALUATION