

Equitable Payment for Watershed Services (EPWS) A CARE/WWF Programme

**Overview and Experience Sharing
during**

**KAGERA TAMP-REGIONAL TECHNICAL WORKSHOP ON
LAND PLANNING AND MANAGEMENT**

at

WHITE HORSE INN, KABALE, UGANDA

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CARE International
in Tanzania**



Contents of the Presentation of EPWS program

- Background,
 - PES/PWS introduction
 - EPWS program background
- Project site and its issues
- Initiatives to solve the issues,
- Achievements, Outcomes and Success stories
- Challenges
- Lessons learned
- Sustainability

Who are engaged in implementing EPWS programme

- CARE and WWF Tanzania
- Local Communities
- Department of Land Use Planning of Ministry of Agriculture, Food and Cooperative
- SUA through UMADEP
- Wami-Ruvu Basin Water Office
- Uluguru Nature Reserve
- Morogoro District Council
- Various scientist including:
 - Prof. P. Munishi, Prof. P. Yanda, Dr. G. Kahyarara, Mr. S. Joseph, Mr. J. Nsenga and Mr. H. Kayeye

Introduction.

- This presentation is mainly for sharing CARE-WWF EPWS Programme's initiative in establishing Payments mechanism for conserving natural resources in Uluguru Mts, Tanzania
- The programme started in 2006 and will end in December 2012

What is EPWS?

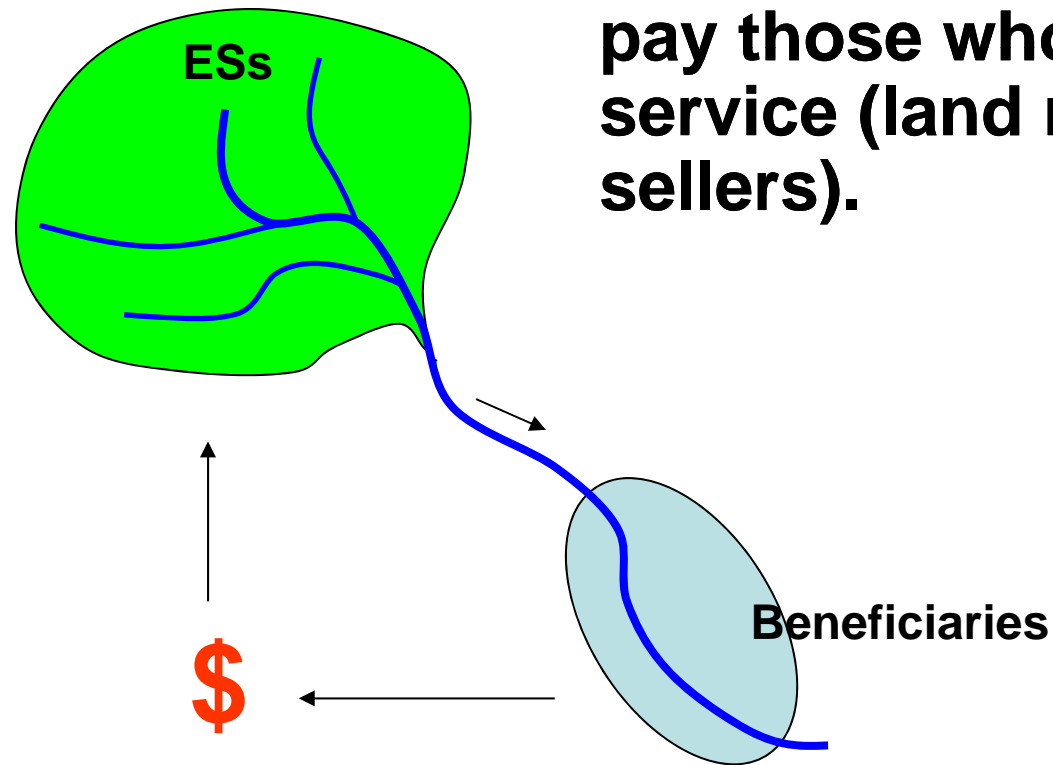
- PWS is a financial management instrument originating from the broader term-PES
- Env. Services (ESs)-Natural benefits that the natural world provide to people
- Always taken for granted - GIFT of nature/"open access resources"
 - carbon sequestration, watershed services, landscape beauty & biodiversity

Undelying principle of PES/PWS

- Beneficiaries of EPWS have to compensate financially the stewards of the ecosystem/watershed services

The basic principle of PES....

- Those who use the ecosystem service (beneficiaries or buyers) pay those who provide the service (land managers or sellers).



Essentially, PES is.....

- A voluntary transaction where,
- A well defined ecosystem service (or landuse that is likely to secure that service)
- Is being bought by a minimum of one buyer
- From at least one provider
- If and only if the provider secures the service (conditionality / contingency)

Who are the buyers?

- National governments
 - ✓ China 'sloping lands conversion programme'
- Private companies
 - ✓ Nestle, Vittel Valley France
- Water utilities / municipalities
 - ✓ City of New York
- 60% of the payments are from private sector.

Who are the sellers?

- Large scale commercial farmers
 - ✓ Landowners in New York State
 - ✓ Land holders in Vittel Valley France
 - ✓ Some landholders in Costa Rica
- Small scale commercial farmers
 - ✓ Landholders in Bolivia (Los Negros)
 - ✓ Landholders in Honduras (Jesus de Otoro)
 - ✓ Land holders in El Salvador (Yamabal)

What is being bought/sold: Changes in service quality and quantity. How?

Changing production practices

- conservation agriculture
- agro-forestry
- silvo-pastoral



Changing land uses:

- reforestation
- Applications of terraces



- ## Not Changing land use
- reducing deforestation



Background of EPWS prog.

- EPWS is a global programme currently implemented in Guatemala, Peru, Indonesia, Kenya and Tanzania
 - supported by DGIS and DANIDA
- EPWS is
 - Taken as one of number of natural conservation instruments
 - Additional source of defending access or property claims through regulating natural resource uses
 - Efficient solution - if they outweigh all the transaction costs
 - Equitable solution – if those bearing costs are compensated
 - Effective solution – if they complement regulatory approaches
- It uses Business - Case Approach

What is Business Case (BC)?

- It is a tool for synthesizing and drawing together analyses within one value based framework
- It is formulated to help management to make decisions by local managers, national managers, executive boards etc
- BC creates condition for entering into agreement by signing an MoU or Contract

Background cont...

EPWS is has been designed to be implemented in phase

- The Phase 1: Feasibility assessment (June 2006 to Sept 2007)
 - Gathering knowledge to structure the new market for WS
 - Building a business case for investment through justifiable “business criteria”
- The Phase 2:
 - To establish markets for WS in trial sub-catchments as an effective natural resource management tool
 - April 2008 to December 2011
 - With a total budget of 1.3 million Euros

EPWS Objectives



- To modify unsustainable land use to conserve and improve “watersheds” for reliable supply/flow and quality of water

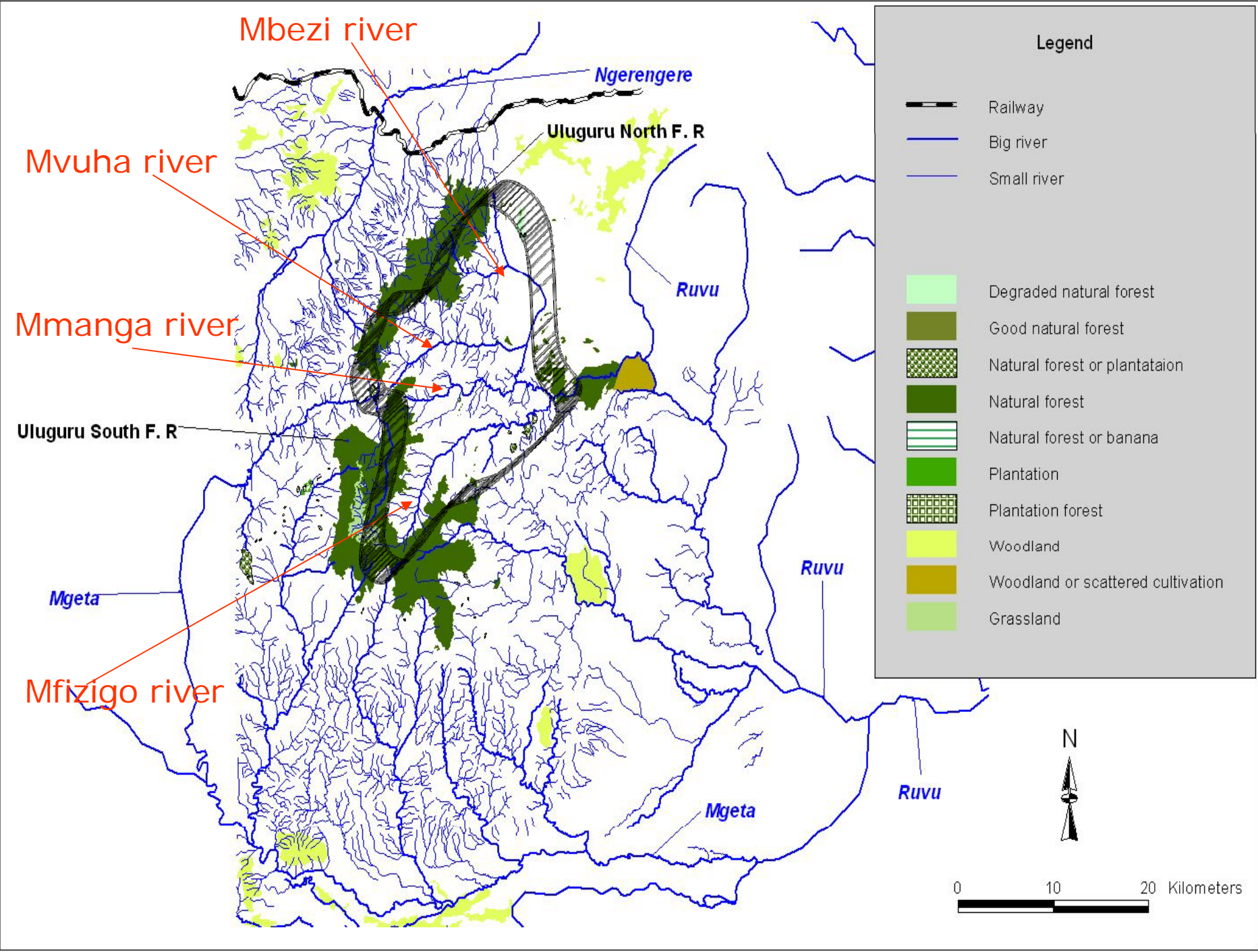


- To improve quality of life of the communities through substantial benefits to the rural poor hence contributing to poverty reduction

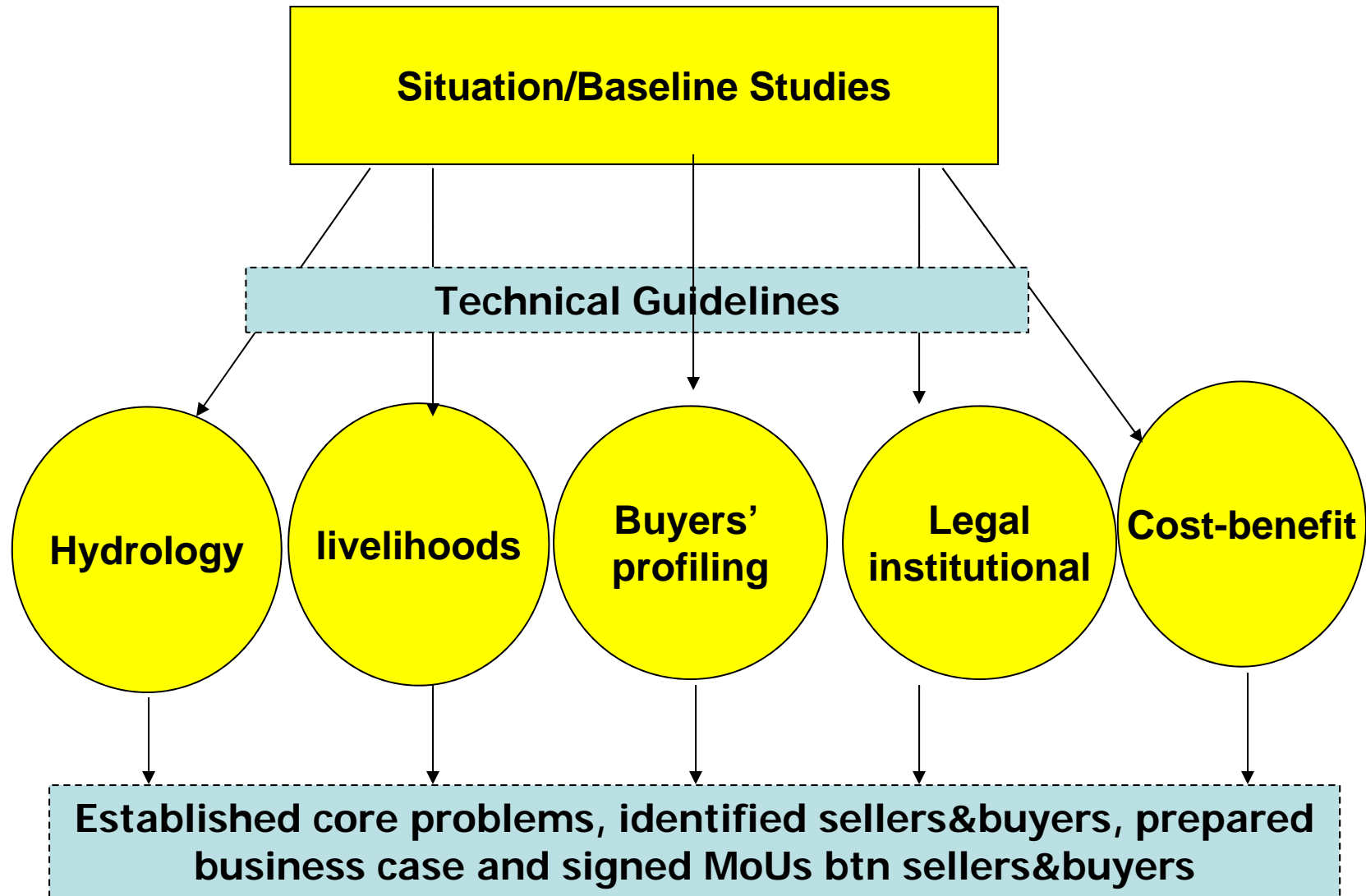
TZ EPWS Location

- Uluguru mountains a source of Ruvu River supplying water to >4 million people located in Morogoro, Kibaha, Bagamoyo and Dar es Salaam
- Within Ulugurus, we work at Kibungo sub-catchment which has significant contribution of water volume to the main Ruvu
 - Five villages of Nyingwa, Lanzi, Kibungo, Dimilo and Lukenge within Kibungo Juu Ward, Matombo Division, Morogoro Rural District, Tanzania

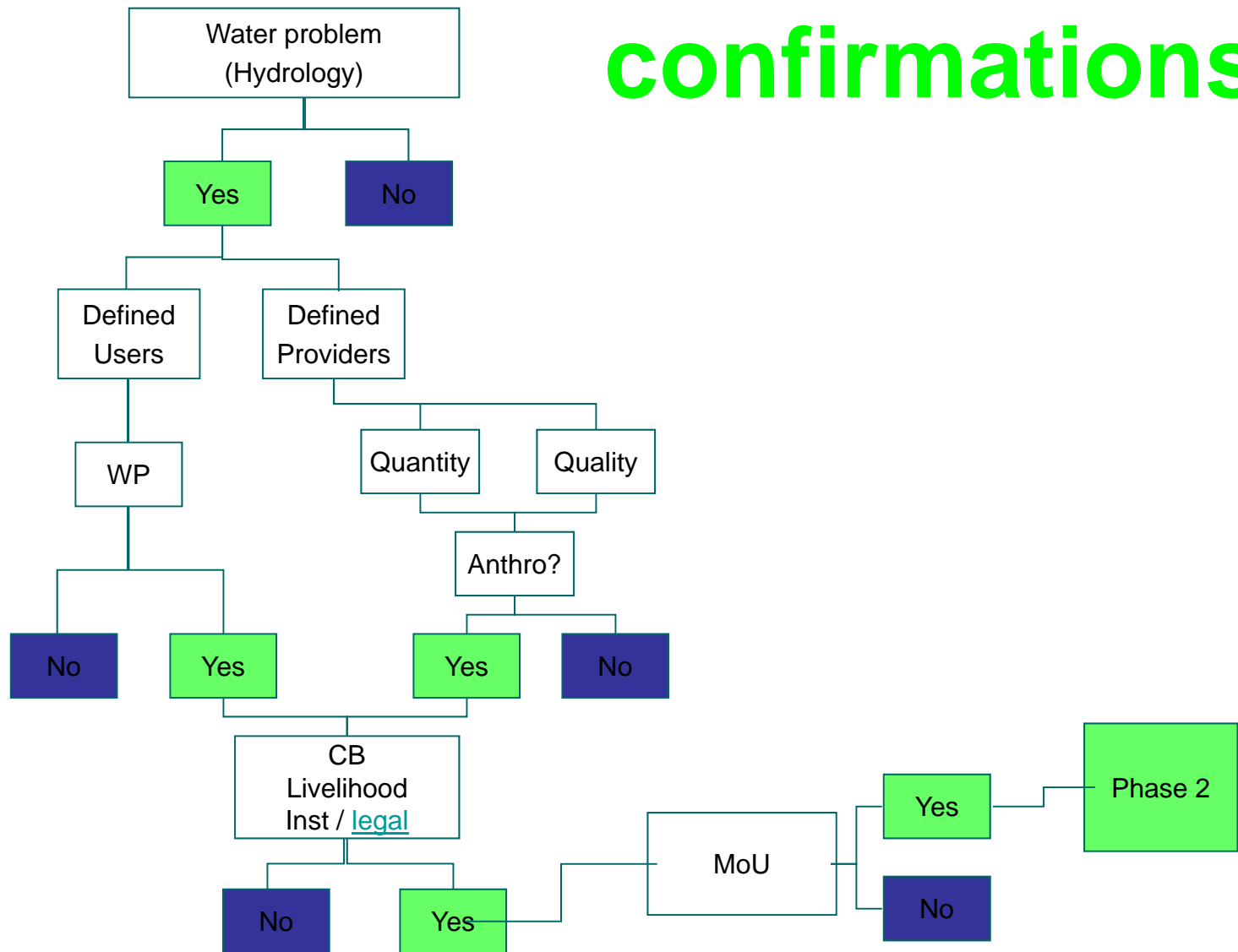




During Feasibility assessment.....



Ideally is confirmations



Land use Issues Around Uluguru/Ruvu River

- Substantial conversion of vegetation cover from closed forest and woodland to farmland, settlement and mining activities



- Decreased amount of water flowing in the Ruvu River attributed to unsustainable land use management practices
 - Water scarcity for production
- Increased turbidity due to increased sediment loads in the river water
 - Increases treatment costs



What are Impacts as a result of the problems?



- Increasing treatment costs (\$300,000 per month)
- Short of water supply esp. during long dry years (normally between September and November)

Livelihoods' Issues Around Ulugurus

- Population increase is high with growth rate of 2.7% per annum
- Many people are very poor (about 31% of Ulugurus' pop'n live below poverty line)
- Subsistence agriculture is a dominant economic activity with main farming feature of 'slash and burn' together with shifting cultivation

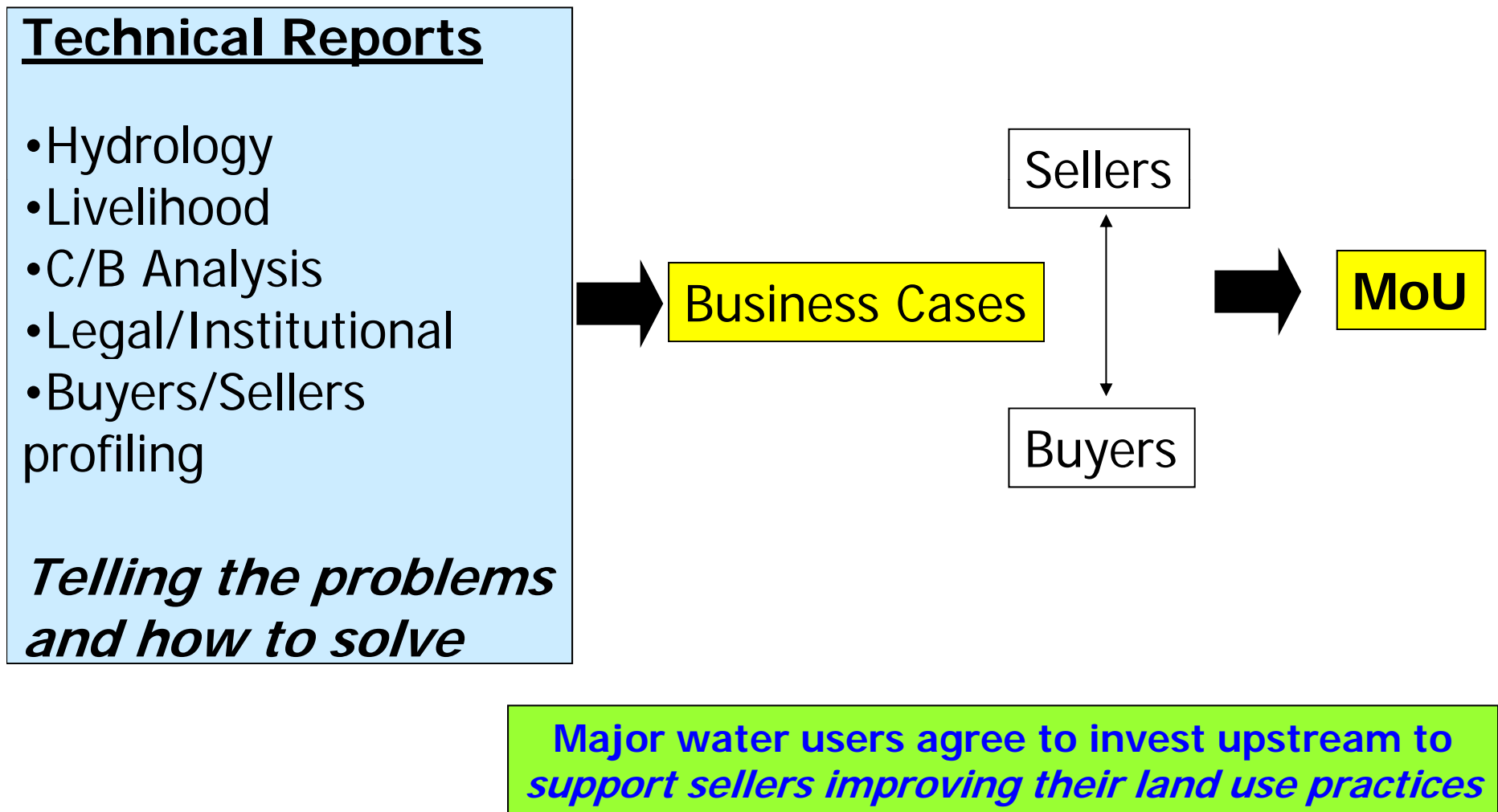


- Agricultural production is very low estimated to be less than 4 bags per acre for large producers;
- Food shortages

Identification and roles of sellers and Buyers

- Kibungo Juu communities identified and selected sellers of WS
 - Recognised the existence of water problems esp. poor water quality
 - Recognised the contribution of their activities to the problem
 - Improving hydrological status
 - Implementing SWC measures through improved land use practices
 - Participating in monitoring implementation of land use change and its impacts on water flow
 - Receiving payments (under local government)
- DAWASCO and Coca Cola KLtd as Buyers:
 - Water is critical/core for their business & reliant on river water
 - Recognised the high costs of poor or lack of water (alternative supply) for their business
 - Showed willingness, capacity and accept to pay
 - Paying/rewarding farmers who have improved their land use practices
- **MoUs were signed between these two parties (sellers and buyers)**

Phase I: EPWS achievements...



Implementation Phase

What are the initiatives in solving Ulugurus' issues?

- Implementing various land use [interventions](#) proposed by the feasibility studies as per [slope](#); e.g.
 - Terraces, agroforestry/reforestation, riparian restoration
- Supporting adoption of improved land use practices to increase production through:
 - Extension services such as:
 - Trainings on:
 - » Improved farming practices
 - » Animal/livestock keeping
 - » Agro-forestry
 - Inputs:
 - » Improved seeds: Maize, beans, groundnuts, cabbage, and tree seedlings
 - » Animal manure
- Piloting of establishment of payment mechanism
- Linking farmers with markets

Monitoring strategy

- Hydrological Impacts monitoring
 - Monitoring land use practices (appropriateness and coverage)
 - Monitoring of land use impacts i.e. hydrological status
- Livelihood Impacts monitoring
 - Monitoring of:
 - agronomic practices
 - changes in crop production
 - changes in attitude and perception

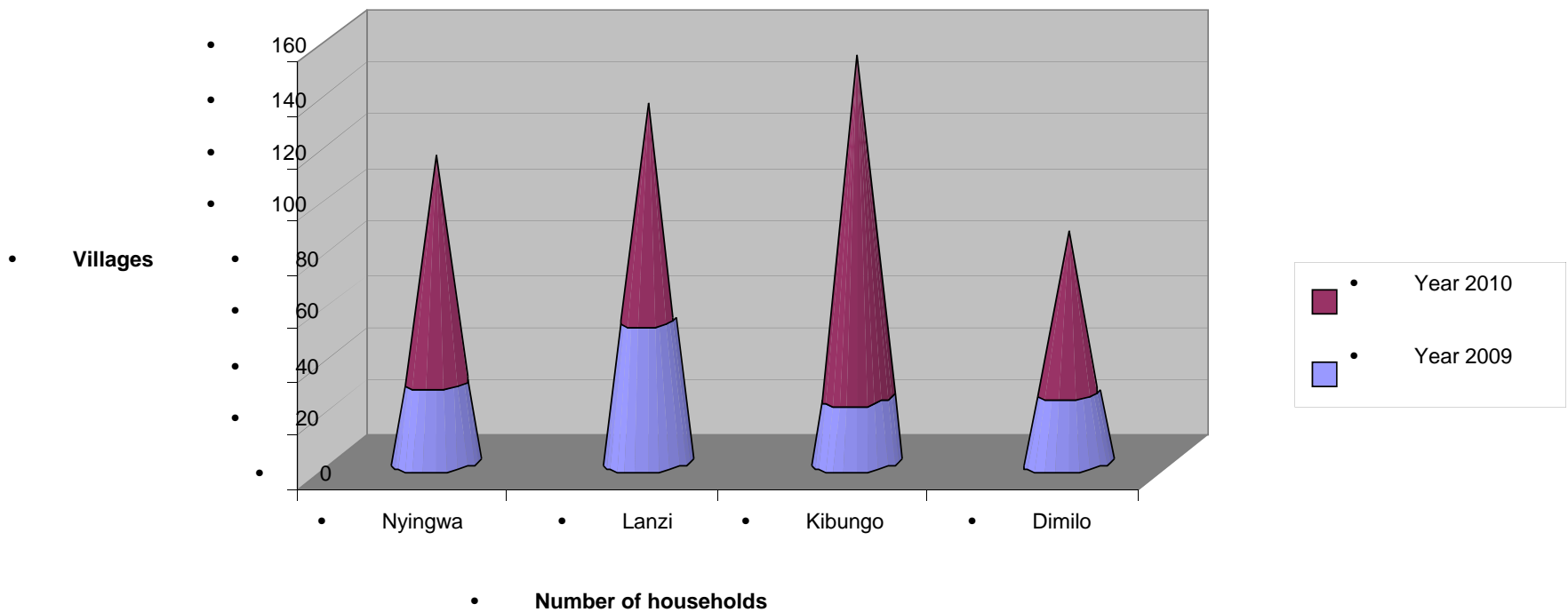
NOTE: Farmers are participating in monitoring processes



Achievements

Households adopting land use practices in Kibungo Juu from 2009 to 2010

Figure 1: Trend of households adopting improved land use practices



Fanya Juu and Bench terraces

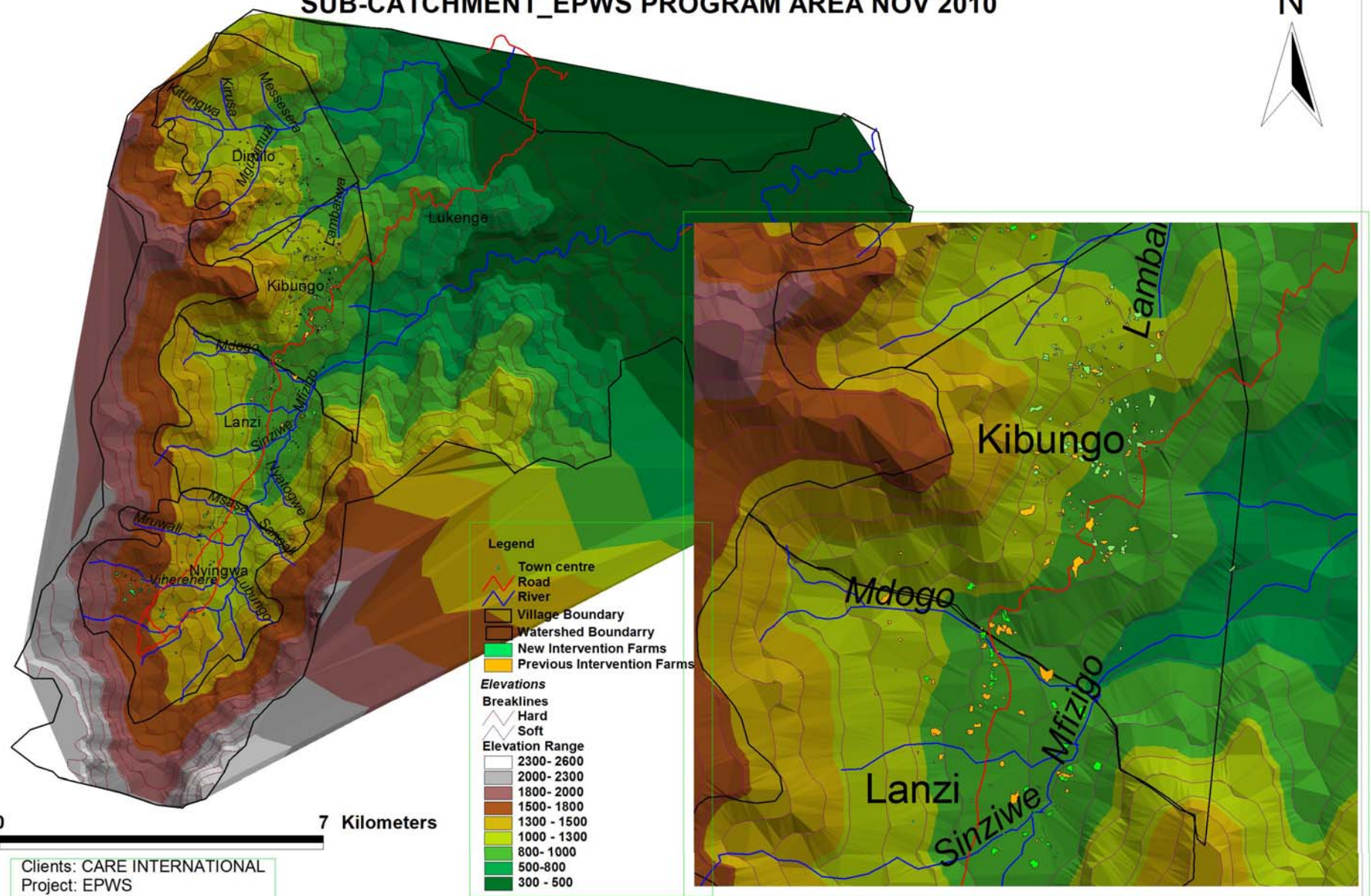




Tree planting: over 220,000 have been planted between 2009 to date



MAP FOR SLOPES, WATER SYSTEM AND INTERVENTION FARMS DISTRIBUTION AT KIBUNGO JUU SUB-CATCHMENT_EPWS PROGRAM AREA NOV 2010



- Legend**
- Town centre
 - Road
 - River
 - Village Boundary
 - Watershed Boundary
 - New Intervention Farms
 - Previous Intervention Farms
- Elevations**
- Breaklines**
- Hard
 - Soft
- Elevation Range**
- 2300 - 2600
 - 2000 - 2300
 - 1800 - 2000
 - 1500 - 1800
 - 1300 - 1500
 - 1000 - 1300
 - 800 - 1000
 - 500 - 800
 - 300 - 500

0 7 Kilometers

Clients: CARE INTERNATIONAL
 Project: EPWS
 Consultant: Heri Kayeye_SUA

Piloting Payment mechanism: Arrangements

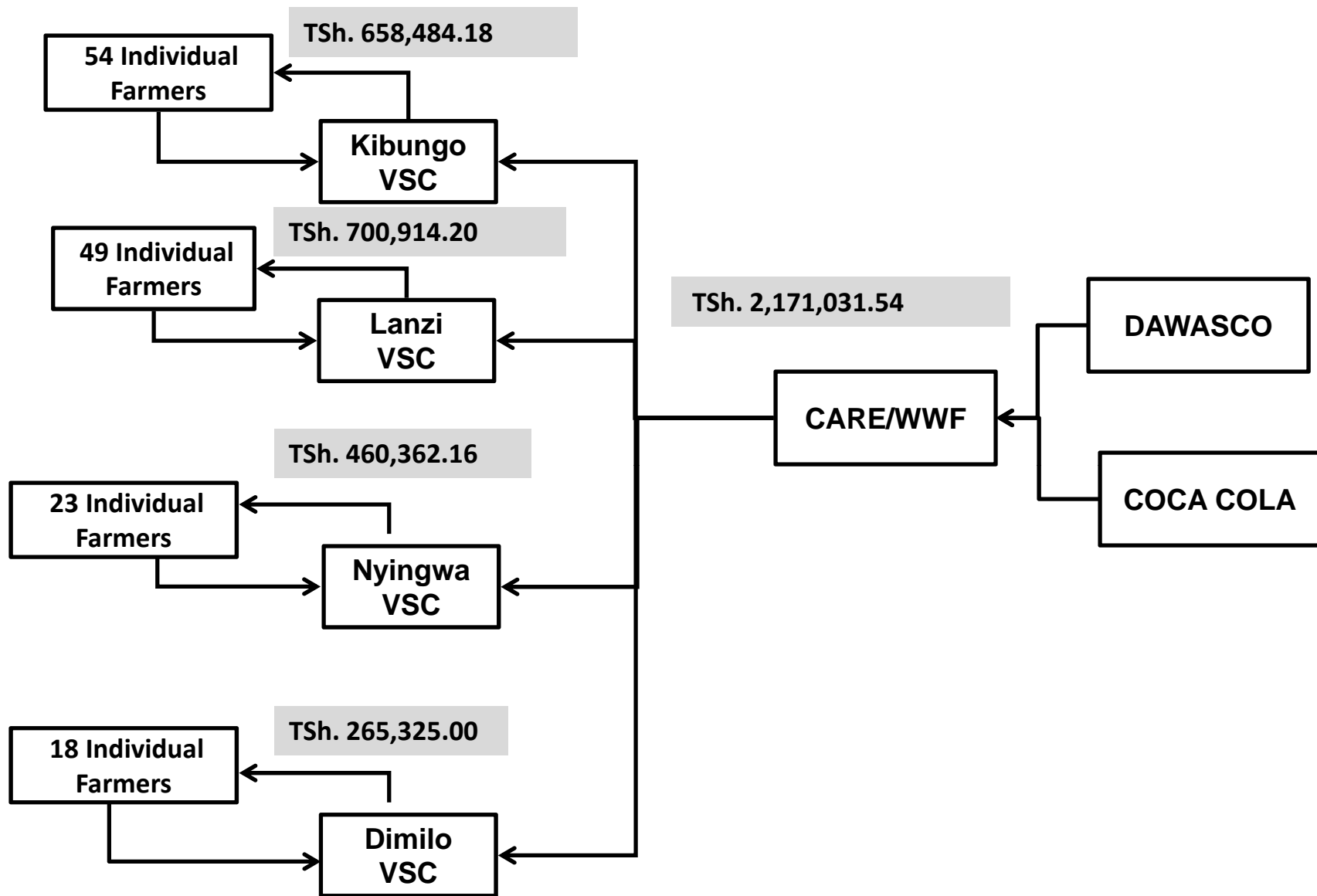
- EPWS is a performance based initiative
 - Payments are made to the participating farmers as rewards to doing the SLM thru [Village council](#)
 - The calculations are made based on:
 - the opportunity cost and amount of land that one puts into implementing the proposed land use intervention. Thus,
 - make prices differences between one technology to the other

Payments arrangements cont...

- Village council(s) with support of CARE/WWF:
 - measure and map to confirm land size and technology applied by respective farmers
 - This week farms are being measured and mapped
 - Collects funds from buyers (currently DAWASCO), then
 - Distributes the funds to respective participating farmers

Currently:

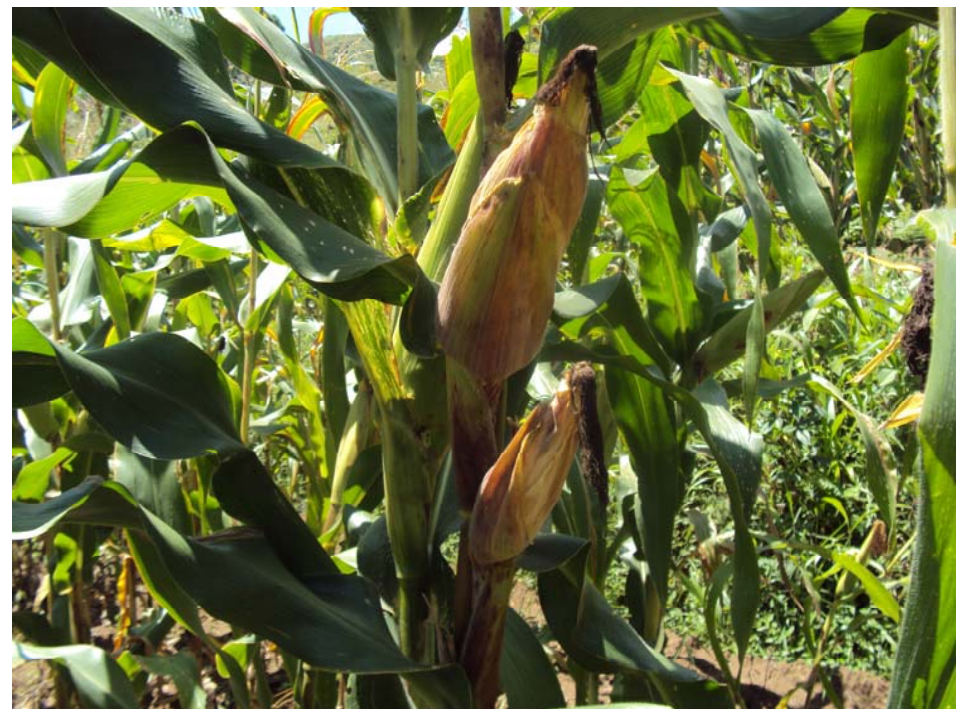
- a total of 134 farmers and 3 institutions have been paid about tshs 2.17m for converting their farms with improved land use practices by December 2009



Note: All village councils were paid about tshs. 85,946/=

Implementation Outcomes

- Farmers start realising increase of crop yields to more than 3 times per unit area practiced with recommended SLM like terraces



Implementation Outcomes

- Controlling run-off hence reducing soil erosion & watershed degradation
- Increased soil moisture contents

Village	Moisture level in fj/terrace (g/g)	Moisture level in local farms (g/g)
Kibungo	1.19	0
Lanzi	1.63	0.80
Dimilo	1.44	0.31
Nyingwa	2.17	0.21
Average	1.6075	0.33

Implementation Outcomes cont...

- Reduction of sediment load in water river system
- Improved Water quality and quantity

S/N o	Date	Station name	Average TSS (mg/L)	Flows(m³/ s)
1	18 July 2010	LANZI	0.0207	0.839
2	19 February 2011	LANZI	416.66	0.759
3	2 March 2011	LANZI	359.66	0.634
4	29 March 2011	LANZI	274.9	1.982

Successes Story

- Farmers by increasing production have been able to sell their surplus to the market and earn about \$7,000
 - The main crops included beans, tomato and cabbage
- The earlier successes realised on farm and through sharing lessons have already influenced:
 - the higher level policies
 - policy and legal changes as there is new Water law incorporating PES mechanism and to develop regulation for PES
 - Initiation of other WATER PES in North Ulugurus by WCST and East Usambara by WWF adopting the same methodology
 - Eastern Arc Endowment Fund set funds to finance PES initiative

Challenges



- PES is a new concept, it takes time to grasp
 - Awareness on PES/PWS is generally low
 - Community level
 - District (LGA) level
 - National level (Central government)
 - Institutional level
- Sol: - Seminars, training workshops
- Advocacy



Project area is terribly accessible especially during rain seasons

- Working with small scale farmers with small pieces of land
- No land use plan
- Getting sellers is simple while engaging buyers is challenging
- Property right esp. land ownership thus landless are sidelined automatically
- Reaching and benefiting the poor
- Experts on PES and/or PWS processes are limited
- Lack of markets for agricultural produce

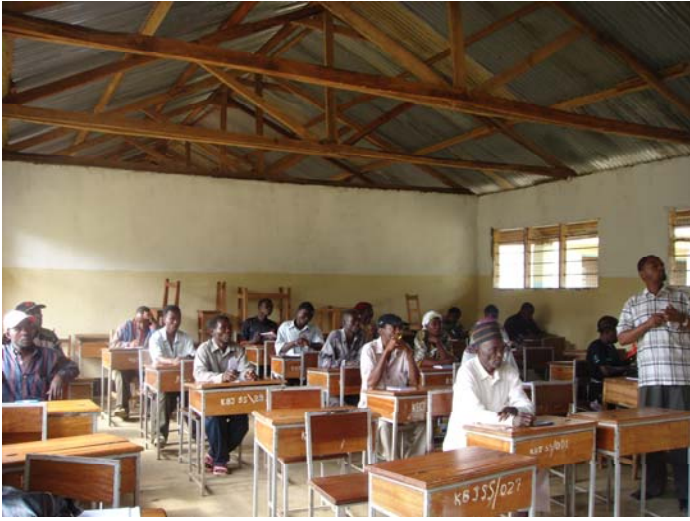
Lessons learned

- Wider appreciation of EPWS initiatives implemented in Ulugurus
- Perceptions of local communities against EPWS program have changed dramatically on realising rewards
- Farmers have high motivation to apply SWC measure techniques after realising positive results in the field
- The government has decided to make use of the lessons from this project to develop regulations describing the legislation.

Sustainability

- Building capacities of local farmers on EPWS initiatives e.g.
 - local extension agent like para-professional
- Ensuring linkage between farmers as sellers and buyers
 - Strengthening local institution to aggregate farmers to link effectively with buyers to continue with land use change interventions and own EPWS initiatives
- Effective involvement of local government authorities such as village leaders
- Formation and operationalisation of the Intermediary Group (IG)
- Ensuring self-motivation, self-dependent, effective involvement and commitment in implementing SWC measures
- Linking farmers with profitable market to ensure production of high value crops in SWC techniques
- Bringing more buyers on board to ensure flow of resources to the upland farmers.
- The new 2009 water legislation acknowledges PWS, thus creating the backing for sustainability and scaling-up.

Our belief is on Capacity building



**Thank you so much/Ahsanteni
Sana !**

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