Payment for Environmental Services: opportunities in the Kagera TAMP

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FAO PES website: www.fao.org/es/esa/pesal

In this presentation

- What are environmental services
- Examples of payment for environmental services schemes (PES)
- Challenges for PES implementation
  - Conditionality within the payment package
  - Additionality of environmental service provision
    - Both essential to engage private sector and ensure long-term sustainability
  - Lower aggregation and MRV costs
- Why PES in Kagera TAMP

Why PES in Kagera TAMP?
In this workshop

- Partners share their experiences to identify opportunities for:
- upscaling existing PES schemes within the basin (so far mostly on tree carbon), VI Uganda and Kenya and
- replicating promising PES models in the region that have succeeded in involving downstream water users in SLM pilots upstream (eg. EPWS in Tanzania, and in Lake Naivasha, Kenya)
- begin identifying potential investors- working groups
- and discussing the enabling policy and institutional environment (eg. what institutional capacity is needed to turn parts of K-TAMP into a carbon project?)

What are ecosystem services

PROVISIONING SERVICES

Products obtained from ecosystems

- Food
- Freshwater
- Fuelwood
- Fibre
- Biochemicals
- Genetic resources
- ...

REGULATING SERVICES

Benefits obtained from regulation of ecosystem processes

- Climate regulation
- Disease regulation
- Water regulation
- Water purification
- Pollination
- ...

CULTURAL SERVICES

Non-material benefits obtained from ecosystems

- Spiritual and religious
- Recreation and ecotourism
- Aesthetic
- Inspirational
- Educational
- Sense of place
- Cultural heritage
- ...

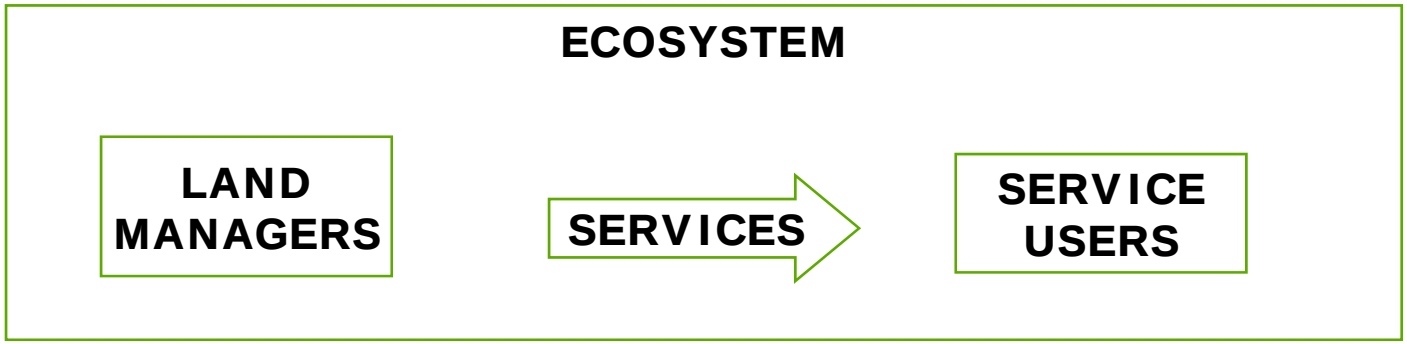
SUPPORTING SERVICES

Services necessary for the production of all other ecosystem services

- Soil formation
- Nutrient cycling
- Primary production

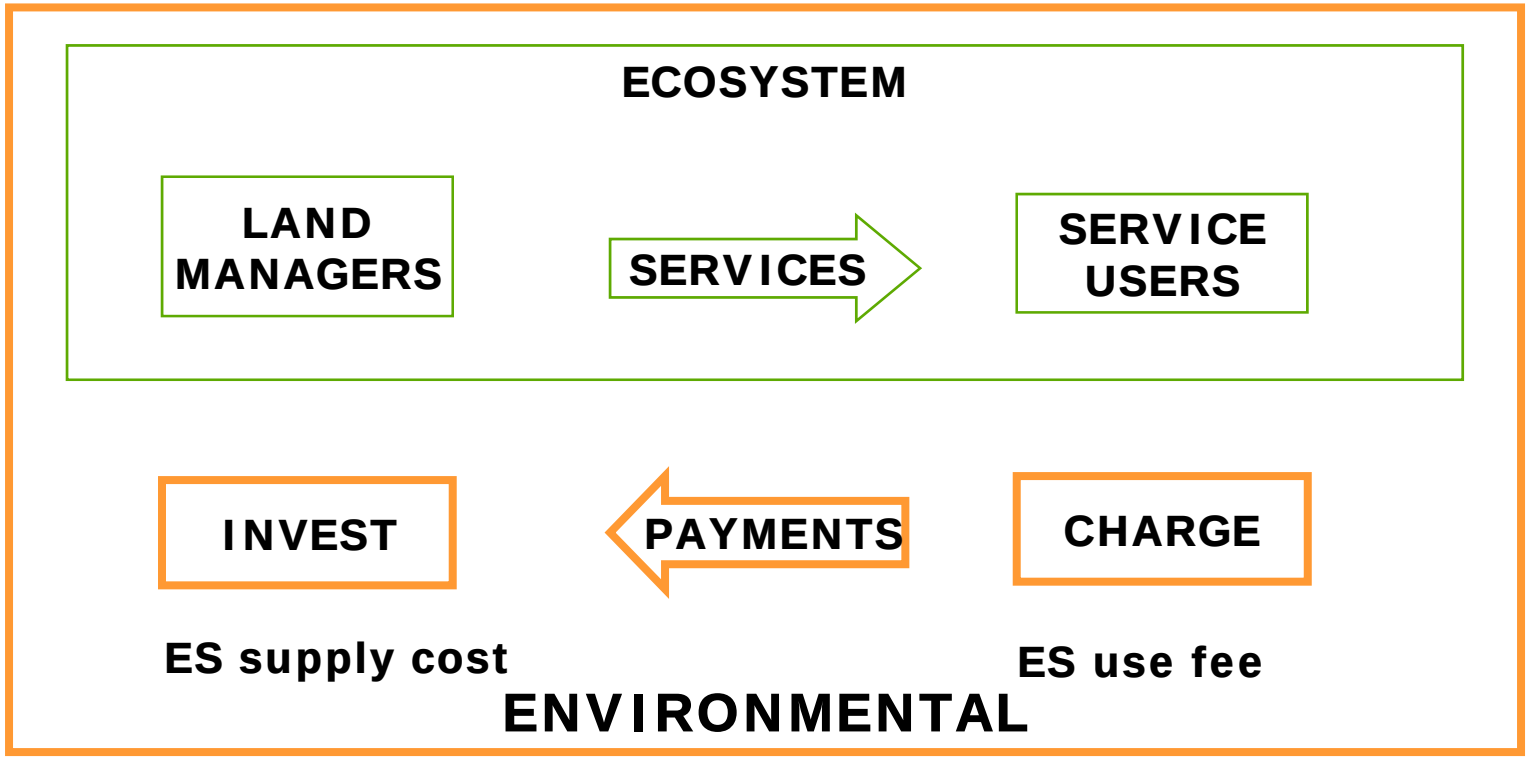
LIFE ON EARTH – BIODIVERSITY

What are Environmental Services

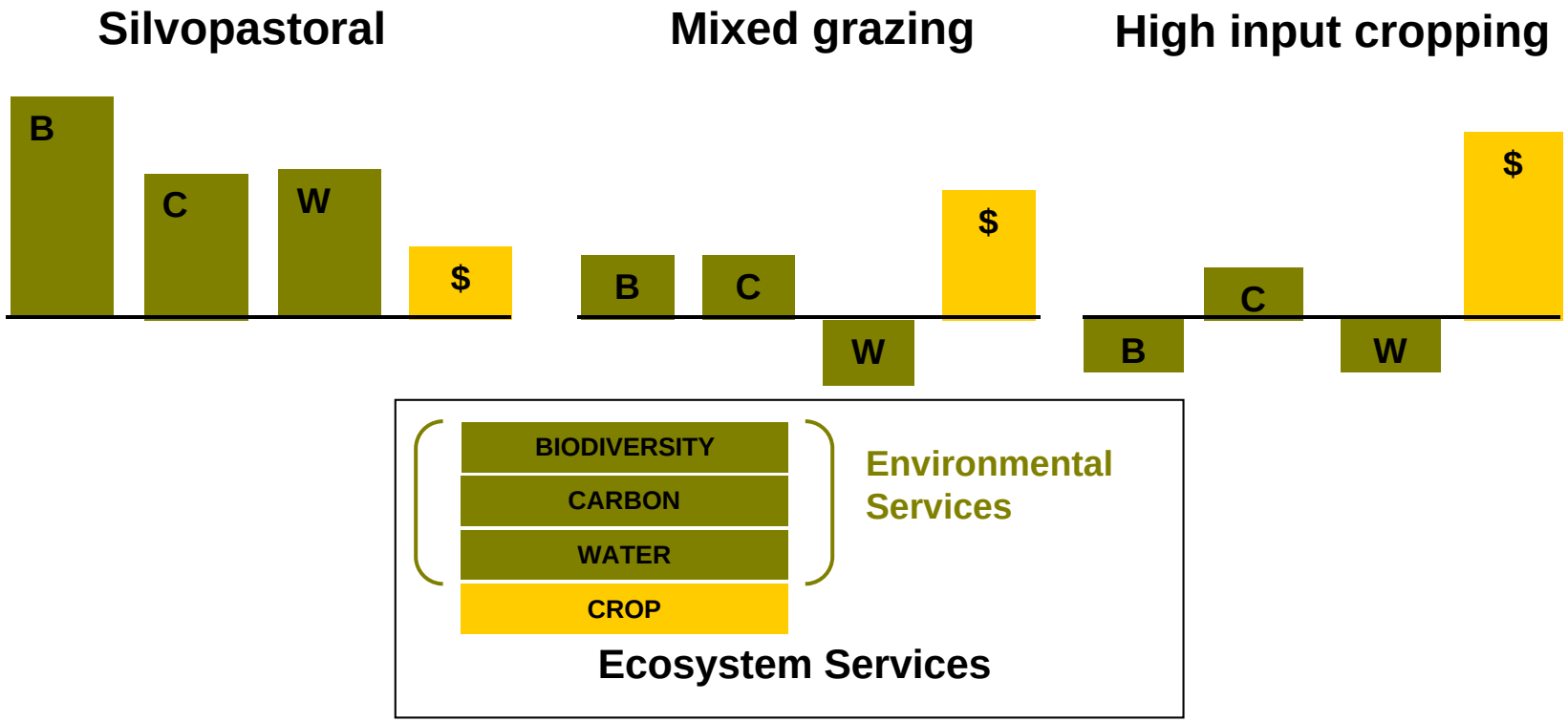


What are Environmental Services

-> The benefits we get from ecosystems, due to human interventions



ES Supplied by 3 different land management systems (hypothetical levels)



Payment for Environmental Services (PES)?

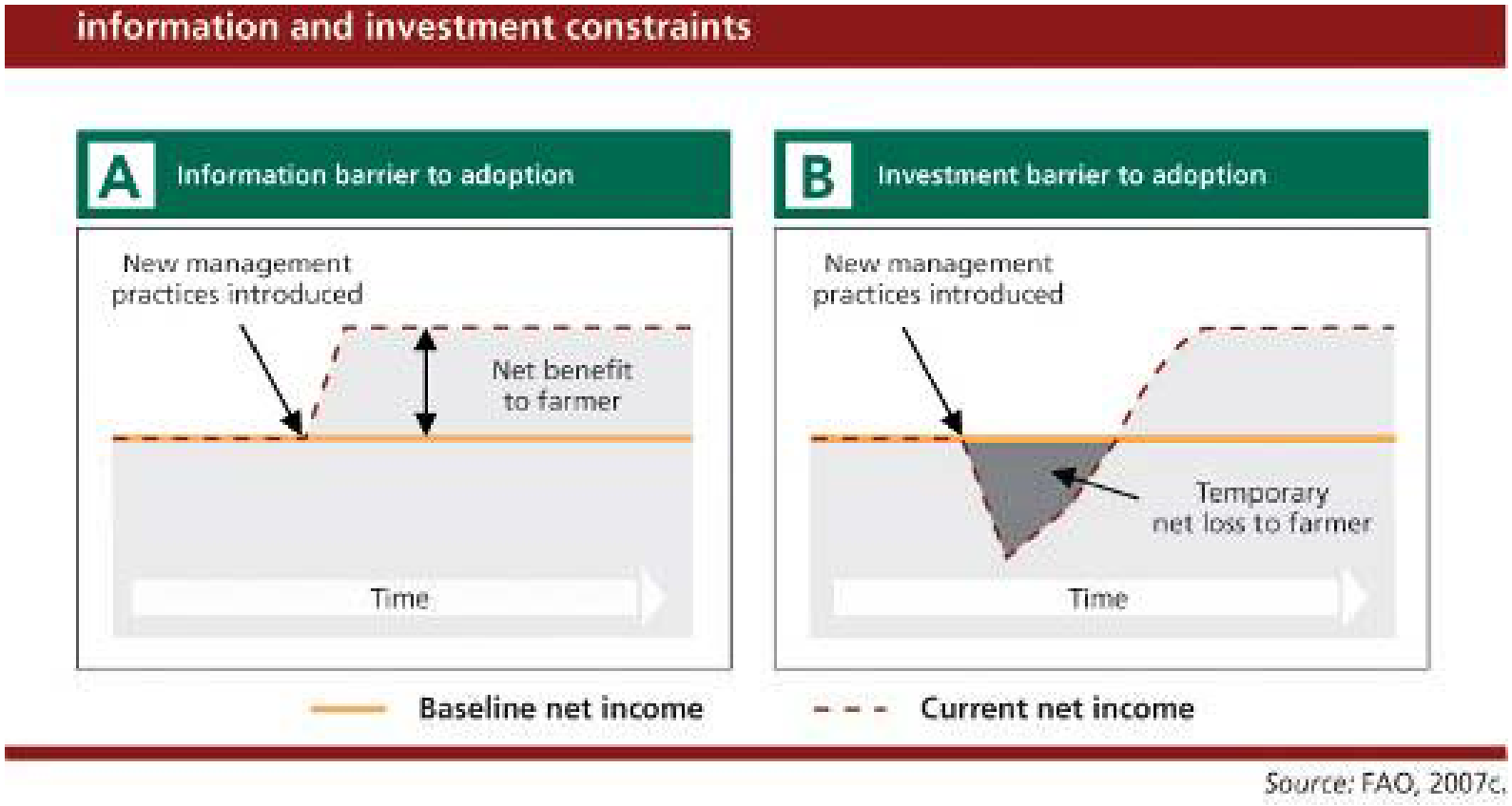
- **A mechanism to pass NRM responsibility to its actual managers**

- **With compensation of their costs**

- **And co-investment in livelihood improvements**

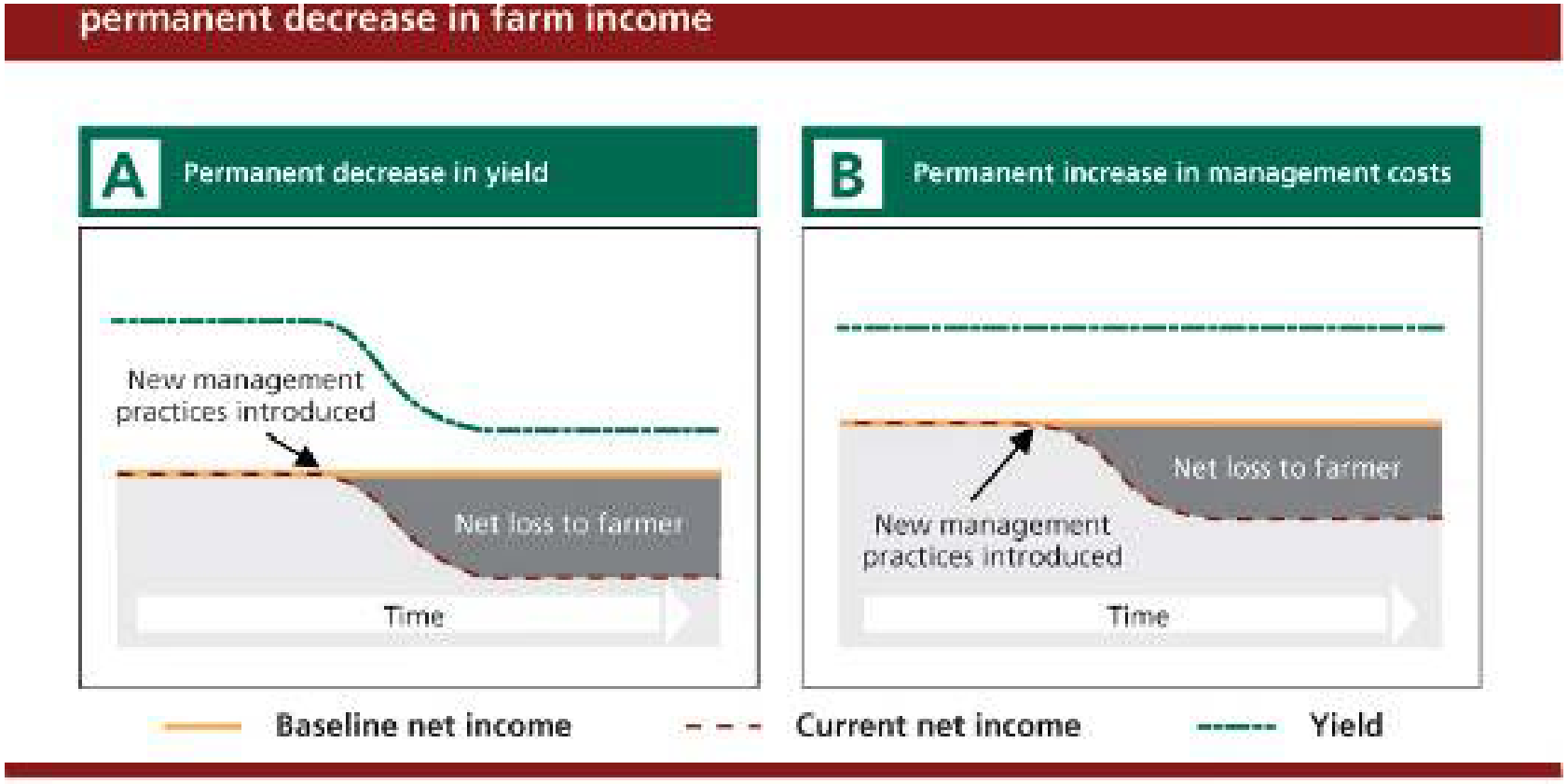
- Financed by the beneficiaries of improved NRM (private or public sector)

One-off PES?



Source: FAO, 2007c.

Permanent PES?



Source: FAO, 2007c.

Strategy A- Ag development PES

$

current land use yielding low income

introduction of improved land management plus PES

improved land management yielding higher returns in the long run

CROPS ON DEGRADED LANDS

INTRODUCTION OF ES-FRIENDLY PRACTICES

PES

ES-FRIENDLY PRACTICES & HIGHER YIELDS

LAND USE/MANAGEMENT

Strategy B- Conservation PES

$

current land use yielding low income

opportunity to switch to more profitable land use

highest income from avoided change with PES

FOREST

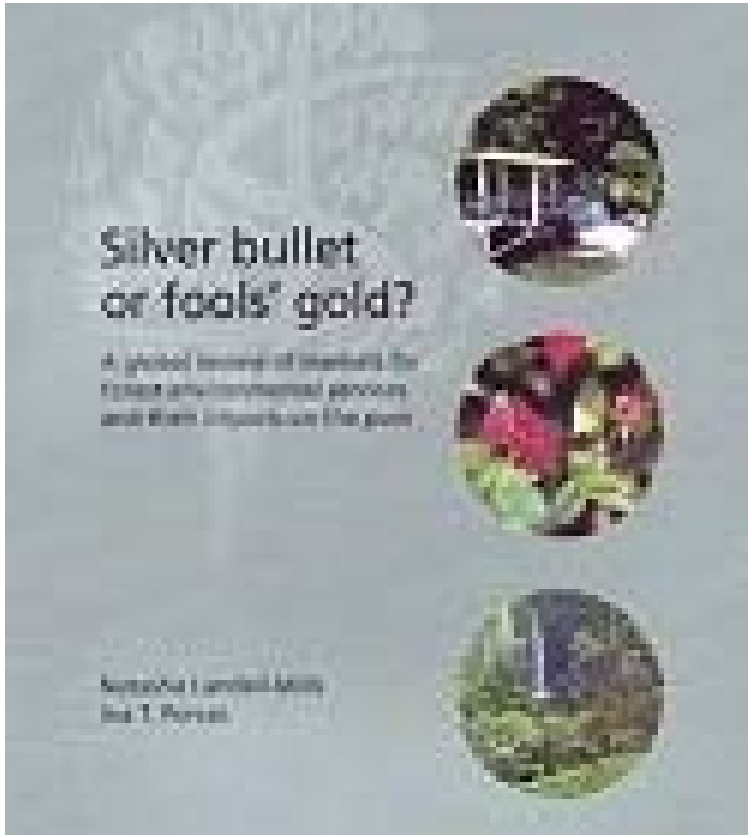
PASTURE

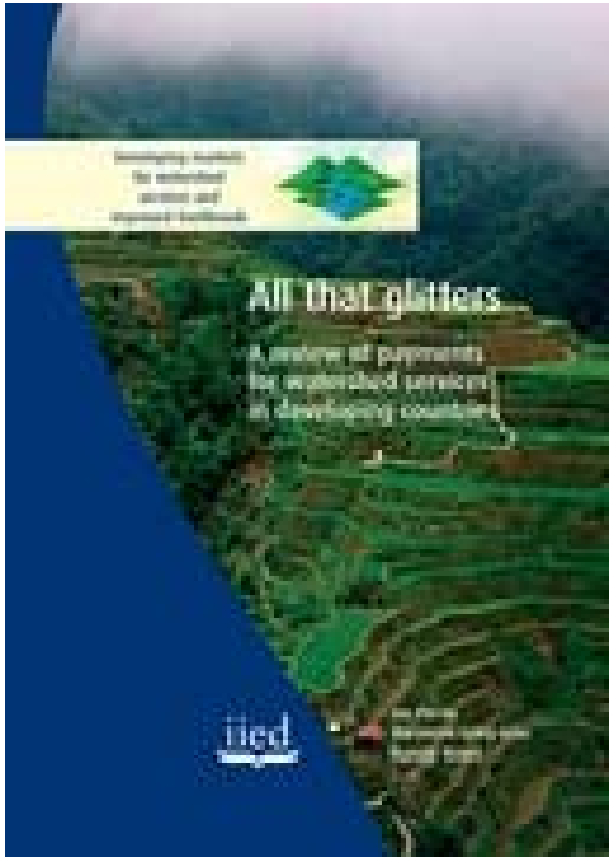
PES

FOREST

Examples of PES that Kagera TAMP could replicate

www.iied.org Watershed markets project





Costa Rica

Heredia town water supply

-ES charge of US $ 0.2/m3 as Hydro Tariff

-Invested in the management of the Braulio Carrillo National Park

-AND to private landowners, for forest protection and restoration in key points of the watershed used for water supply. Participating landowners receive a payment close to US $ 120 /hectare/yr

-In 2009, the ESPH scheme will cover 1191 hectares of forest and reforestation in public and private land

Costa Rica Opportunities for PES

Heredia town water supply

EMPRESA DE SERVICIOS PUBLICOS DE HEREDIA, S.A.

Cédula Jurídica 3-101-042028

No. CONTRATO	270196
No. MEDIDOR	856596
No. RECIBO	8058344
PERIODO AL COBRO	07-2009
FECHA VENCIMIENTO	22/07/2009
LOCALIZACIÓN	23-10-0425
DIRECCIÓN ESPECIAL	

FACTURACION SERVICIO DE AGUA

GAMEZ HERNANDEZ LUIS CARLOS

SR GETS ERMITA 300-N MI

Código y descripción de tarifa	Lectura actual	Lectura anterior	Consumo diario m3	Consumo m3
03 DOMICILIARIA	36	1	1.17	35

CÓDIGO	DETALLE	IMPORTE	HISTORIAL DE CONSUMO m3		
			MES	AÑO	M3
ACU	ACUEDUCTOS	7,394.25	01	2009	0
HID	TARIFA HIDRICA MEDIO	337.75	02	2009	0
			03	2009	0
			04	2009	0
			05	2009	0
			06	2009	1
	TOTAL	7,732.00			

OBSERVACIONES

Fecha lectura anterior	Fecha lectura actual	No. días
02/06/2009	02/07/2009	30

No. recibos pendientes	Monto sin intereses	Intereses pendientes
00	0.00	0.00

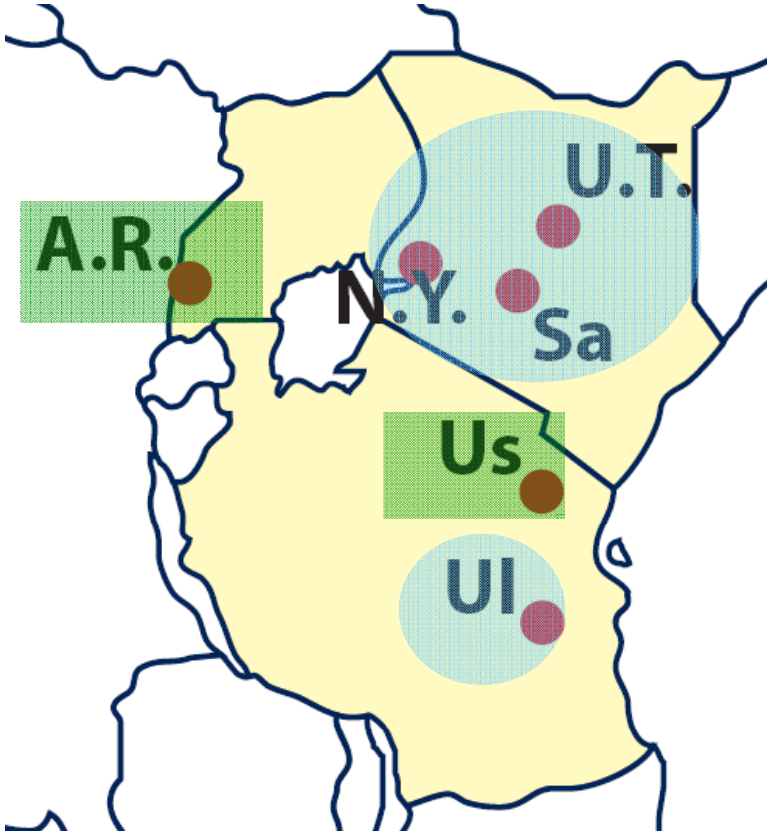
Monto del período	Pendiente anterior	Total general
7,732.00	0.00	7,732.00

Si cancela después del vencimiento se cobrará en la próxima facturación un cargo por mora de: **154.64**

SI NO TIENE RECIBOS PENDIENTES CANCELE SOLO EL MONTO DEL PERIODO

Additional earmarked fee for upstream forest owners in local watersheds
338 colones over 7400colones, for six months of service

Examples of PES in the region
PRESA sites ICRAF-IFAD and partners



Examples from the region

- In Tanzania, Dar es Salaam water company paying for SLM in Uluguru mountains- Lopa will present tomorrow
- In Kenya, in Sasumua, Nairobi water company (part of PRESA, BB will present just next)
- In Kenya, in Lake Naivasha…

Examples from the region

In Kenya, in Lake Naivasha

565 farmers in Malewa river basin, feeding the Naivasha lake

+ 150 already applying the promoted land use technologies voluntarily

farm size 1-4ha

riparian protection areas, agroforestry, indigenous tree planting (95 % survival rate), contours grass strips, bench terracinghigh value crops and other SLM

- **Cash payments:** flat payment of 17USD/ha/year over the first three years, issued as vouchers for agro-inputs in registred suppliers
- **In kind:**project investment in nurseries and SLM training, Material inputs (fodder crops, tree seedlings, and high value crops) are provided by the project

Table 17. Absolute and relative changes (green = increase, red = reduction) of the key indicators for the 3 scenarios compared to the baseline situation

Key indicators	Contour Strips				Mulching				Tied Ridges			
	2005		2006		2005		2006		2005		2006	
Inflow Masinga (MCM/y)	-3	0%	-145	-7%	19	2%	27	1%	-8	-1%	-132	-6%
Sediments Inflow Masinga (10^3ton/y)	-311	-26%	-965	-23%	8	1%	12	0%	-327	-27%	-883	-21%
Outflow Kiambere (MCM/y)	-12	-1%	-110	-5%	35	3%	36	2%	-6	-1%	-125	-5%
Outflow Low Grand Falls (MCM/y)	-7	0%	-215	-4%	52	3%	58	1%	7	0%	-277	-5%
Crop Transpiration (mm/y)	1	0%	0	0%	5	1%	3	1%	1	0%	1	0%
Soil Evaporation (mm/y)	0	0%	0	0%	-7	-5%	-8	-5%	0	0%	1	0%
Groundwater Recharge (mm/y)	12	21%	31	14%	2	3%	3	1%	16	27%	38	17%
Sediment loss (ton/ha/y)	-1	-45%	-4	-39%	0	-12%	-1	-13%	-1	-32%	-2	-21%

Green Water Credits report # 9 (www.greenwatercredits.net)

Kagera Agro-Ecosystems

Opportunities for PES

Ecobusinesslinks.com Carbon Offset Survey

(Prices are for individuals, businesses may be able to get volume discounts)

ShareThis

Carbon Offset Provider	Price (US$/Metric ton CO2)	Non-profit	Projects Types	Project Choice	Offset Types	Product Certification/ Verification* (Links see below table)
Verus Carbon Neutral USA	$2.75 (varies with CCX price)	No	Various	No	Personal, Business	Chicago Climate Exchange (CCX)
e-BlueHorizons USA	$5.00	No	Renewables, Reforestation	No	Home, Car, Air	Chicago Climate Exchange, Environmental Resources Trust
Carbonfund.org USA	$10.00	Yes	Renewables, Efficiency, Reforestation	Yes	Home, Car, Air, Events, Business	Environmental Resources Trust, Climate Community and Biodiversity Standards, Chicago Climate Exchange, UNFCCC JI
Carbon Footprint Offsetters Canada	$10.00 (CER's)	No	Renewables	No	Personal, Business	EcoLogo, CCX
ClearSky Climate Solutions USA	$12.00	No	Forestry/reforestation, Methane, Rangeland Management	Yes	Personal, Car, Air, Custom packages for businesses, events, weddings and organizations	Chicago Climate Exchange, Climate Community and Biodiversity Standard

Carbon projects- Uganda

- TIST
  - 5648 farmers in 2100ha in three districts in South Uganda: Bushenyi, Kabale and Kanungu
  - reforestation of degraded landscapes: tree planting and agroforestryplant at least 500 trees per group
  - **in cash per tree:** a fixed per tree payment (0.02 US$/"well-cared-for" tree/year for the first 20 years)
  - and 70 % of the net revenues generated from sale of carbon credits;no information on how many carbon credits are generated from these sites
  - each carbon credit is sold for 10USD
  - **in kind:** training to enhance sustainable agricultural management, and basic business management

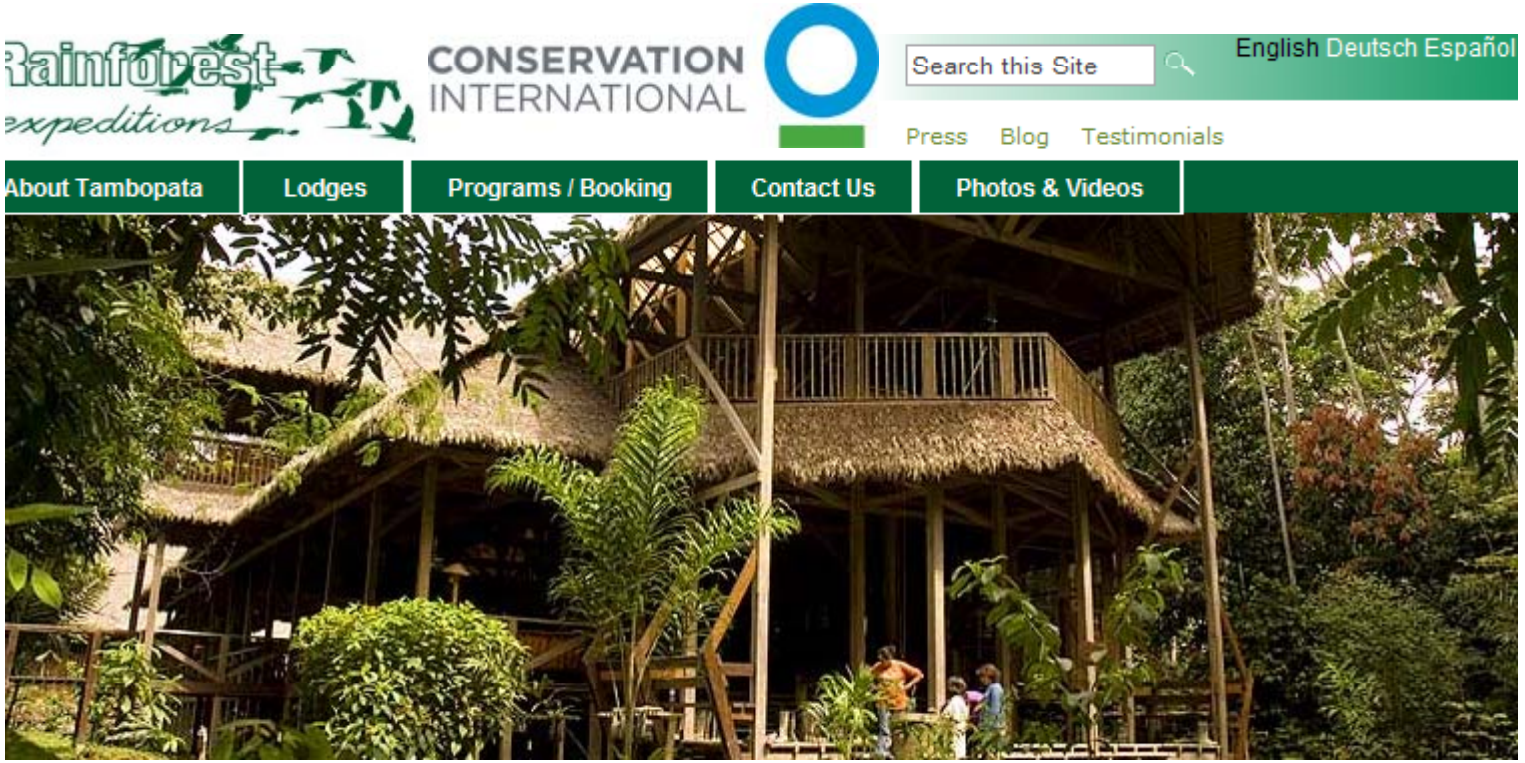
Carbon projects- Uganda

Plan Vivo

- 909 farmers, in 1210ha in Bushendi, Masindi and Hoima districts
- Woodlots
- **in cash per tree:** 30% of **80, 000tCO2/year** at 10$ each (prices range 6-15$) = 800,000 USD/year; 30% of carbon revenue belongs to the farmers=240,000USD/yr, considering 909 participants= 260 USD/year per farmer on average (seems to high??)
- in **Kind:** honey production, fruit orchard with tree species that can provide fuel wood, fodder, medicinal products; training on sustainable land management techniques

PES for BIODIVERSITY/LANDSCAPE

earmarked tourism fees for sustainable management



PES for BIODIVERSITY/LANDSCAPE

earmarked tourism fees for sustainable management

Rwandan Tourism Revenue Sharing Programme

Since 2005 allocates 5% of total annual tourism revenues to community projects' around 3 national parks: Nyungwe National Park, Volcanoes National Park and Akagera National Park

But is investment in community projects really contingent on improving forest and wildlife protection?

eg. support bamboo/forest plantations outside protected areas to reduce pressure on natural resources

Critical issues in PES design

Key characteristic of PES vis a vis other conservation and development projects:

-while initial stage usually funded with donor funds
-Ultimately it should be funded by contributions from environmental services users via **earmarked** contributions, if possible with local collection and investment

-And it should be to cover an externality- eg. maintaining traditional varieties to increase farm resilience to Climate Change is beneficial mainly for the farmer and for society at large for maintaining genetic diversity.. For individuals, it is is only valuable if it ca be sold at a premium- **ecolabelling**

Challenges in PES implementation

- Conditionality within the payment package
- Additionality of environmental service provision
  - Both essential to engage private sector and ensure long-term sustainability
- Lower aggregation and MRV costs for easier upscalling and replication

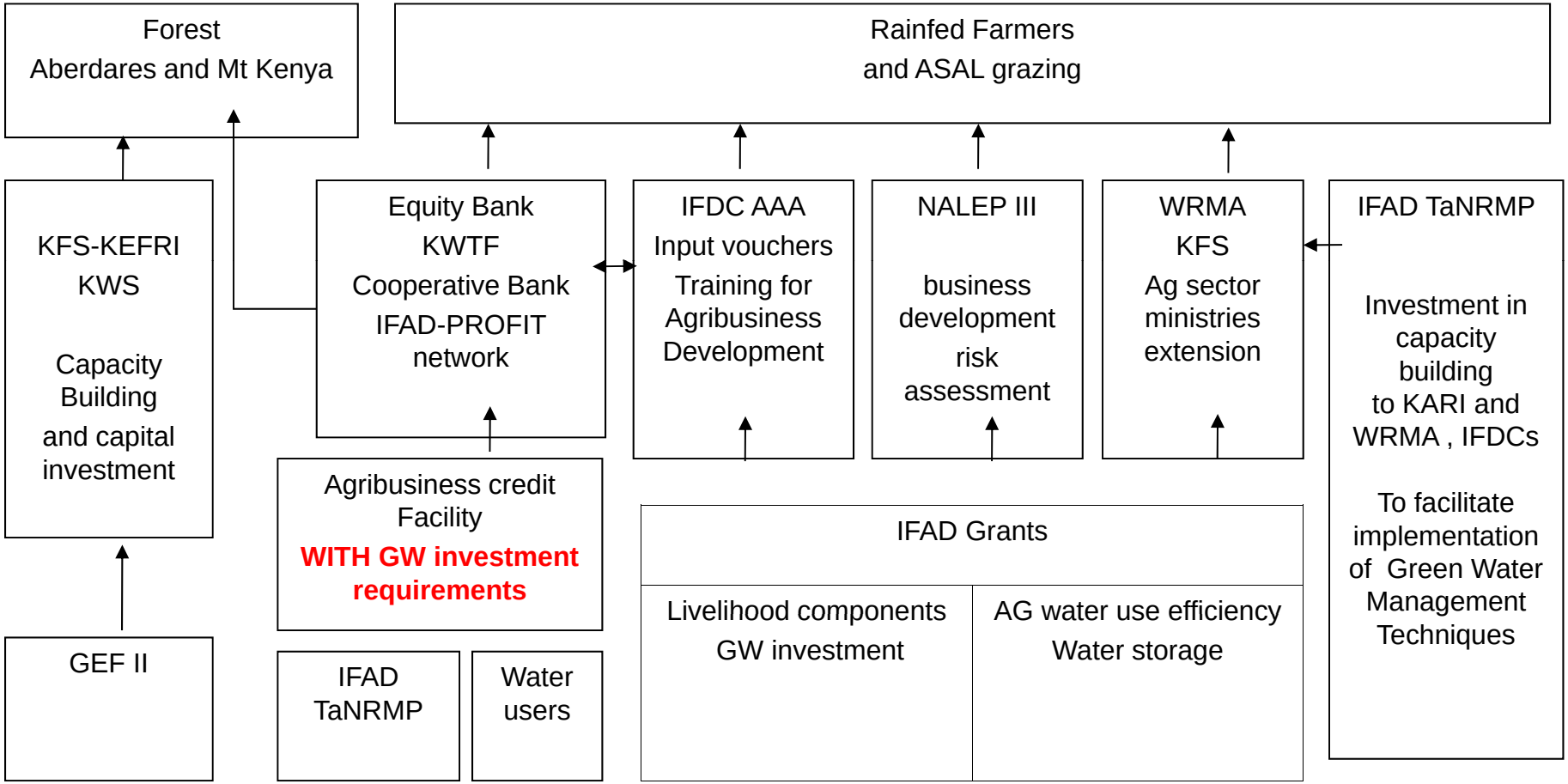
Challenges in PES implementation: Conditionality and Additionality

- PES as incentive for SLM adoption and maintenance
  - But still needs to be conditional on adoption and maintenance

  eg. one-off payments to community projects cannot be enforcable- fine for donor projects but not acceptable to private sector investors! A combination of more conditional payments may be needed too

  - SO support provided: tech assistance, marketing, grants or access to finance etc still needs to be provided only to farmers who are adopting, expanding and maintaining agreed SLM to ensure additional environmental benefits

Upper Tana Catchment Investment Mechanism



5 USM	10USM	20USM (10USM blue + 10USM green water)	10USM

Challenges in PES implementation- MRV costs

- PES as incentive for SLM adoption and maintenance
  - But still needs to be MRVable at low cost, given the multiple number of enrolled smallholdings
  - But there are innovators:
  - SALM carbon projects that were carbon accounting is activity-based (ie. according to the modelled C yield of those SLM activities under certain conditions) instead of sampling
  - In water…

Challenges in PES implementation- MRV costs

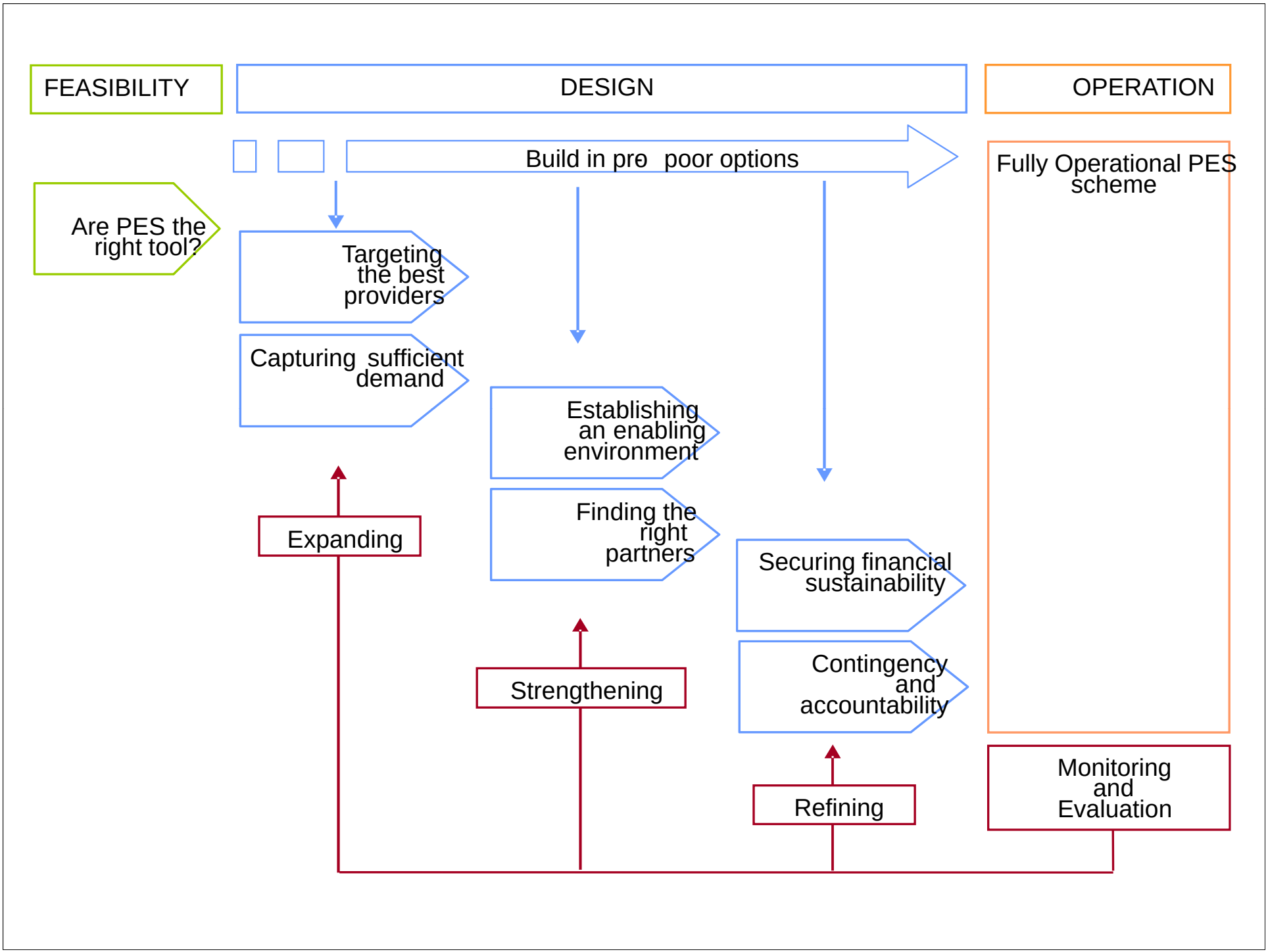
- In Kenya, in Lake Naivasha

Why PES in Kagera TAMP

Why PES in Kagera TAMP?

PES as incentives for sustained adoption and replication of SLM post K-TAMP

- GEF project requirement for co-funding by engaging buyers now building on knowledge in the region
- Buyers could cover SLM costs in areas of interest to them within Kagera- like HP sector within the Costa Rican National PES, via FONAFIFO
- K- TAMP already has the requirement to monitor impacts of SLM on silt loads in 4 test micro-catchments- could a buyer be interested in co-funding this effort if of interest to their activity too? (eg. hydropower in Rwanda?)
- Requirement to increase carbon sequestration storage in 30, 500ha (out of 100,000ha intervention area)


FEASIBILITY
DESIGN
OPERATION
Build in pro poor options
Fully Operational PES scheme
Are PES the right tool?
Targeting the best providers
Capturing sufficient demand
Establishing an enabling environment
Finding the right partners
Securing financial sustainability
Contingency and accountability
Expanding
Strengthening
Refining
Monitoring and Evaluation

Why should K-TAMP take this extra step?

- It is already investing in much of the land planning and community mobilization basis of any PES:
  - **Western Kenya smallholder Agricultural Carbon Finance project:** *Western Kenya Integrated Ecosystem Management Project*
  - **Emiti Nidwo Bulora (within Kagera):** Lake Victoria Regional Environmental and Sustainable Agricultural Productivity Programme (RESAPP)

Why should K-TAMP take this extra step?

- It is already investing in technical guidelines can then be mainstreamed in watershed management in the region

→also an argument for staff time co-funding with government agencies

K-TAMP already preparing for PES…

- PES as incentive for SLM adoption and maintenance
  - Investment package is never only cash payments AND in fact farmers are most interested in the training opportunities (otherwise they wouldn't participate as cash payments are very low- eg. US$2/year in Vi Kisumu)
  - Highest benefits realised in improved farm productivity and support for overall farm planning, access to credit, marketing, inputs etc

K-TAMP already preparing for PES…

- PES as incentive for SLM adoption and maintenance
  - Examples:
  - Eg. in Uluguru project SLM allowed to new high value crops like cabbages and tomato- in 2010 cabbage sales yielded 7000USD for 11 participants!
  - Eg. Africa 2000 and Marketing presentation shows that SLM can improve productivity and if linked to market access development can act as an incentive for maintenance and expansion of SLM, without direct cash PES payment

K-TAMP already preparing for PES…

- Limited funding will only allow for demonstration
- Needs co-funding
- And to secure long-term support and replication to this initial investment

Why PES in Kagera TAMP?

PES as incentives for sustained adoption and replication of SLM post K-TAMP

But if YES now is the time to make some decisions:

For water:

- Select those with buyers to engage
- Where hydrological benefits can be higher
- Concentrate some of the investment in an entire subcatchment from the upper reaches down to the wetlands
- To allow for hydrological monitoring and comparison with untreated subcatchments on the opposite side of the river
- And focus interventions along the riverine areas
- Work closely with authorities with watershed management mandate to build technical capacity and ownership of the PES linkages

Opportunities for PES

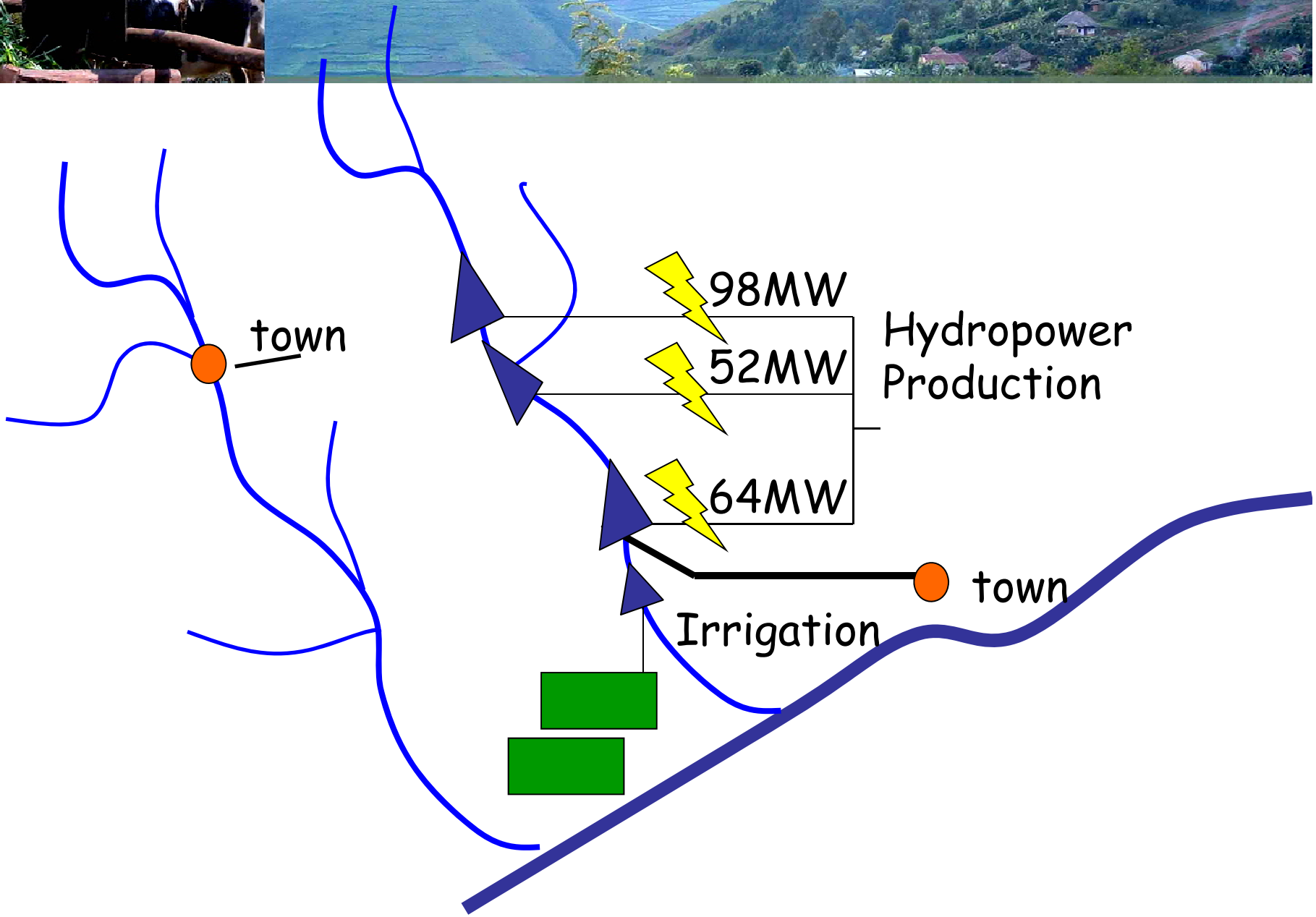
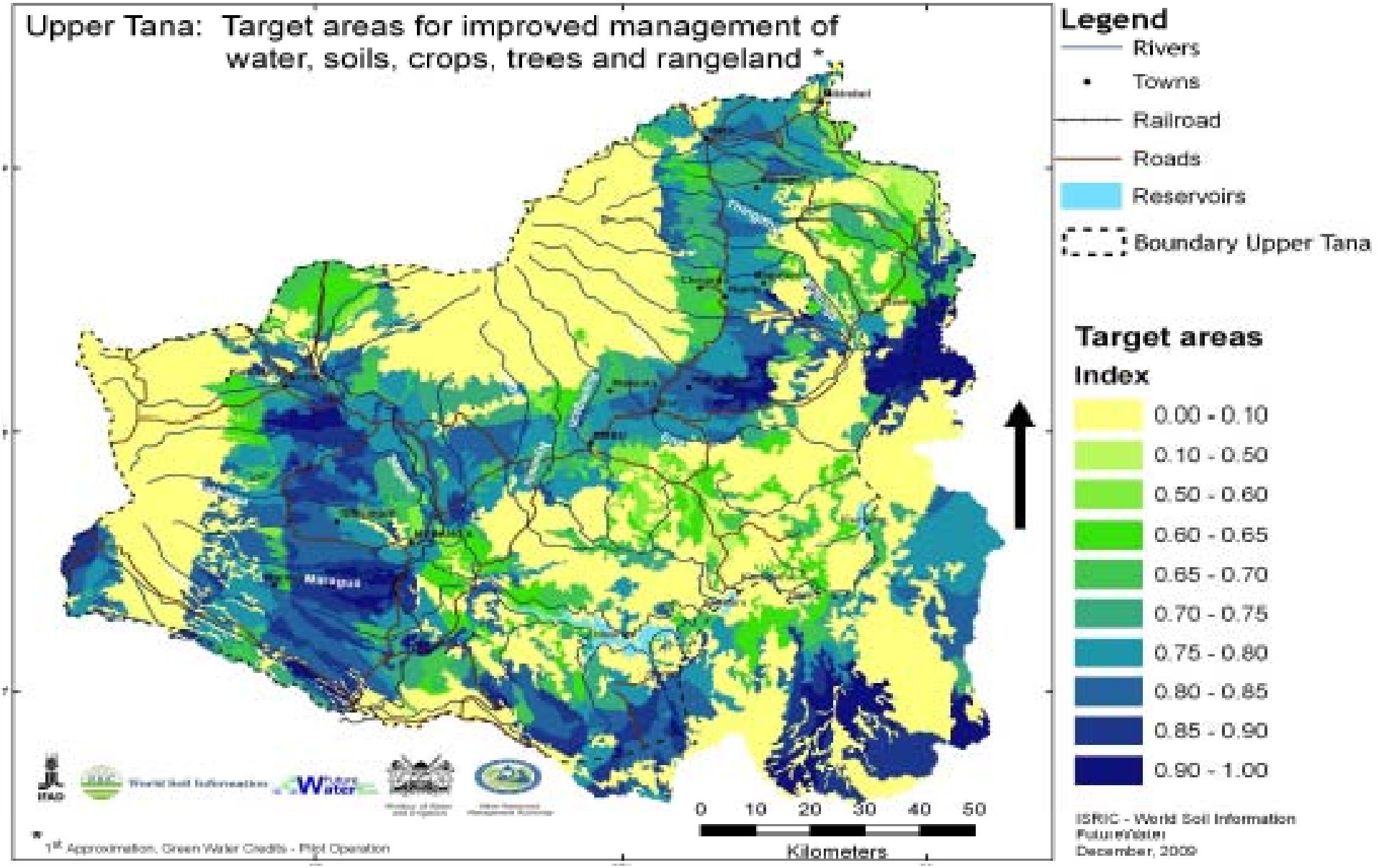
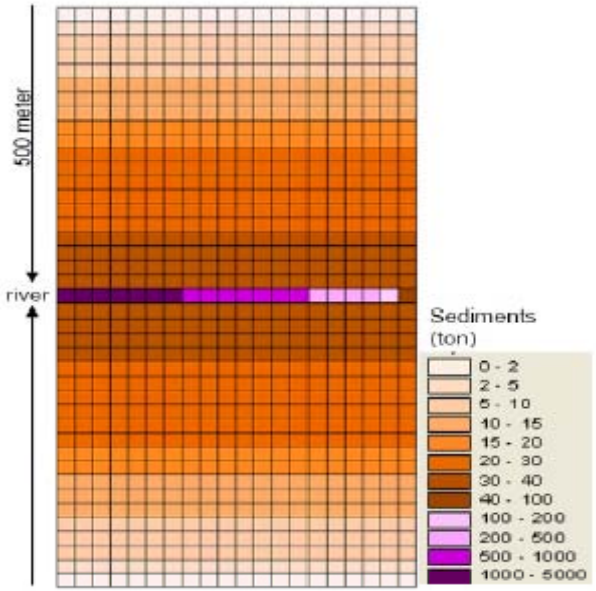


Figure 3.7.1. Spatial distribution of areas with highest hydrological potential and poverty rate

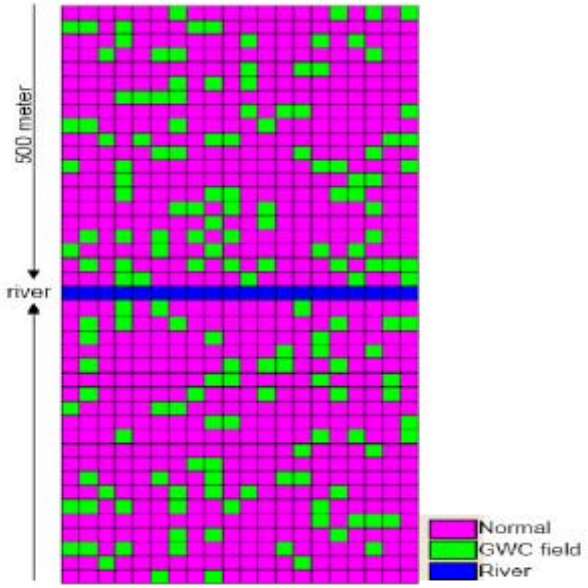


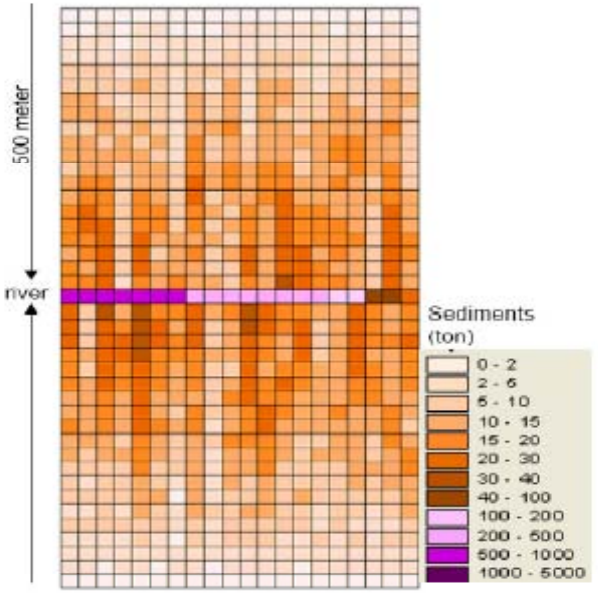
WATER- Hydropower, Green Water Credits Kenya report # 10

www.greenwatercredits.org



Projected erosion without green water management

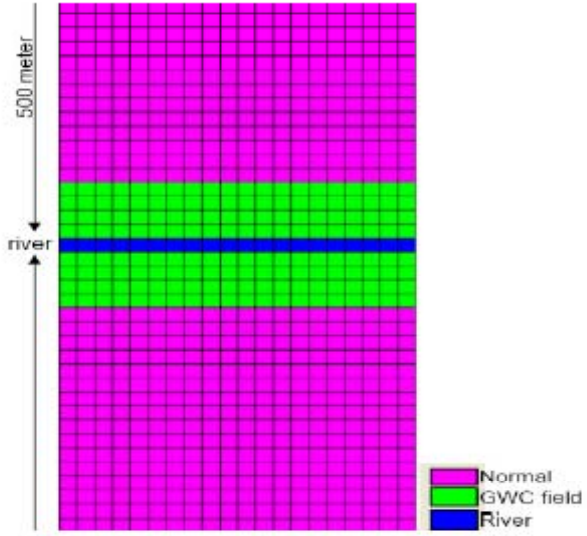


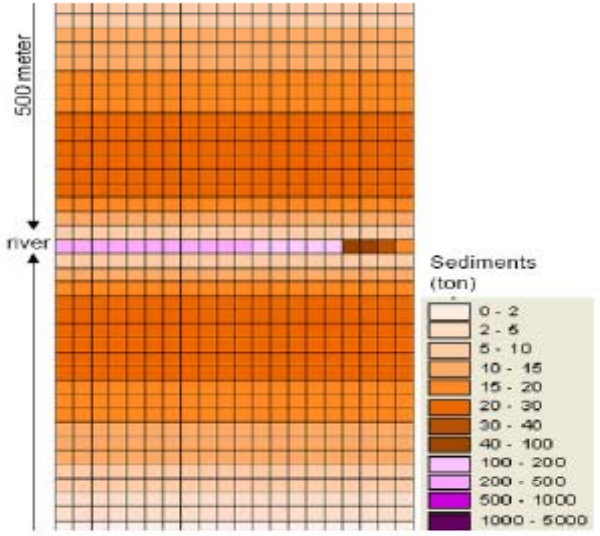


Projected erosion with random 20% uptake of green water management

WATER- Hydropower, Green Water Credits, Kenya

www.greenwatercredits.org





Projected erosion with 20% GWC practices implementation, all next to the river

Source: Kauffman et al, 2007

For Carbon

→engage with an carbon investor from the start to co-invest in the upfront purchase of these carbon benefits :

- Enlarge K-TAMP SLM coverage
- funding the procedures to package K-TAMP carbon benefits for the carbon market:
  - Adjust MRV VCS SALM methodology (submitted by VI, nearly approved)
  - set up a baseline
  - Possibly include a set of SLM that can maximize carbon sequestration and reduce loss
- add components of interest for their CSR and shareholder selling of the idea…

Bo, Viktor and Damas will tell us more about these conditions in their presentations tomorrow

PES Resources

- FAO website on PES: www.fao.org/es/esa/pesal

See especially manual- setting up PES and materials with examples and resources

- Network of PES in the region: http://presa.worldagroforestry.org
- Network of PES in Asia: http://rupes.worldagroforestry.org/
- Database of water PES: www.watershedservices.org
- Newsletters: Katoomba group, especially the regional southern and eastern Africa, and various from Forest Trends (on water, carbon)
- Or email me at Bernardete.Neves@fao.org