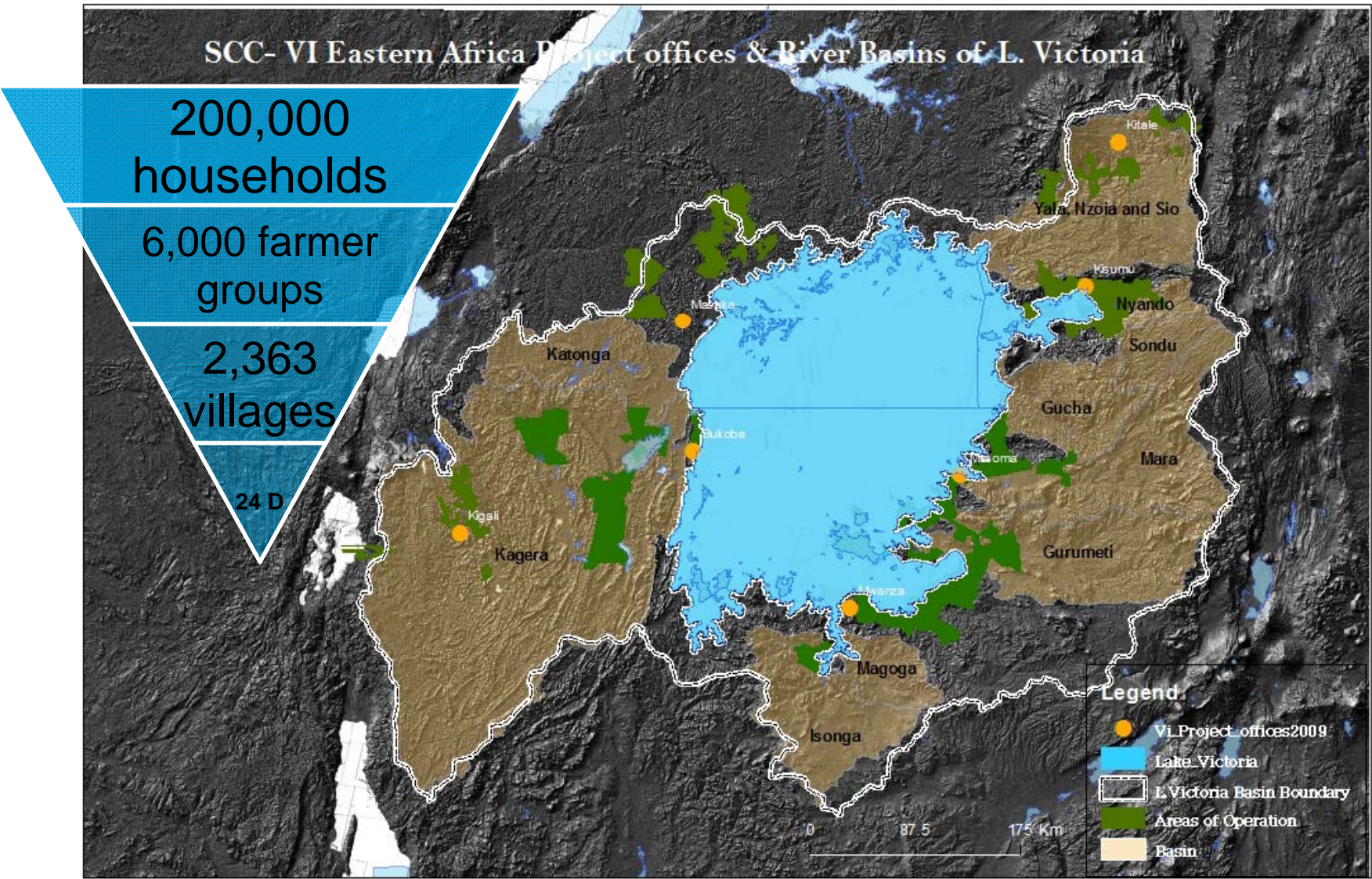




# **KAGERA TAMP – REGIONAL TECHNICAL WORKSHOP ON LAND PLANNING AND MANAGEMENT**

**White Horse Hotel –Kabale, UGANDA  
29-31 August 2011**

# Vi Agroforestry supporting CSOs



# Carbon finance – climate compensation

## 1) Emiti nibwo bulora – “Trees sustain life”

Farmers practicing agroforestry were trees are sequestering carbon under 20 years. 1000 farmers producing 100,000 tCO<sub>2</sub> emission reduction. Following Plan Vivo carbon standard.

- Boundary planting, Fruitgarden, Woodlots, Dispersed interplanting

## 2) Kenya Agricultural Carbon Project

First agricultural and soil carbon finance project in Africa. The World Bank BioCarbon Fund buying credits from 60,000 small holders in western Kenya (1.2 million tCO<sub>2</sub>). Following Verified Carbon Standard (VCS).



## Harvesting agricultural and soil carbon (WIN – WIN – WIN)

Sustainable agricultural land  
management

(SALM) has the potential to

- 1) increase agricultural productivity,
- 2) sequester carbon and
- 3) decrease vulnerability to climate change

# **An Overview of PES the case of “*Emiti Nibwo Bulora*”, Kagera, Tanzania**

Presented at the Kagera TAMP Regional  
Workshop on Land Planning and Management

31<sup>st</sup> August 2011

By: Damas Masologo  
Project Manager , Vi - Agroforestry, Kagera

# Outline

- Introduction
- Overview of “*Emiti Nibwo Bulora*”
- Parties involved in PES
- PES Process
- Opportunities and benefits of PES
- Challenges



# An overview of “*Emiti nibwo bulora*”, Plan Vivo Project



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- ❑ Process for initiating the project started 2007
- ❑ Technical specification developed
- ❑ Initial validation conducted
- ❑ 23 pioneer farmers registered
- ❑ Contracts signed between Vi-Agroforestry and 23 farmers  
Nyaishozi Division, Karagwe District
- ❑ Monitoring mechanism established
- ❑ 1<sup>st</sup> payment effected for 14 farmers out of 23 – paid \$ 1,300
- ❑ 2010 up scaling the pilot to include Bugene and Kaisho areas in Karagwe District, 917 farmers are now registered, of which 210 have signed agreement



# Overview “Emiti Nibwo Bulola” Cont.,



## Technical specifications (Four systems identified)

- Woodlot :  $4 \times 4 = 625$  trees/ha,  $3 \times 3 = 1111$  trees/ha = 140 tCO<sub>2</sub>
- Dispersed inter-planting:  
 $5 \times 10 = 200$  trees per hectare = 61 tCO<sub>2</sub>
- Fruit orchards:  $8 \times 8 = 156$  trees per hectare,  $9 \times 9 = 123$  trees per hectare = 17 tCO<sub>2</sub>
- Boundary planting:  $3 \times 3 = 33$  trees per 100m = 5.6 tCO<sub>2</sub>



# Overview “*Emiti nibwo bulora*” cont.



## Carbon sequestration capacity

□ Pioneer group (23 producers) we have a total of 1861 tCO<sub>2</sub> (the ONLY ones with submission for certificate issuance as per Plan Vivo standards and procedure)

## Other producers

□ New with signed PV agreements in Nyaishozi zone (210 farmers) - total **20,095 tCO<sub>2</sub>**

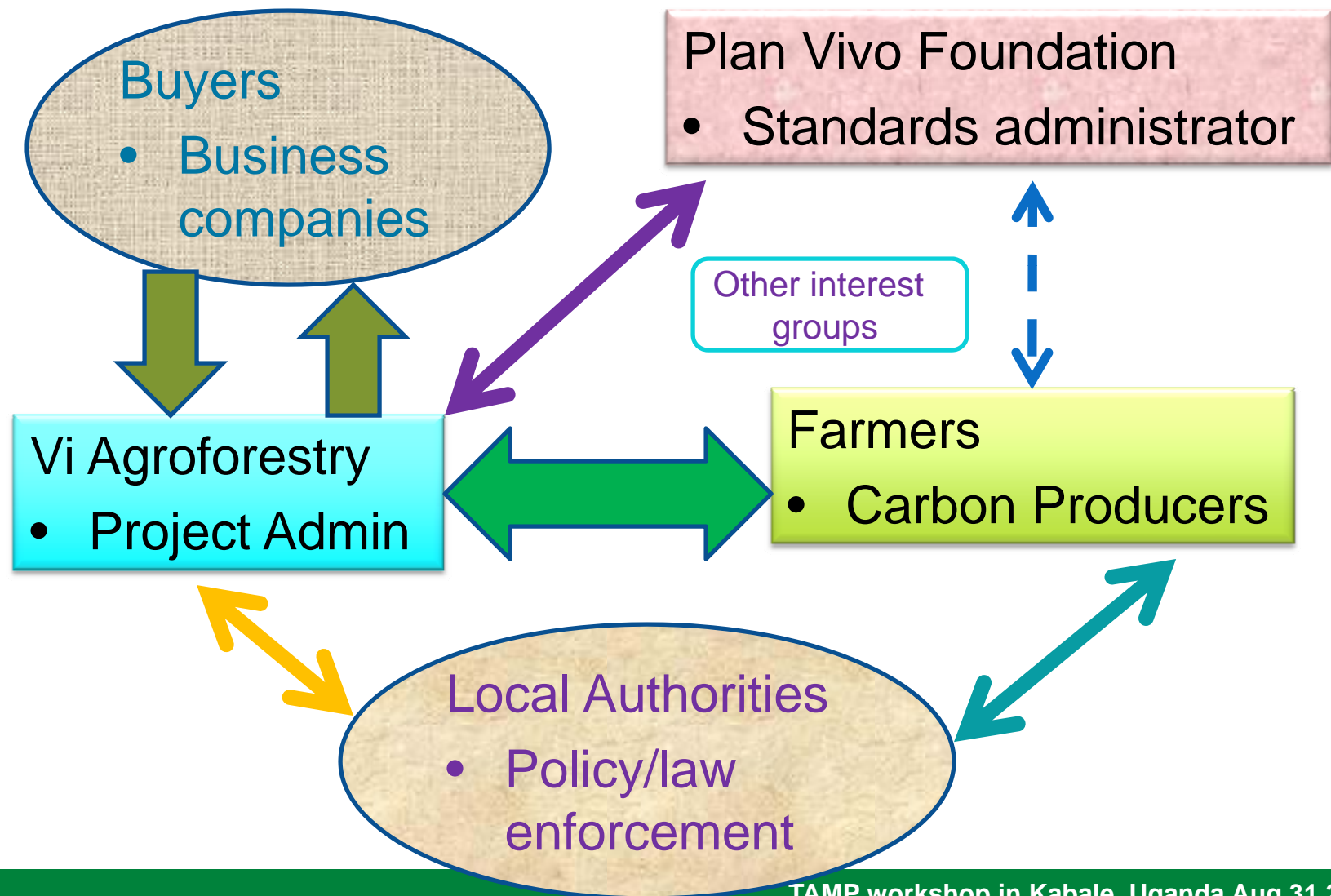
□ 684 more producers who will sign contacts in July 2011, their total carbon is as follows:

- 295 producers from Bugene – **14806 tCO<sub>2</sub>**

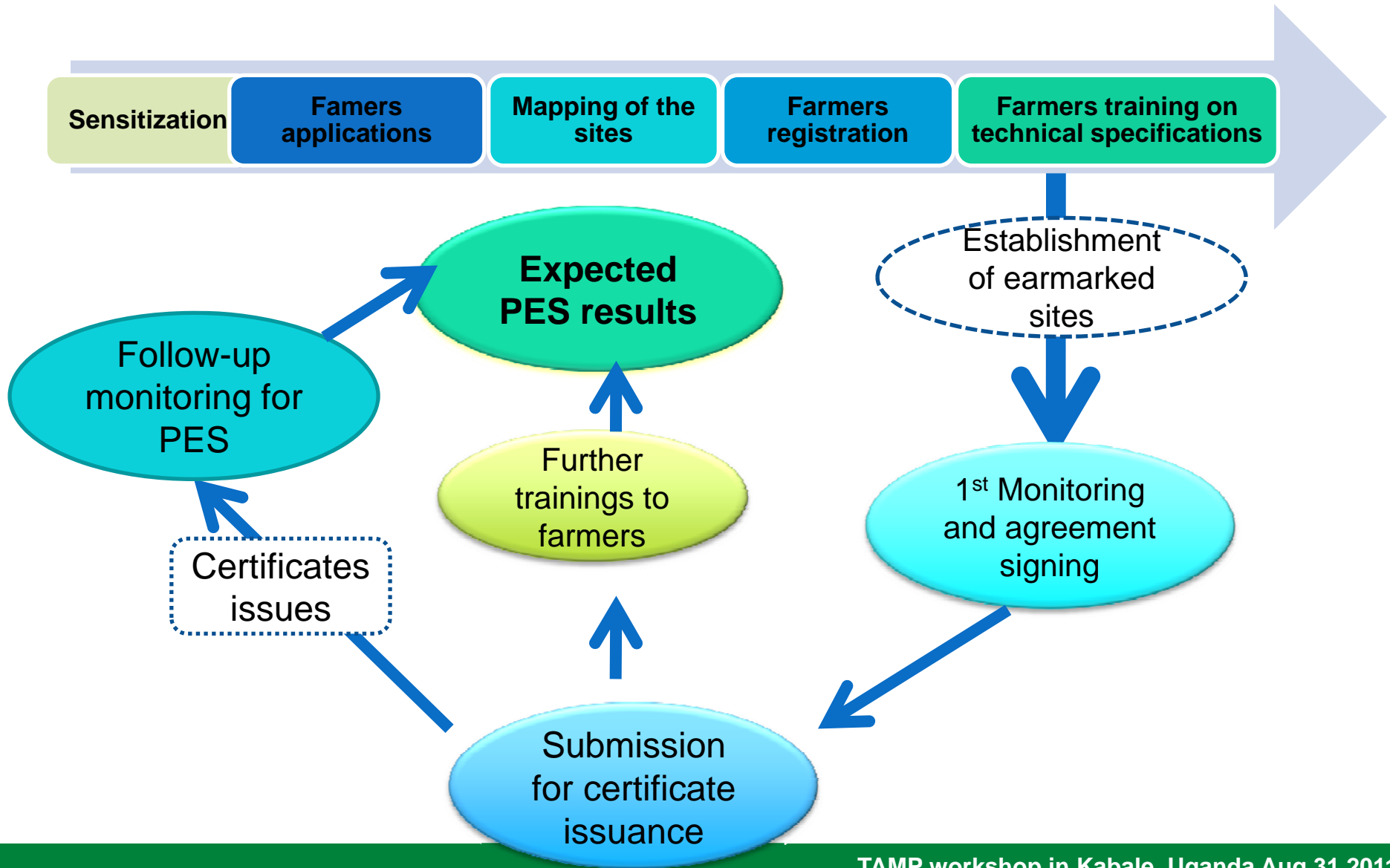
- 389 producers from Kaisho – **23061 tCO<sub>2</sub>**

□ Total carbon for 917 registered farmers so far: **59 823 tCO<sub>2</sub>** which gives an average of **65 tCO<sub>2</sub> /producer**

# Entities involved in PES Scheme



# The PES Process



# PES agreement and Monitoring



- **PES Agreements** are for a duration of ten years, during which payments will be made five times (1st , 2nd, 3rd, 5th and 10th year). The payments are made after monitoring
- **Monitoring:** is meant for submission of certificate issuance to plan vivo foundation and follow up support to farmers, also to determine compliance to terms and conditions for payments

Year	Criteria	
1	50% of plot established	30%
2	100% of plot established	20%
3	Tree surviving not less than 90%	20%
5	Average DBH not less than 10cm	10%
10	Average DBH not less than 20cm	20%

# Some PES Opportunities & Benefits



- Highly motivated farmers to plant and protect trees
- Progressive adoption of other LU practices/technologies which have more ecological benefits
- Added value to marginal lands
- Needs for organizational development (establishment of farmers/producers organizations and their OD process)
- Increasing understanding & use of knowledge on climate change

# Challenges

- ❑ Land tenure issues e.g. Land owners VS land users (especially the marginal lands)
- ❑ Tree species preferences
- ❑ Possession of suitable land site unlikely for some interested farmers
- ❑ Inadequate adherence to the technical specifications, especially spacing (for some farmers) – quality assurance





# Kenya Agricultural Carbon Project

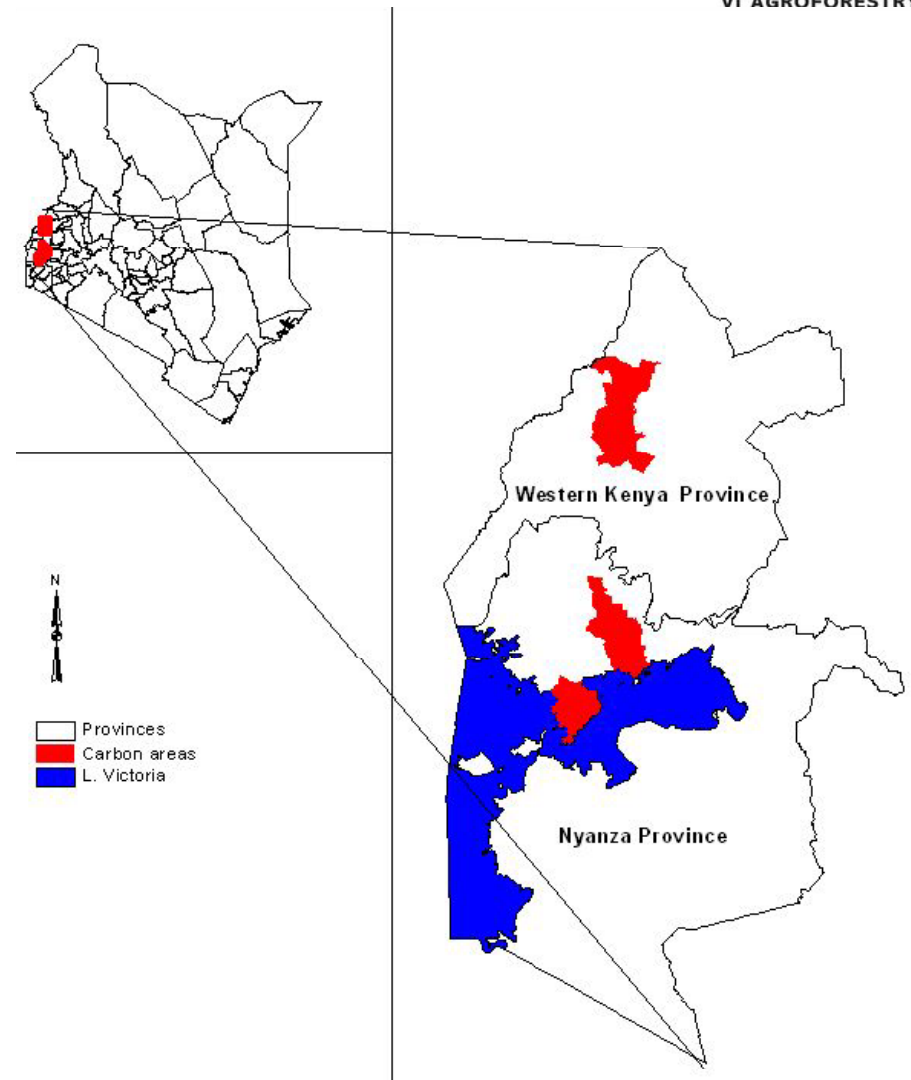
Bo Lager

# Key features

- 6 divisions in Kitale and Kisumu
- 45,000 ha targeted
- 60,000 households in 3,000 farmer groups
- Project roll out plan: 9 years, started 2009
- At the moment 15,000 farmers in 1,100 farmer groups involved and adopting SALM
- 60% permanence buffer
- BioCF ERPA signed in November 2010

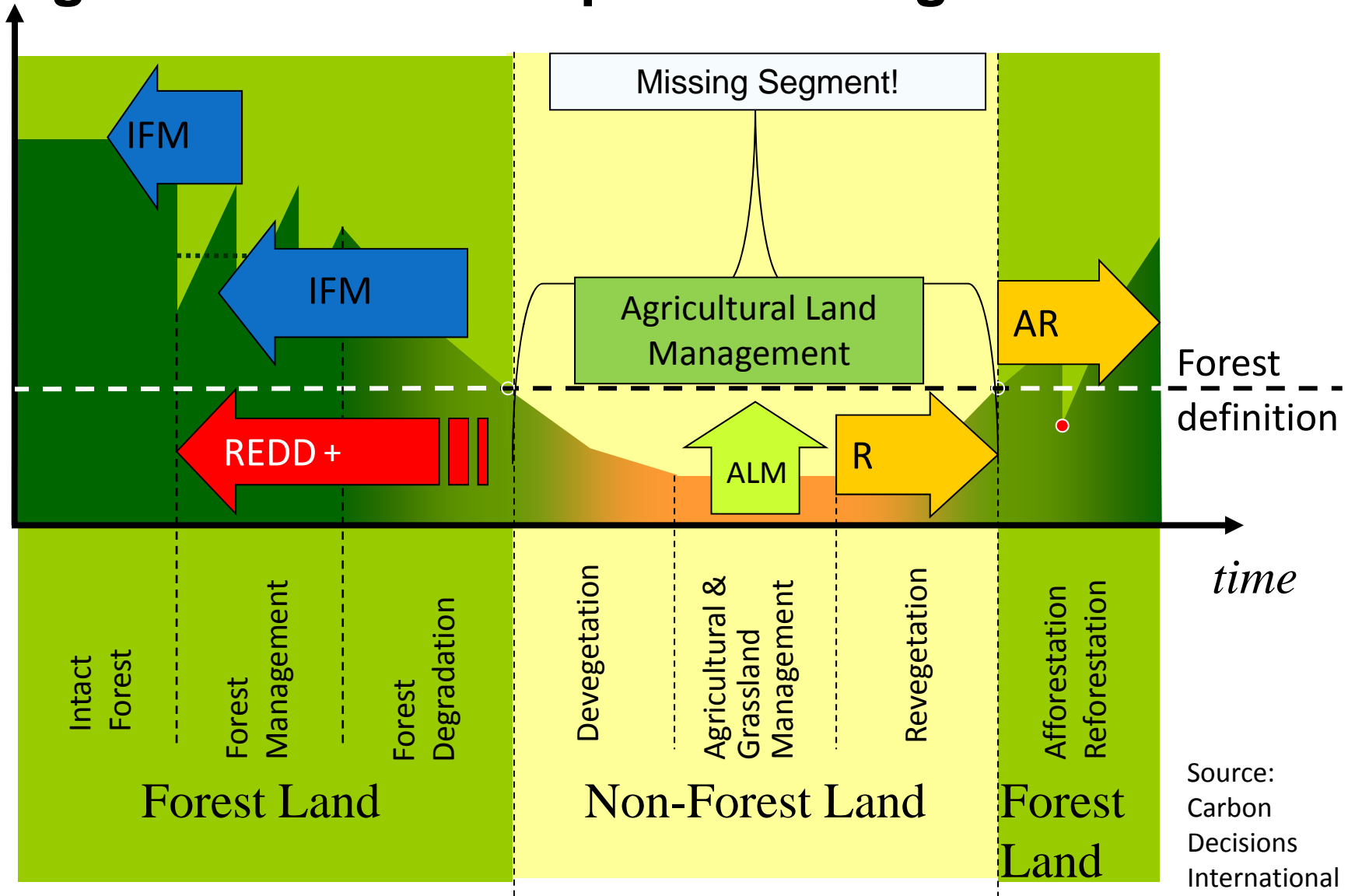


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# Agricultural land management is the “missing segment” for landscape level mitigation



Source:  
Carbon  
Decisions  
International

# Stakeholders in Research/Finance/ Agricultural extension

- Farmer groups in western Kenya
- Vi Agroforestry, Kenya
- Joanneum research, Austria
- Unique Forestry, Germany
- World Bank, Washington
- BioCarbon Fund, Washington
- Voluntary Carbon Standard
- Swedish International Development Cooperation Agency (Sida)



The World Bank  
Carbon Finance Unit  
[www.carbonfinance.org](http://www.carbonfinance.org)





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# World Bank Carbon Funds & Facilities

Total funds pledged = US\$ 2.1 billion (16 governments, 67 firms)



■ **Prototype Carbon Fund.** \$180 million (closed). Multi-shareholder. Multi-purpose.



■ **Netherlands Clean Development Mechanism Facility.** (closed). Netherlands Ministry of Environment. CDM energy, infrastructure and industry projects.



■ **Community Development Carbon Fund.** \$128.6 million (closed). Multi-shareholder. Small-scale CDM energy projects.



■ **BioCarbon Fund.** \$91.9 million (Tranche 1 and 2 closed). Multi-shareholder. Mainly CDM LULUCF projects; some REDD and soil carbon.



■ **Italian Carbon Fund.** \$155.6 million (closed). Multi-shareholder (from Italy only). Multipurpose.



■ **Netherlands European Carbon Facility.** (closed). Netherlands Ministry of Economic affairs. JI projects.



■ **Spanish Carbon Fund.** \$282.4 million (closed). Multi-shareholder (from Spain only). Multipurpose.



■ **Danish Carbon Fund.** \$69.4 million (closed). Multi-shareholder (from Denmark only). Multipurpose.

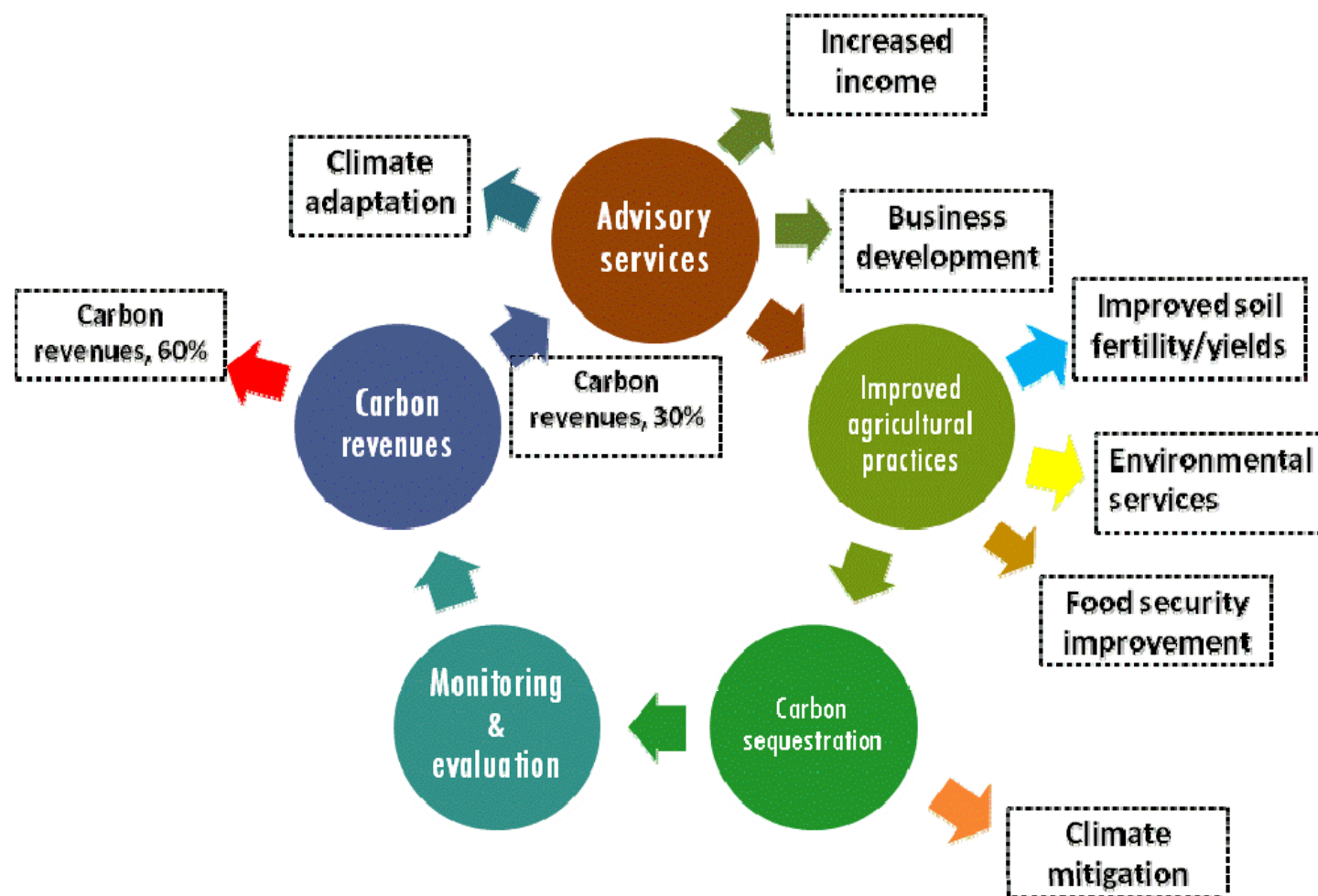


■ **Umbrella Carbon Facility.** \$737.6 million (Tranche 1 closed – 2 HFC-23 destruction projects in China).



■ **Carbon Fund for Europe.** \$65 million. Multi-shareholder. Multi-purpose. Managed with EIB.

# Activity flow and benefits of soil carbon



# SALM



**AGRONOMIC PRACTICES**



**NUTRIENT MANAGEMENT**



**WATER MANAGEMENT**



**TILLAGE AND RESIDUE MANAGEMENT**



**AGROFORESTRY**



**RESTORATION AND REHABILITATION**

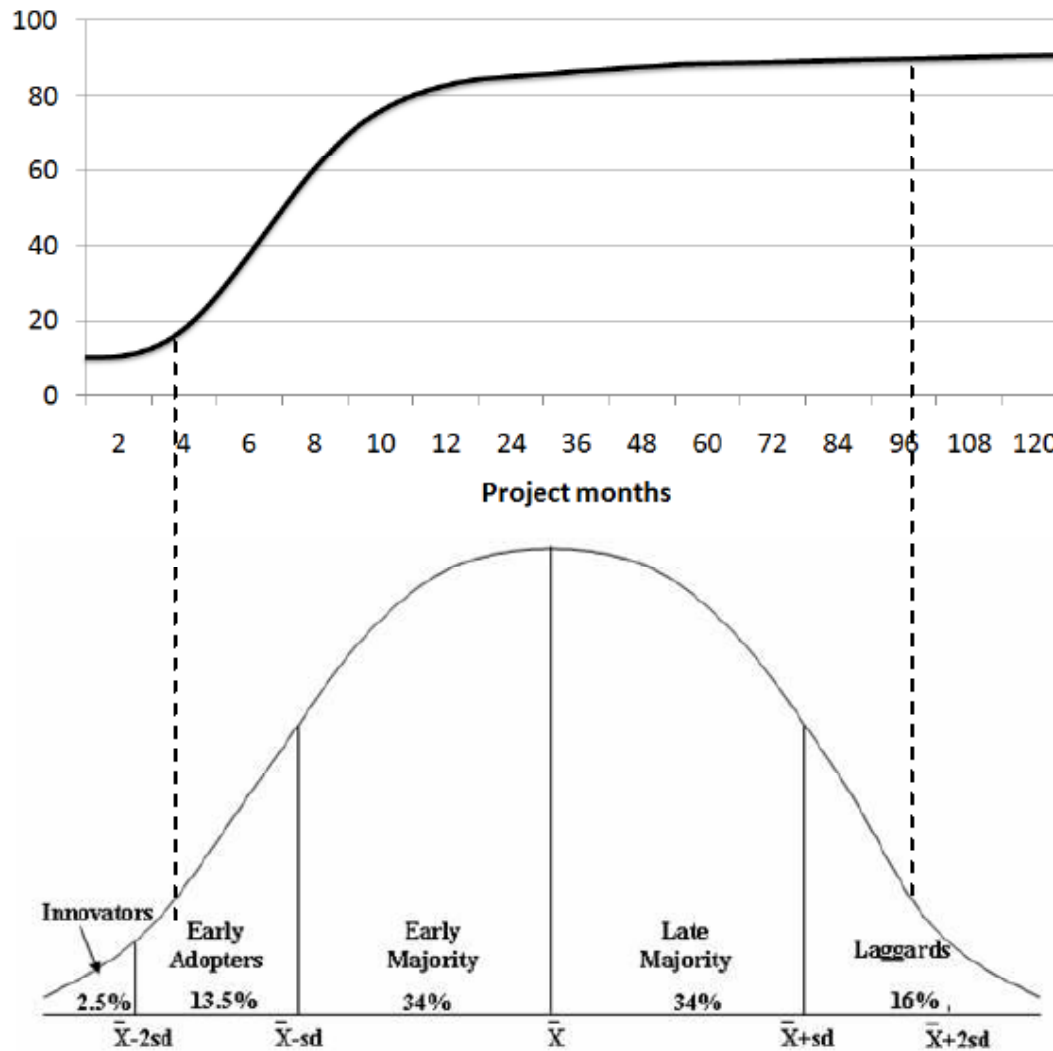


**LIVESTOCK MANAGEMENT**



**EFFICIENT ENERGY PRODUCTION**

# Diffusion of technologies



# Model data input (Roth model)

- Soil clay content in %.
- Climate parameters: monthly mean, minimum, maximum temperature (°C), monthly precipitation (mm), monthly radiation.
- Additional residue inputs, due to crop management changes. IPCC Guidelines
- Additional manure inputs, due to manure management changes IPCC Guidelines (2006)
- Farming system and baseline practice per area
- Average biomass extracted from or left in the field in %
- Average annual biomass production
- Existence and amount of woody perennials
- Amount of biomass burned
- Average number and type of grazing animals
- Manure input, and
- Fertilizer input considering the type and concentration

# Costs for carbon monitoring

	Direct measurement		Crop production & activity monitoring	
	Total cost (\$)	% of carbon revenues	Total cost (\$)	% of carbon revenues
	316,819	13%	316,819	13%
<b>Carbon monitoring</b>	<b>872,740</b>	<b>35%</b>	<b>260,726</b>	<b>11%</b>
	1,293,600	52%	1,293,600	52%
<b>Total costs</b>	<b>2,483,159</b>	<b>100%</b>	<b>1,871,145</b>	<b>76%</b>





# Conclusions

- Concept of carbon payments can be well integrated into tested approaches for promoting sustainable agricultural development
- Low cost, but rigorous MRV systems are essential
- Synergies with objectives of increased productivity and climate resilience must be maximized
- Strong and demand-driven extension systems prerequisite for successful implementation
- Training and capacity building for project entities is essential
- Additional flexibility for carbon payments need to be explored

**...agricultural carbon concept is attractive and need to be scaled-up!**

# Thank you!



# Challenges



VI AGROFORESTRY

- 1 Lack of credible methodologies slows the development of terrestrial carbon projects to be developed.
- 2 High permanence buffer is delaying payment to farmers in the early stages of project.
- 3 Knowledge barrier among small scale farmers and scarce regional technical expertise.
- 4 Market has been biased toward industrial emissions in industrial and energy sectors and buyer's short-term compliance needs rather than long-term mitigation potential.
- 5 Lack of credible and capable institutions
- 6 Difficulties coordinating large numbers of smallholder farmers
- 7 The modest sequestration rates per farmer measuring and monitoring of emission reductions makes the financial model weak.
- 8 The lack of secure up-front finance for initial cost is a hurdle for project developers.
- 9 Lack of holistic livelihood approach in carbon finance
- 10 No functional African carbon facility
- 11 High transaction cost
- 12 Discriminating women in Carbon finance
- 13 There are a risk in carbon finance of attracting unserious actors as project developers
- 14 Life time of land base programmes are generally short