

Transforming the Global Landscape

Deborah Bossio, PhD, Director Soils Research
International Center for Tropical Agriculture

Virtual Briefing, Global Donor Platform for Rural Development, 10 June 2014



‘Landscape’ gaining ground...

- Global Landscape Forum, UNFCCC, landscape.org
- World Bank “Landscape approaches in Sustainable Development”
- Landscapes for People, Food and Nature
- CGIAR Program Water, Land and Ecosystems
- Platform Annual General Assembly 2014, Paris
“Rethinking Rural Development__ Opportunities for new partnerships and territorial approaches in a changing rural environment”





Strong feature of this century is *rapidity* of landscape transformation driven by large investment - can it be sustainable and socially inclusive?




Emerging feature is the dominance of *globalization, income and international trade* as major drivers of land use change




“This globalization has major implications for governance...and adoption of sustainable practices”

Eric Lambin 2014 GLPOSM

Why Landscape?

- Agriculture, water, forests, and food security are all connected
 - Landscape combines geographical and socio-economic approaches and interactions amongst sectors
 - At the landscape scale, governance, ownership and ecology are integrated
 - In landscapes we can achieve multiple goals, sustain communities, produce goods, store carbon, protect wildlife, biodiversity and ecosystem services
- 

CIAT & Landscapes

- Managing the water-food-energy nexus in upper catchment smallholder farming landscapes
 - Kenya
 - Peru
 - Ensuring sustainability and social inclusion during transitions from low intensity agriculture to larger scale farming
 - Colombia
 - Tanzania
 - Building resilience to Climate Change
- 



Upper Tana Basin
Kenya



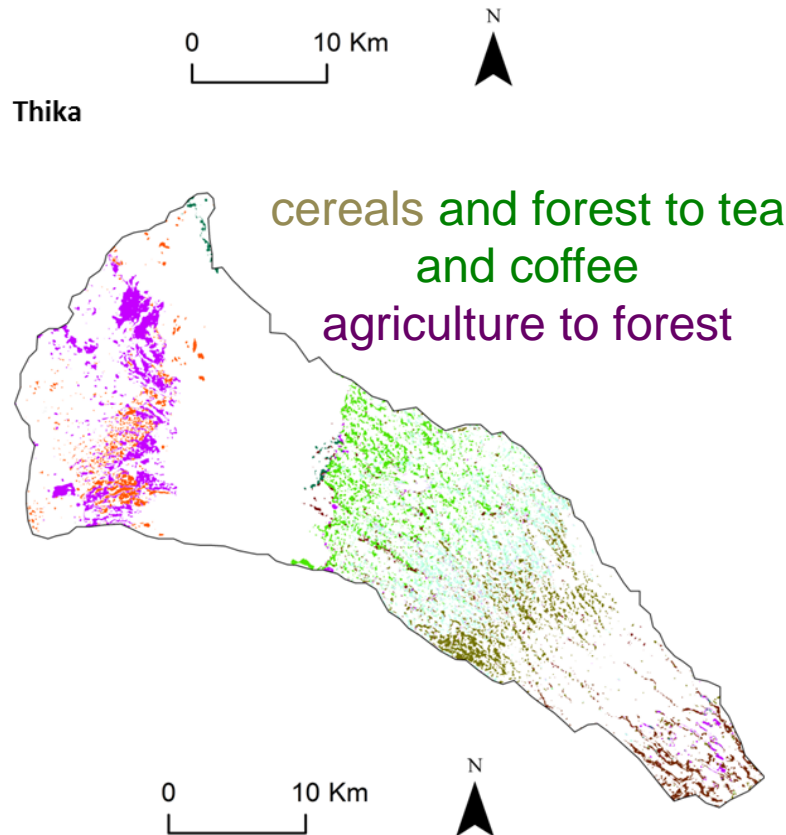
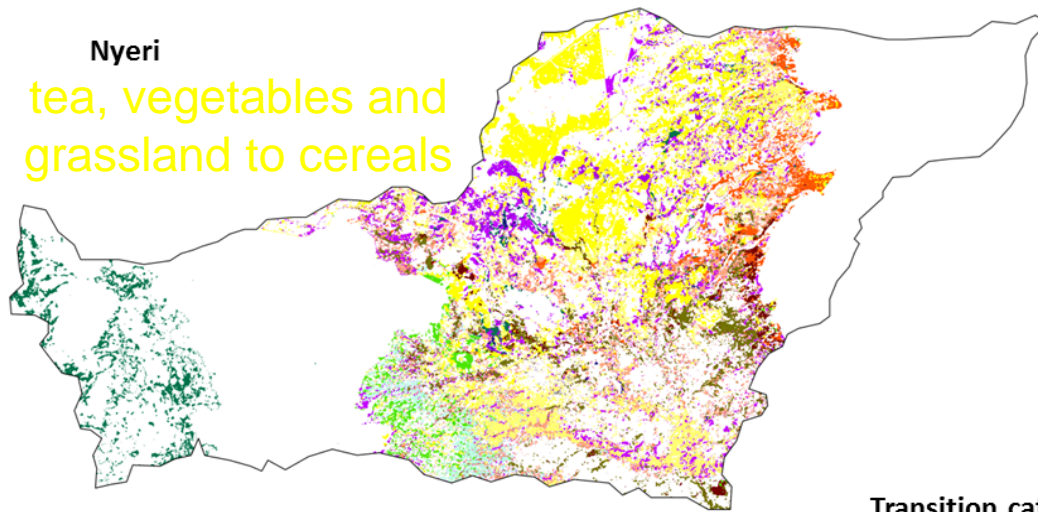
CIAT supplies evidence for payment for ecosystem services to TNC Water Fund, a public private partnership, first in Africa!

--- quantifying and valuing ecosystem services ---












Water Food Energy

- Upland degradation, food insecurity, poverty
- Downstream hydropower, water supplies threatened
- 90% of Nairobi's water
- 70% Kenya's hydropower
- On what basis can investments be made that benefit upstream and downstream ?

Land Use Dynamics 2001-2013

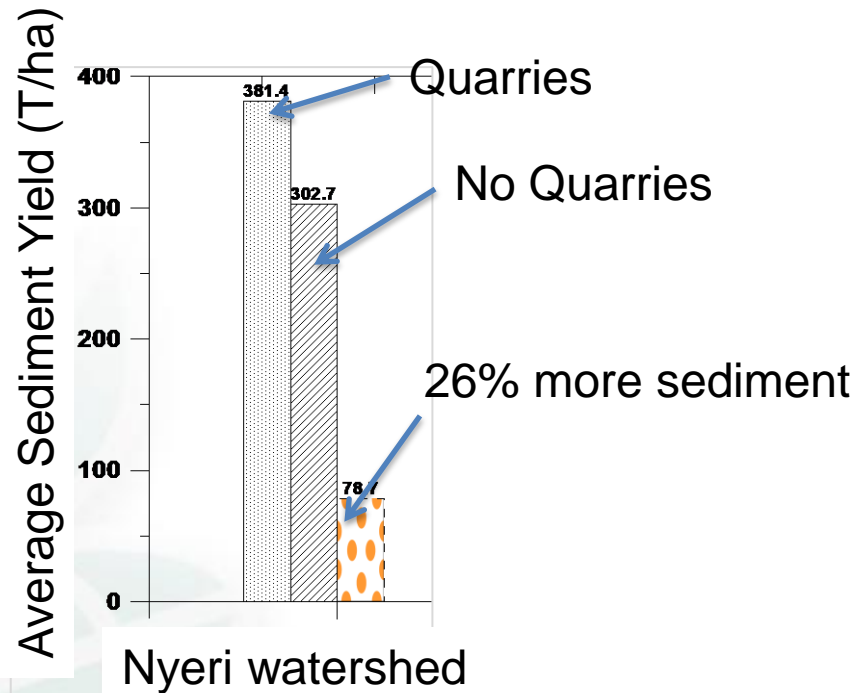


Transition categories

	Na to Na
	Ag to Na
	Na/Ag to Urban
	Na to Coffee
	Tea,Veg,Cereals to Coffee
	Na to Cereals
	Tea,Veg,Coffee to Cereals
	Na to Veg
	Tea,Cereals,Coffee to Veg
	Na to Tea
	Cereals,Coffee,Veg to tea

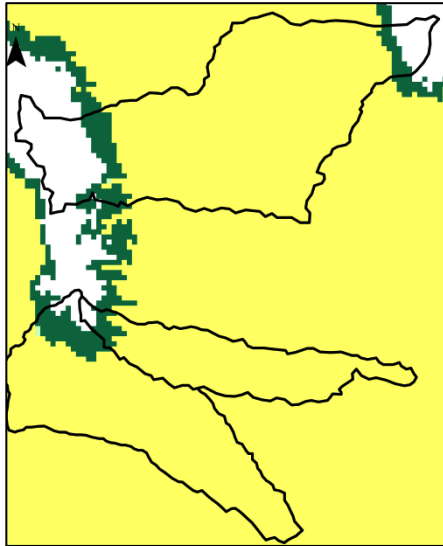
- Cereals (maize) biggest gains
- Forest and grassland biggest loses
- Within agricultural areas experiencing the most dynamic change

Many Sediment Sources in Landscapes

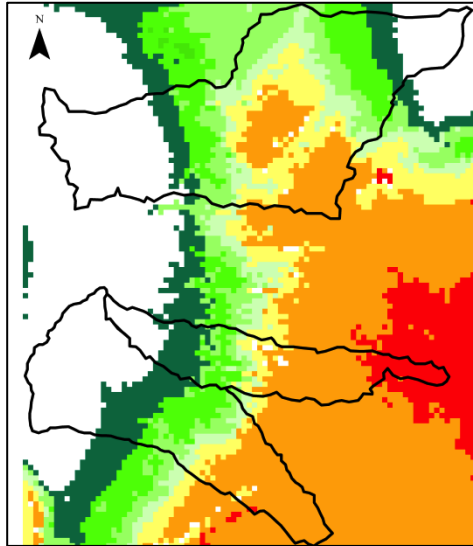


Climate Change Futures?

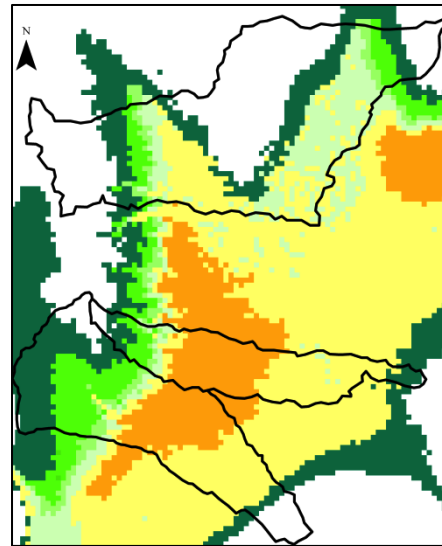
MAIZE



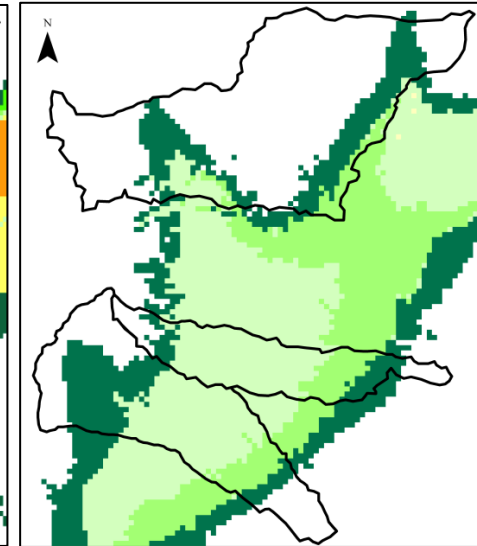
BEAN



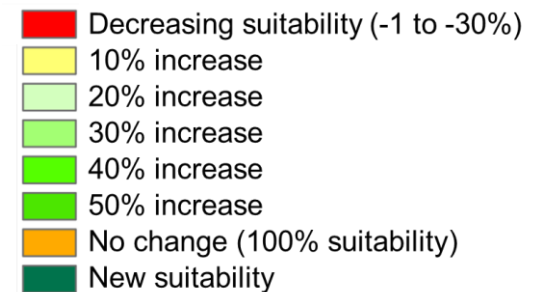
COFFEE



TEA



Suitability Increased for
maize and beans in existing tea zones
coffee in some existing tea zones
tea in existing coffee and forest zones



Combined current trends and future suitability to develop future scenarios and resulting sediment loads

Plausible Scenarios

Starbucks

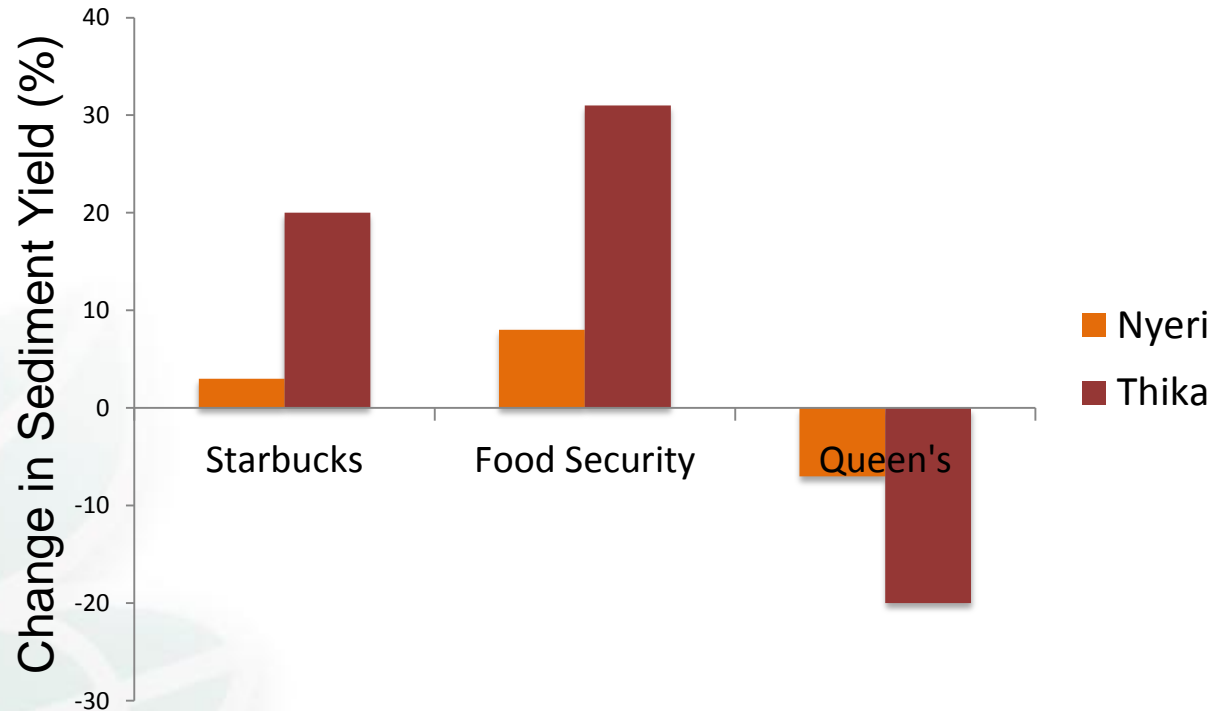
60% tea → coffee

Food Security

60% tea → annual crops

Queen's

40% annual crops → tea





Water Food Energy

- The Ministry of Environment in Peru established a new scheme for rewarding ecosystem services in the Cañete River basin and designated the basin as an official pilot for a national benefit-sharing program
- If successful, the pilot will be scaled up and implemented in an additional fifty-three river basins
- The ministry developed an ecosystem services law, aimed to foster more benefit-sharing mechanisms, scheduled to be ratified during 2014.

Cañete, Peru

Financial, education and health benefits are now flowing to those caring for the environment upstream

waterandfood.org/outcome-stories/

Colombia



In partnership with Gov't and Corpoica, CIAT monitors options to improve ecosystem services


Green Growth

- Large internal and external investment
- Commercial agriculture, mining, hydropower
- Massive environmental change
- Will this development be sustainable and 'green' with benefits equitable?



As a member of the Southern Agriculture Growth Corridor of Tanzania (SAGCOT) Green Reference Group, CIAT research will help manage equity and maintain soil health, ecosystem services, and be climate resilient

What's different?

- Institutions and partnership
 - Integrating frameworks, e.g. ecosystem services
 - Scale, bigdata, models, games
 - Transitions, trajectories, pathways
 - Multiple sector
 - Negotiating Trade-offs
 - Measure & Monitoring
 - Anticipating climate change
- 

Challenges

- Investing in ‘landscapes’
 - Multiple definitions
 - Investing in enabling institutions
 - Longer term requirements
 - Setting goals and monitoring progress
 - Embracing variability, managing complexity

See the Agriculture Ecosystem Blog for a piece arising from the Global Landscape Forum at UNFCCC 2013
wle.cgiar.org/blogs/2013/11/22/how-can-investing-in-landscapes-meet-a-bankers-bottom-line/
and
“Financing Strategies for Integrated Landscape Investments”
Landscapes for People, Food and Nature, 2014

Opportunities

To create sustainable futures in rural development:

- Support nascent sustainability agendas in developing countries and SDG's
- Ensure development investment planning and implementation benefits from new tools and data, to be integrated and evidence based
- Embrace the remote drivers in landscapes, and opportunities for remote governance



Thank You

