

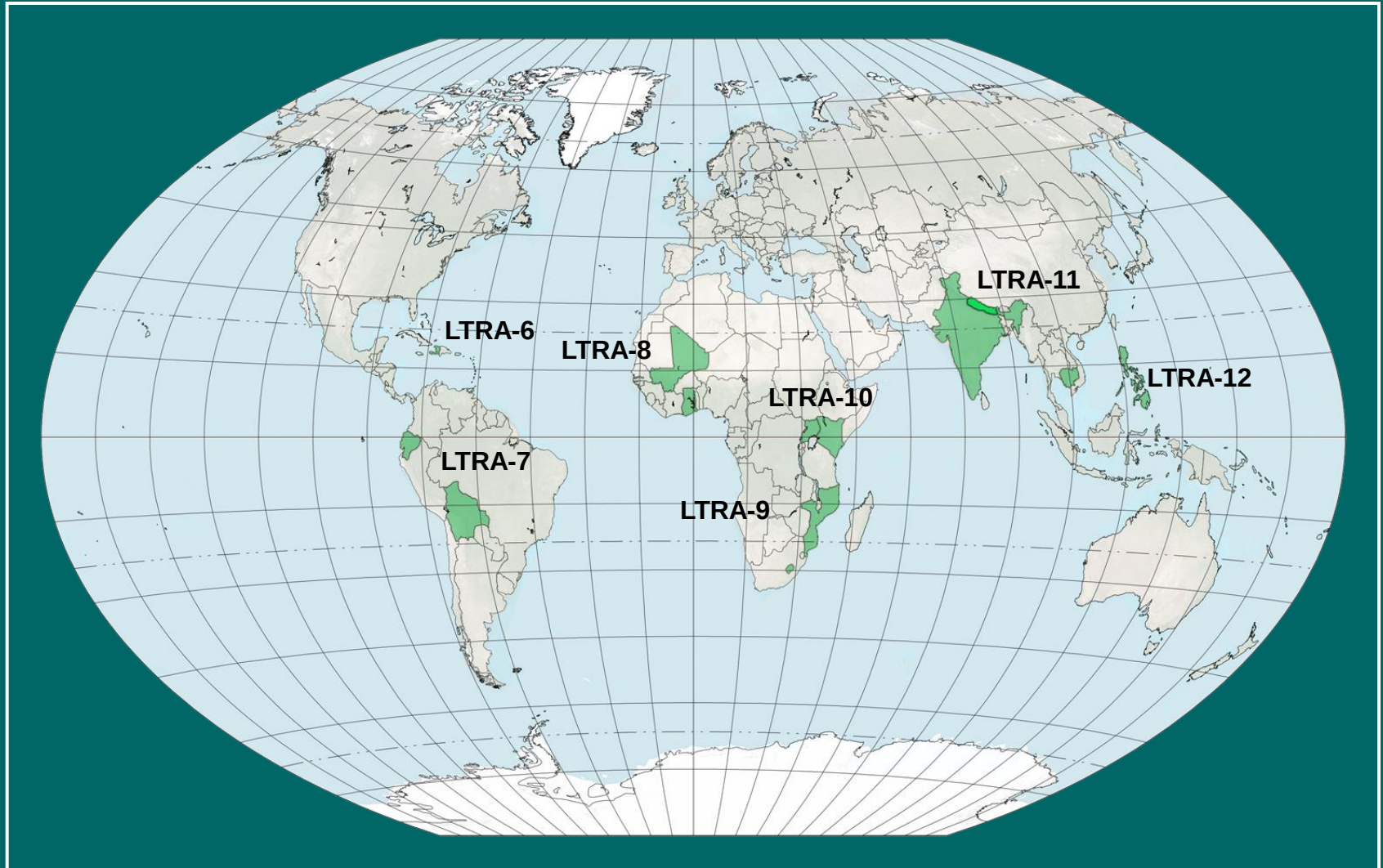
Scaling up technologies on sustainable agriculture and natural resource management

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Feed the Future Innovation Lab for Sustainable Agriculture and Natural Resource Management (SANREM)



SANREM's project locations



Bolivia, Ecuador, Haiti, Ghana, Kenya, Lesotho, Mali, Mozambique, Uganda, Cambodia, India, Nepal and the Philippines

Conservation agriculture

- Minimize soil disturbance from tillage
- Maintain a year-round soil cover
- Use crop rotations or mixtures



Maize – lablab intercropping



Field preparation on residues in Uganda

Resilient sustainable intensification

Goal

TRANSFORM THE SYSTEMS

Increased production, income, resilience, social capital; improved value chains, empowered women, natural resources management

Domain

Biophysical

Socioeconomic

Genetic

Practice

Conservation agriculture
Perennial agriculture
Water harvesting
Low-scale irrigation
Agroforestry
ISFM/BNF
Farming practices
IPM
Organic agriculture

Microfinance
Crop storage
Market analysis and development
Farmer aggregation
Women empowerment
Value chain improvement
Public-private partnerships

Improved seeds
New varieties
GMOs
Biotechnology
Germplasm conservation
Promotion of neglected crops

Output/
Indicator

> Crop yield
Zero net land degradation
>SOC
Healthy crops

> Farm income
< Input costs
Better market access
Lower risk
> Crop prices

> Crop yield
Multiple crops per year
< Pest and diseases
Climate change adaptation/mitigation

Scaling up conservation agriculture at SANREM closing phase

- Document and share successful technologies
- Examine opportunities for scaling-up
- Identify priority actions for moving the process forward
- Interact with agriculture sector participants which can follow up with successful technologies
 - ✓ Belmont Forum and ITDA (India)
 - ✓ McKnight Foundation (Bolivia)

Selected cropping systems

- The Philippines (Mindanao)

- ✓ Maize (Two crops per year) + *Arachis pinto*
- ✓ Maize + cowpea relayed with upland rice and cowpea (1/2 population density), no till, herbicide, fertilization



Upland rice-cowpea
intercropping



Adlai variety trial

- **West Africa (Northern Ghana and Mali)**

- ✓ Maize-soybean rotation, minimum till, tied ridges, herbicide, P fertilization (Ghana)
- ✓ Maize-peanut/Sorghum-cowpea/Millet-cowpea intercropping, minimum till, ACN, fertilization, herbicide (Mali)



**Amenagement en courbes
de niveau**



Maize– soybean intercropping

- **Andes (Central Ecuador)**

- ✓ **Medium elevation watersheds: Maize-oat vetch – bush bean rotation, no till, residues, fertilization (maize), herbicide**
- ✓ **High elevation watersheds: Potato- oat vetch – barley –beans, minimum till, residues, fertilization (potato, barley), herbicide**



Barley in potato system



Grass and native shrub strips

- **Northwestern Cambodia**

- ✓ **Biannual rotations:**

- Soybean + sorghum + pigeon pea/Maize + pigeon pea

- Maize + pigeon pea/cassava + pigeon pea + cowpea

No-till (chiseling for cassava), fertilizer, herbicide

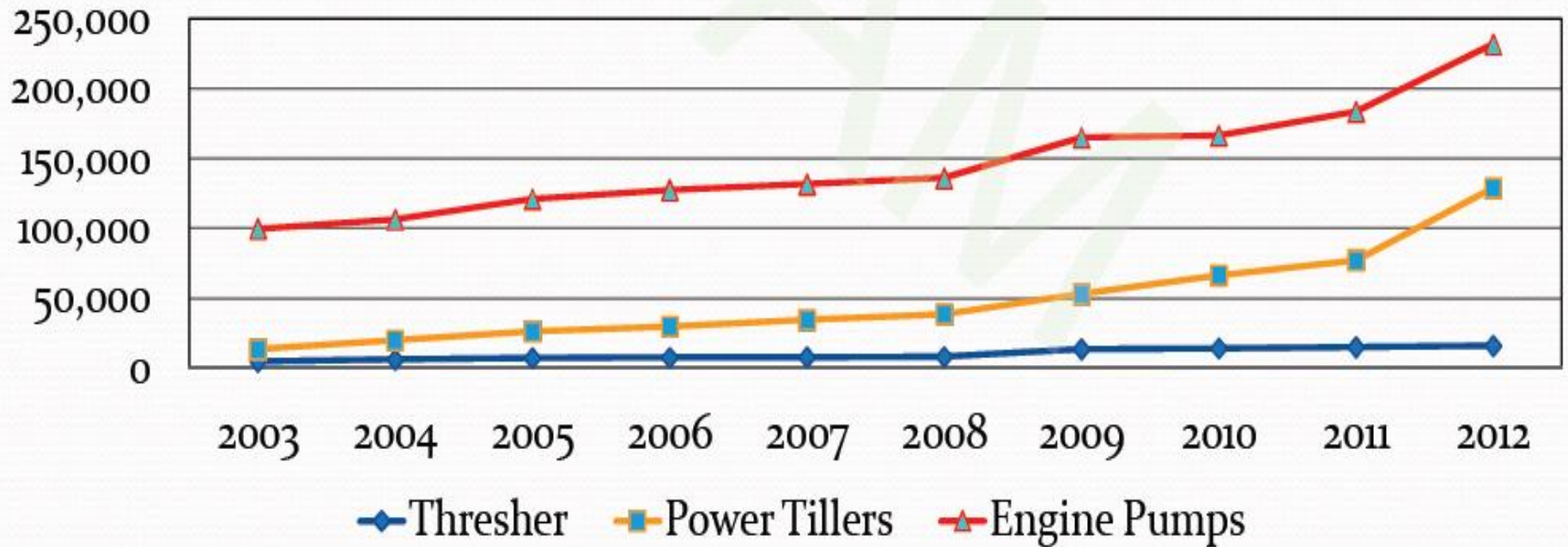


Pigeon pea



Stylosanthes guianenses

Farming implements in SE Asia



Imports
from
Brazil

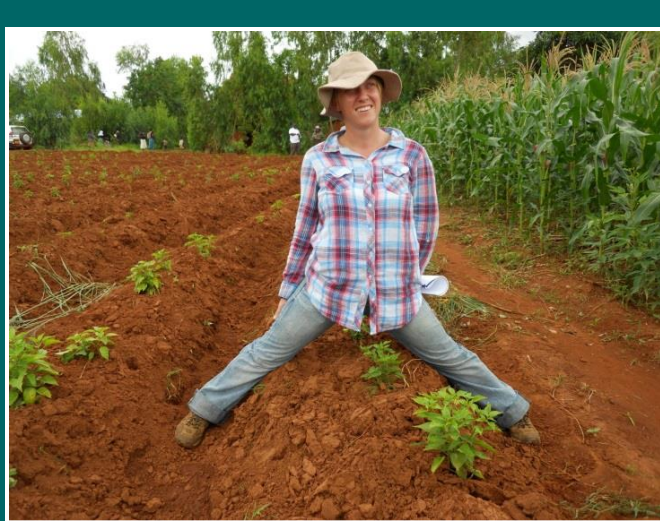


Implements built in Thailand

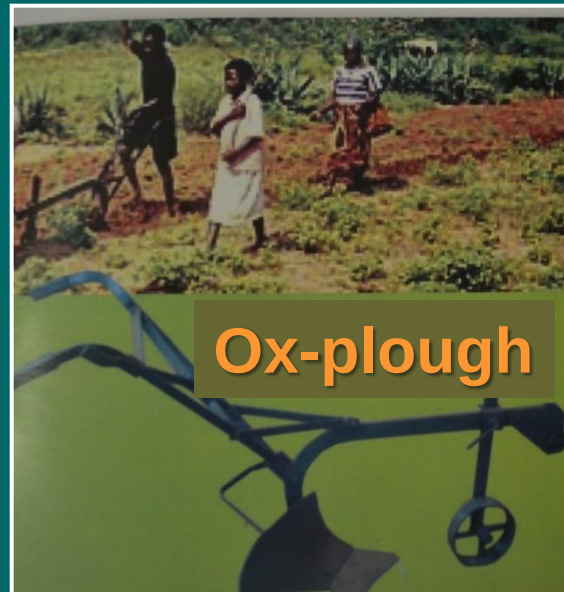


Farming equipment for Sub-Saharan Africa

Region	Land preparation type (%)		
	Manual	Animal	Engine
Sub-Saharan Africa	65	25	10
Other developing regions	25	25	50



Crop ridges in Malawi

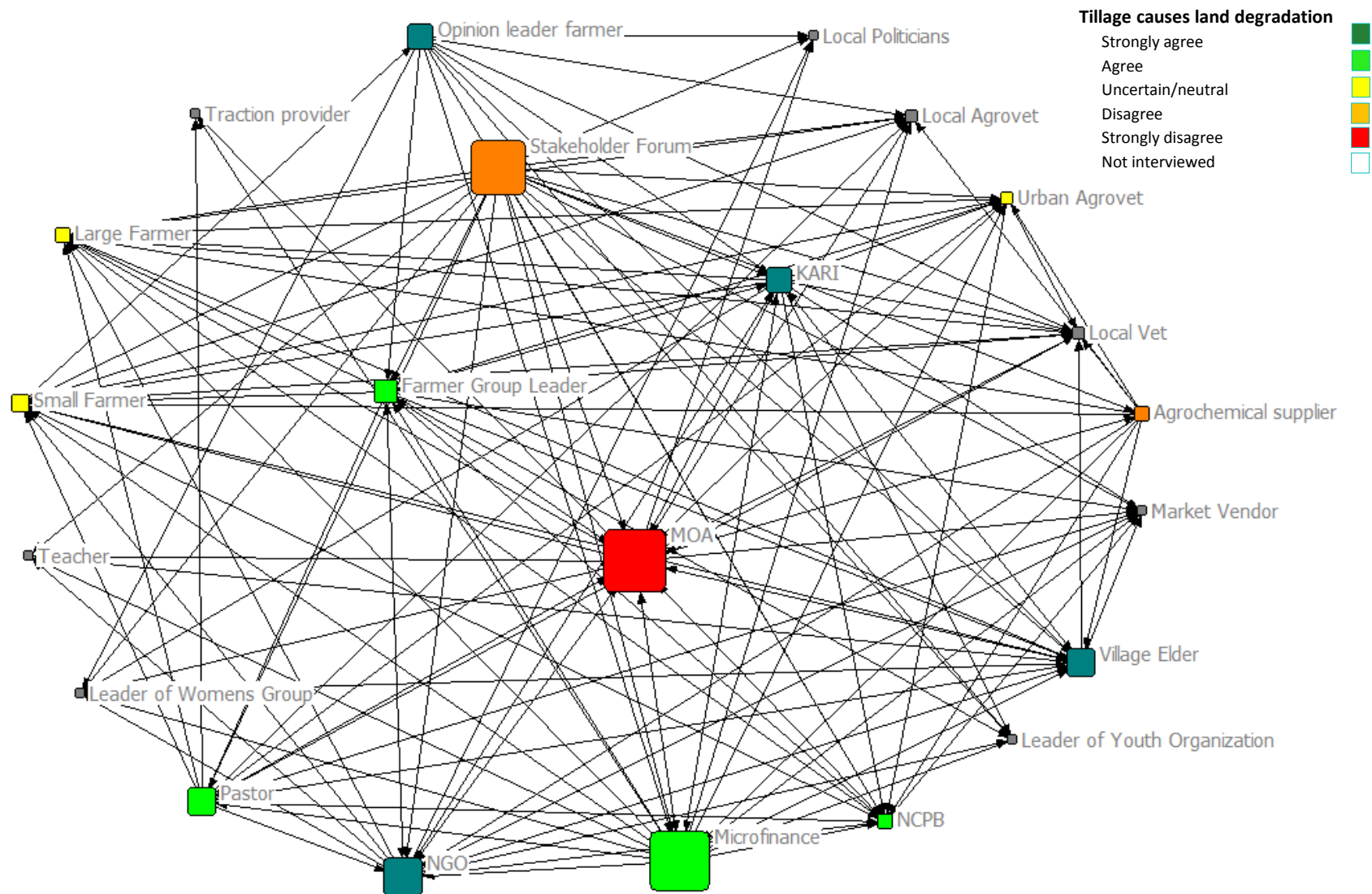


Mid-size tractor

Multi Functioning Implement (MFI)



Mapped network of agricultural information flows and beliefs



Conclusions

- Technology transfer strategies and funding for scaling-up should be included since inception
- New knowledge and information should be documented and shared during the program closing phase
- Multi-agent technology networks instead of linear extension pathways are needed

Thank you

