EVERGREEN AGRICULTURE & ITS LINK TO FARMER MANAGED NATURAL REGENERATION

Jane Kugonza

And

ICRAF Uganda Country Team

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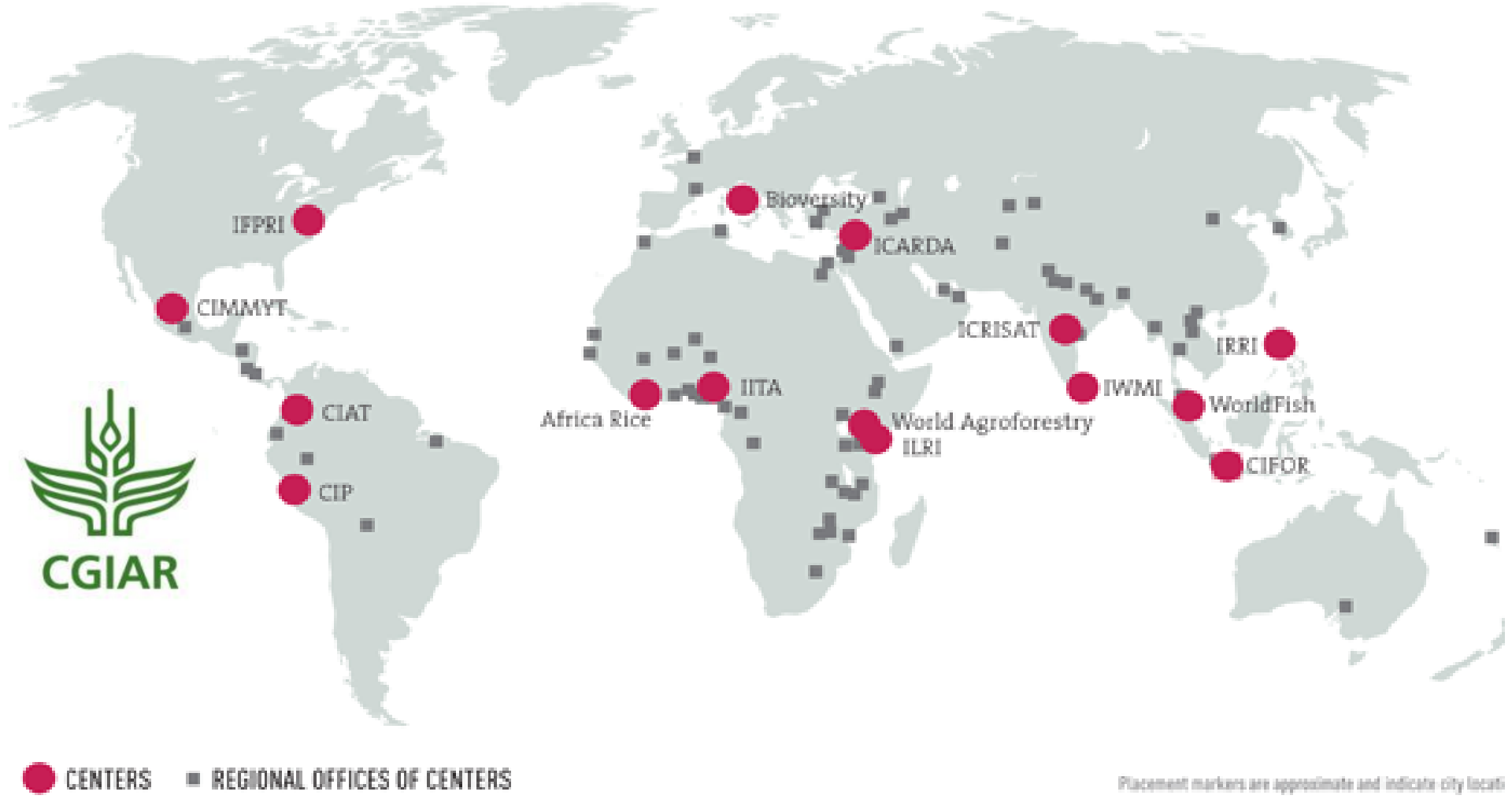
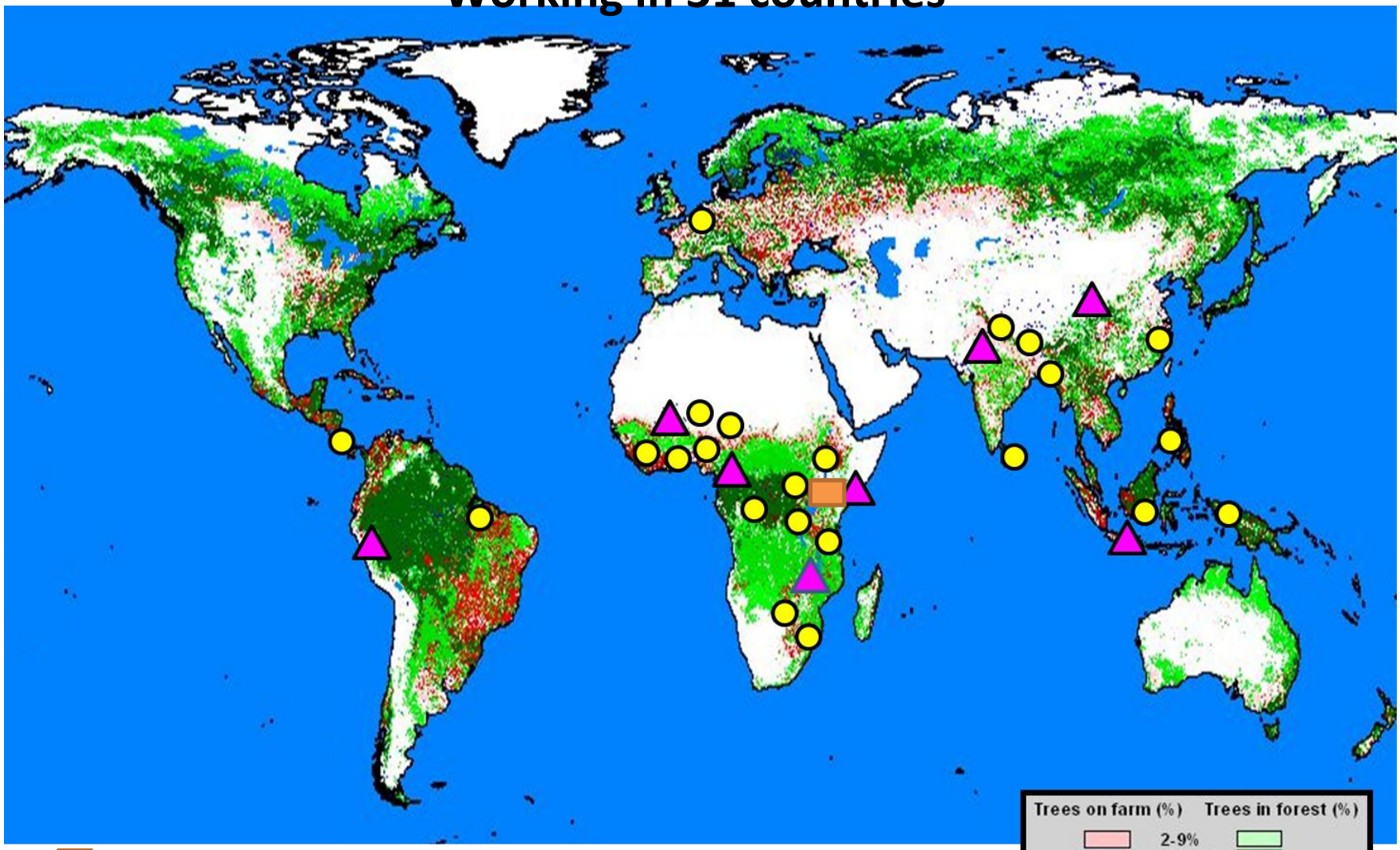
Outline

- **ICRAF – who we are & what we do?**
- **Evergreen Agriculture**
- **Types of Evergreen Agriculture**
- **Advantages of Evergreen Agriculture**
- **Farmer-Managed Natural Regeneration (FMNR)**
- **FMNR and Evergreen Agriculture**
- **Some example of evergreen landscapes**
- **Conclusion**

ICRAF (World Agroforestry Centre) is one of the 15 CGIAR centers that focus on Agricultural Research for Development



ICRAF's HQ, Regional & Country Offices
Working in 31 countries



- Headquarters - Nairobi
- Regional/Sub-Regional Offices
- Country Offices

Our focus is Agroforestry – what is it?

- Integration of useful trees in farming systems and their management in rural landscapes to enhance productivity, profitability, diversity and ecosystem sustainability.

- **Central pillar is farming with trees to improve livelihoods and environment**

ICRAF - Our Vision

A rural transformation in the developing world as smallholder households increase their use of trees in agricultural landscapes to improve food security, nutrition, income, health, shelter, social cohesion, energy resources and environmental sustainability.

ICRAF Mission

To generate science-based knowledge about the diverse roles that trees play in agricultural landscapes, and to use its research to advance policies and practices, and their implementation that benefit the poor and the environment.

ICRAF – what we do?

- Generate science-based knowledge about role trees play in agricultural landscapes & livelihoods
- Address poverty and environmental problems using tree-based solutions
- Working with partners – develop new technologies, promote adoption to realize impacts
- Use research to advance policies and practices that benefit the poor and the environment.

What is EverGreen Agriculture?

A form of more intensive farming that integrates trees with annual crops, maintaining a green cover on the land throughout the year (Garrity et al. , 2010).

Evergreen farming systems are ‘double- story’ featuring both food crops and trees are considered climate-smart.

Evergreen Agriculture cont'd

- The aim is sustaining a green cover on the land throughout the year.

- Overall indicator of their effectiveness is building a healthy soil and environment, while increasing the resilience of the farm enterprise to a variety of shocks.

Types of Evergreen Agriculture

1. Conventional agriculture interplanted with trees

2. Conservation agriculture with trees (CAWT)

3. Farmer-Managed Natural Regeneration (FMNR)

Some Examples of Evergreen Agriculture

- *Faidherbia albida* in maize production systems (Tanzania, Zambia, Malawi)
- Agroforests and home gardens (e.g. Chagga in Tanzania)
- *Grevillia robusta* intercropped in maize and other crops for timber, fodder & fuel (E. Africa)
- Improved fallows with leguminous tree/shrub species (e.g. *Sesbania sesban*, *Gliricidia*) in semi-arid areas
- The fertilizer tree systems in southern Africa trees in maize (e.g. *Gliricidia* and *tephrosia* in Malawi)

Positive effects of trees on yield- *Faidherbia albida* in Zambia

Advantages of Evergreen Agriculture

1. **Increased and more stable food crop yields**
2. **Regeneration of soil fertility**
3. **Improved microclimate** and soil water to buffer crops to rainfall variability
4. **Enhanced dry season fodder availability**
5. **Dramatically increased carbon accumulation** in food crop systems: 6-10 t CO2/ha/yr
6. **Enhanced biodiversity** in annual crop systems
7. **Reduced deforestation** due to enhanced potential in rainfed agriculture

Farmer-Managed Natural Regeneration (FMNR)

- FMNR is the systematic regeneration of trees from living tree stumps, roots and seedlings
- It provides one means of tackling the issues of climate change – quickly and in a large scale.
- The challenge is how to convince farmers in Uganda to appreciate FMNR.
- FMNR can complement other re-vegetation efforts

FMNR and Evergreen Agriculture

- **FMNR is considered one of the types/practices under Evergreen Agriculture**

- FMNR when practiced in agricultural land is similar to deliberate retention of useful trees on farms, a concept used in agroforestry as well as evergreen agriculture.
- Agroforestry, evergreen Agriculture, conservation agriculture with trees, etc. all considered climate-smart agricultural practices have now been endorsed by governments in Africa with a call to action.

Fodder for livestock

Calliandra planted as a block – fodder bank

Improved fruits are attractive to farmers

Baits for improving nutrition and income

Integrating beekeeping into FMNR for increased benefits

Trees scattered in farm lands and around homesteads

Woodlots for degraded sites

Nitrogen fixing shrubs to improve soil fertility

Conclusion

1. FMNR is a cheap, fast and a feasible means of reclaiming degraded areas
2. FMNR can complement rather than replace other tree growing efforts
3. ICRAF is keen at providing proof of FMNR concept for its wide-scale adoption
4. Awareness is critical in promoting FMNR – change of attitude
5. We can all make a contribution in promoting FMNR

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World Agroforestry Centre

The World Agroforestry Centre
United Nations Avenue, Gigiri
P.O Box 30677 Nairobi, 00100, Kenya
Phone: +254 20 722 4000
Fax: +254 20 722 4001
Email: icraf@cgiar.org
Web: www.worldagroforestry.org

ICRAF Uganda Country Office
Contact: c.okia@cgiar.org