What is the State of Agroforestry Globally?

Director General’s Presentation to the Board of Trustees

18 April, 2007
“Two trends seem almost universal in the tropics:

- the number of trees in forests is declining, and
- the number on farms is increasing”.

-- FAO State of the World’s Forests 2005
Drivers

What is driving these two trends?

Tree cover in forests is declining due to:

- Pressure to convert forests to agriculture
- Increasing demand for timber in rapidly growing economies
- Pervasive failures in forest governance
Tree cover in Africa
Drivers

Tree cover on farms is increasing due to:

- Decline of natural forest cover accessible to villagers
Drivers

Tree cover on farms is increasing due to:

- Decline of natural forest cover accessible to villagers
- Farm sizes declining – intensification & diversification
Human Population Density in Africa

Reid et al. (2000)

No. per km²
- 0 - 5
- 6 - 50
- > 50

1990
Human Population Density in Africa

Reid et al. (2000)

No. per km²
- 0 - 5
- 6 - 50
- > 50

2040
Tree cover on farms is increasing due to:

- Decline of natural forest cover accessible to villagers
- Farm sizes declining – intensification & diversification

More people

→ Declining Farm Sizes
→ More Trees on Farms
Drivers

Tree cover on farms is increasing due to:

- Decline of natural forest cover accessible to villagers
- Farm sizes declining – intensification & diversification
- Rapid urbanization (6%/yr) rapidly increasing demand for tree products
Role of diversified production in small farm incomes is increasing

(share of gross sales revenue)

<table>
<thead>
<tr>
<th>Country</th>
<th>Maize</th>
<th>Other grains/beans/oilseeds</th>
<th>Non-food cash crops</th>
<th>Fruits - vegetables</th>
<th>Animal products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td>13.3</td>
<td>7.9</td>
<td>34.0</td>
<td>14.7</td>
<td>26.7</td>
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<tr>
<td>Malawi</td>
<td>32.3</td>
<td>11.8</td>
<td>44.9</td>
<td>na</td>
<td>na</td>
</tr>
<tr>
<td>Mozam</td>
<td>13.8</td>
<td>9.3</td>
<td>16.9</td>
<td>30.4</td>
<td>23.4</td>
</tr>
<tr>
<td>Zambia</td>
<td>28.2</td>
<td>7.7</td>
<td>16.7</td>
<td>27.5</td>
<td>14.7</td>
</tr>
</tbody>
</table>
As farm sizes decline we also observe that:

- Grain productivity growth will be inadequate to kick-start growth in most of the region
- Diversification into higher-return activities becomes crucial
New Smallholder Strategy

- Reduce dependency on primary agricultural commodities
- Produce added-value products, and link these products to growing and emerging markets.
- The development of tree products, and expansion of their markets, has great potential to provide new income solutions.
Drivers

Tree cover on farms is increasing due to:

- Decline of natural forest cover accessible to villagers
- Farm sizes declining – intensification & diversification
- Rapid urbanization (6%/yr) rapidly increasing demand for tree products
- Demand for timber as a farm-grown crop increasing due to rapid economic growth while forest-sourced timber declines
Smallholder Timber
Emerging Drivers

What are the global drivers?

- Achieving MDGs on hunger, poverty, health, nutrition
Growing Consensus

Ending Hunger in Africa

Only the Small Farmer Can Do It

Agriculture accounts for:

- 70% of employment
- 33% of GDP
- 40% of export earnings
Smallholder agricultural productivity the key to broad-based poverty alleviation

Leveraging productivity on small farms into the economy

- $1 added agricultural income adds $2-3 to the economy
- 1% increase in agricultural productivity reduces poverty by 0.6%.
Emerging Drivers

What are the emerging drivers?

- Achieving MDGs on hunger, poverty, health, nutrition
- Addressing pervasive land degradation in the tropics
We observe

Land degradation assessment methods and rehabilitation strategies for landscapes

The Multilateral Organizations
World Bank TerrAfrica Programme
GEF Land degradation
UNEP
What are the emerging drivers?

- Achieving MDGs on hunger, poverty, health, nutrition
- Addressing pervasive land degradation in the tropics
- Vision of multi-functional agriculture for ecosystem services
Biodiversity Conservation Across a Landscape Matrix

Matrix Habitat Suitability

AGROECOSYSTEMS
- Complex agroforests & Swiddens
- Simple agroforests

MONOCULTURES
- Crop
- Plantation
- Imperata grassland

URBAN

Proportional Area & Suitability for Forest Biodiversity Conservation

FOREST PRODUCTION SYSTEMS
- NTFP harvest
- Reduced impact logging
- Conventional logging & enrichment

PROTECTED INTACT HABITAT
- Trees in farmers’ fields
Multi Functional Agriculture
How can agroforestry

1) Better protect natural biodiversity in protected areas?
2) Enhance natural biodiversity in agricultural landscapes?
3) Enhance agroforestry tree diversity in landscapes?
4) Conserve and enhance agroforestry tree genetic diversity?
Emerging Drivers

What are the emerging drivers?

- Achieving MDGs on hunger, poverty, health, nutrition
- Addressing pervasive land degradation in the tropics
- Vision of multi-functional agriculture for ecosystem services
- Alternative energy sources – biofuels
Bio-energy Alternatives

Bio-diesel

- Jatropha and other oil bearing species

Ethanol from trees (Treethenol)

- New processes for generating fuel from ligno-cellulosic carbon
Emerging Drivers

What are the emerging drivers?

- Achieving MDGs on hunger, poverty, health, nutrition
- Addressing pervasive land degradation in the tropics
- Vision of multi-functional agriculture for ecosystem services
- Alternative energy sources – biofuels
- Addressing climate change
20% of gross GHGs are emitted by land use change and deforestation.

As the world begins to panic at the catastrophic consequences of the greenhouse effect it won’t be long before the climate change community begins to seriously turn its attention to agriculture and forestry. And when it does, the world of agriculture will be changed forever.
Smallholder carbon bio-sequestration and poverty reduction methodologies

The Multilateral Organizations
- World Bank Biocarbon Fund
- UNDP MDG Carbon
- GEF
- UNEP

Global NGO community
- WWF
- CARE
- Clinton Foundation
- Green Belt Movement
We observe that most of the global institutions involved in poverty and environment now intensively reaching out to agroforestry and to the World Agroforestry Centre.
We observe

... that most of the global institutions involved in poverty and environment now intensively reaching out to agroforestry and to the World Agroforestry Centre.

They are approaching us to --

- Deploy our methods and materials
- Partner with us
- Support us
So is something historically unique happening in the world of agroforestry right now?

- If so, what does it signify?
- How is it impacting on the development of our focused scientific agenda?
- On our strategic priorities?
- On the role that we play in the world?
Consequences

Agroforestry now seen as at the ‘heart’ of the three environmental conventions

Figure 9: Agroforestry at the ‘heart’ of the three environmental conventions
Consequences

Agroforestry at the heart of the matter...

- In evolving the future of multifunctional agriculture
- In addressing climate change, biodiversity, and desertification in integrated ways not perceived before...
  ...because poverty can be addressed simultaneously.
Agroforestry at the heart of the matter…

**Hypothesis:**
The world scientific and policy regimes will soon be viewing agroforestry as a universal means of addressing its greatest challenges on a holistic, integrated basis.
Our Goal

To be the partner of choice

...by a wide range of scientific and development institutions for generating solutions to global problems of rural poverty, hunger, and environmental degradation.
Be a Boundary Organization

Boundary organizations

Formal learning

Learning by doing

Knowledge systems

Action institutions

>2

1

0

0

1

1

>2
Generate Knowledge: strategic research in the context of a few key complex global problems

Development-support: linking agroforestry knowledge to action

Influence Policy: engagement in key global and regional policy fora where agroforestry has a critical role

Enhance Networking: institutional networking to leverage our capacity as a boundary organization
Our Vision
is an agroforestry transformation in the developing world

...Resulting in a massive increase in the use of working trees on working landscapes by smallholder rural households that helps ensure security in food, nutrition, income, health, shelter and energy and a regenerated environment