



# Promotion of Sustainable Forest Management under Climate Change Regime

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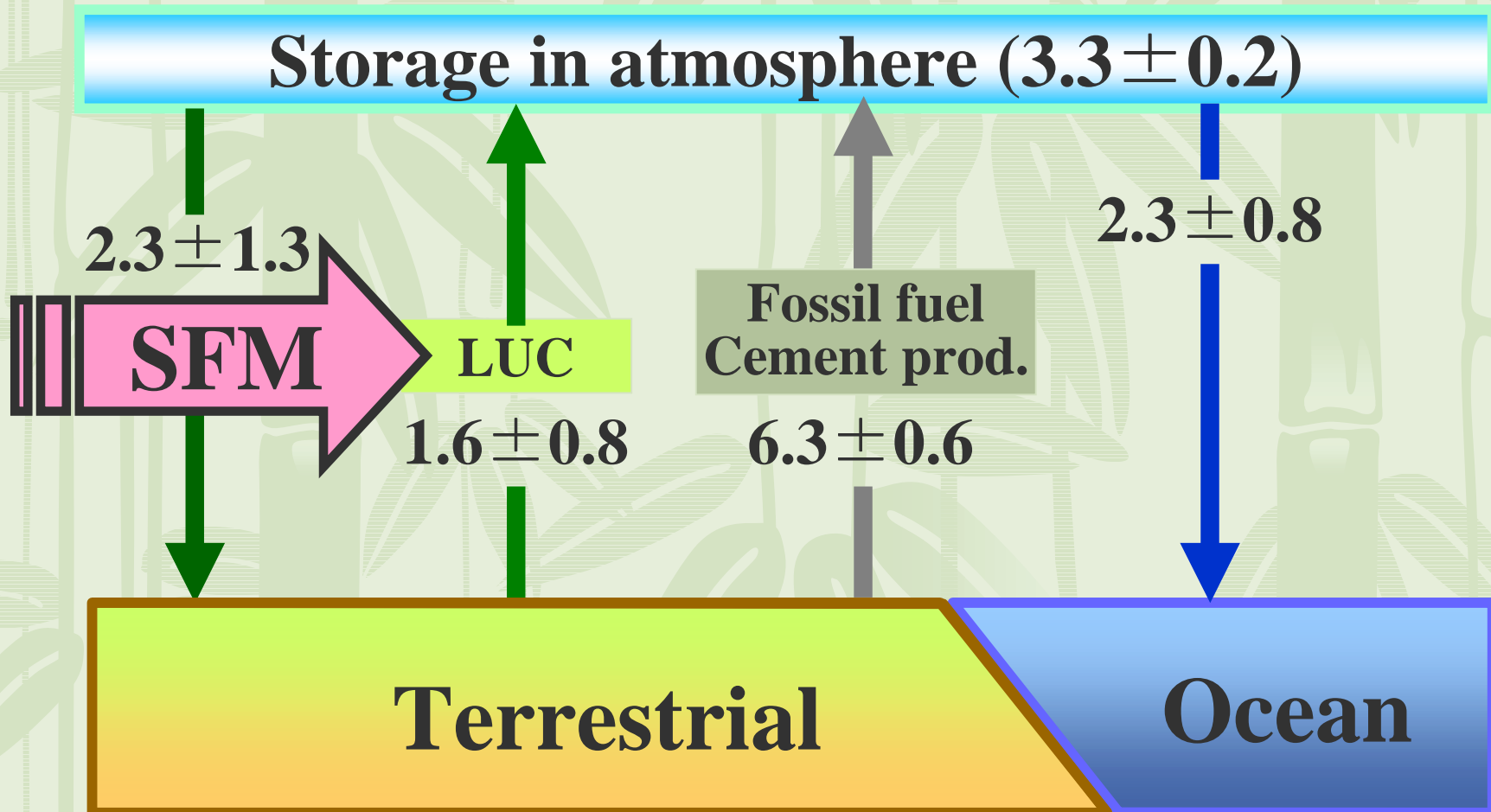
# Outline

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- ❖ Harmonization of SFM and mitigation of GW
- ❖ Qualification of forests under KP
- ❖ Conclusions/Issues to be tackled

# Average annual budget of CO<sub>2</sub> for 1989 to 1998

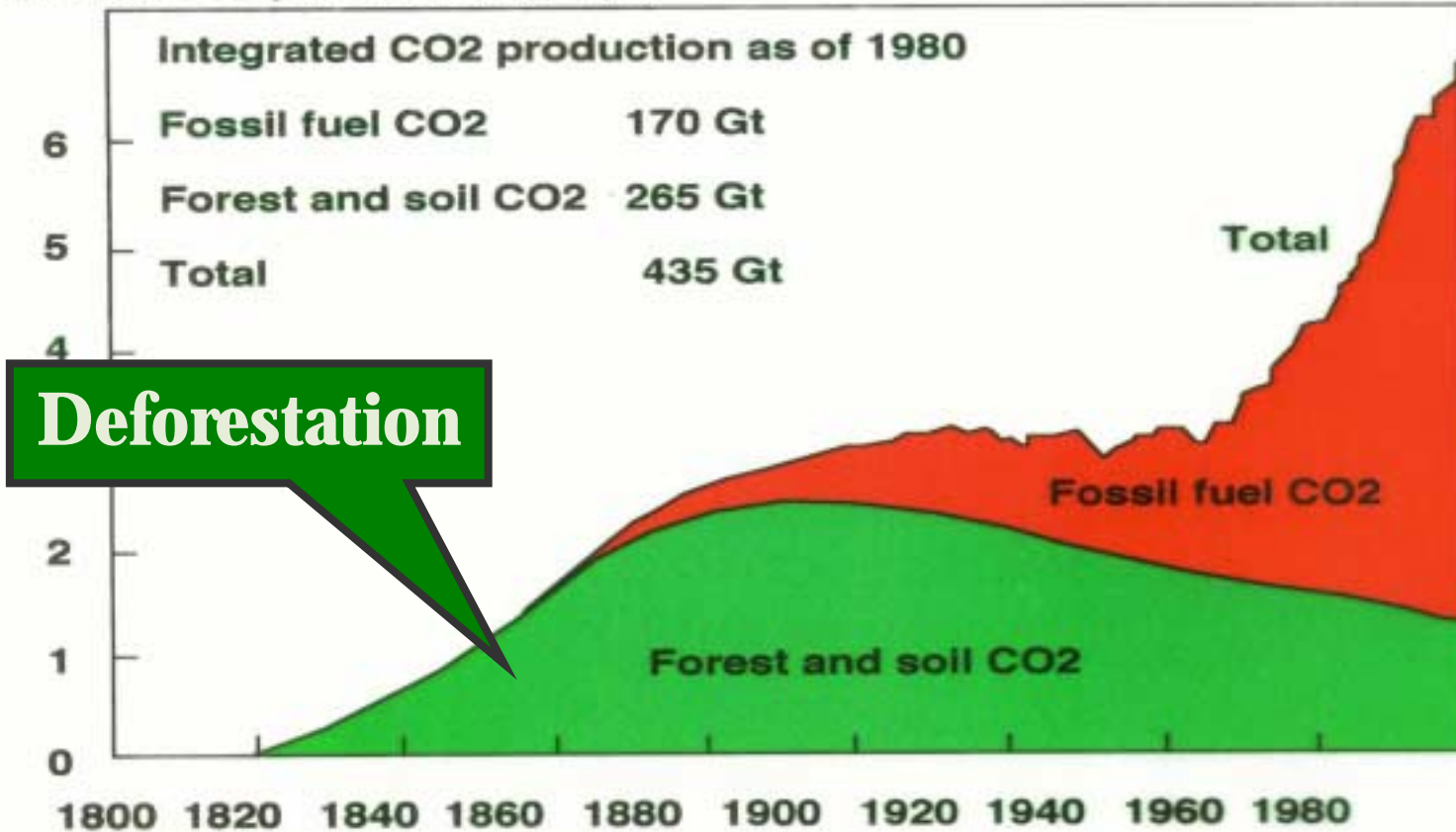
(Unit : Gt-C/yr)



Source : IPCC LULUCF Special Report (2000)

# Historical Anthropogenic CO<sub>2</sub> Production

Annual CO<sub>2</sub> production (Gt/yr)



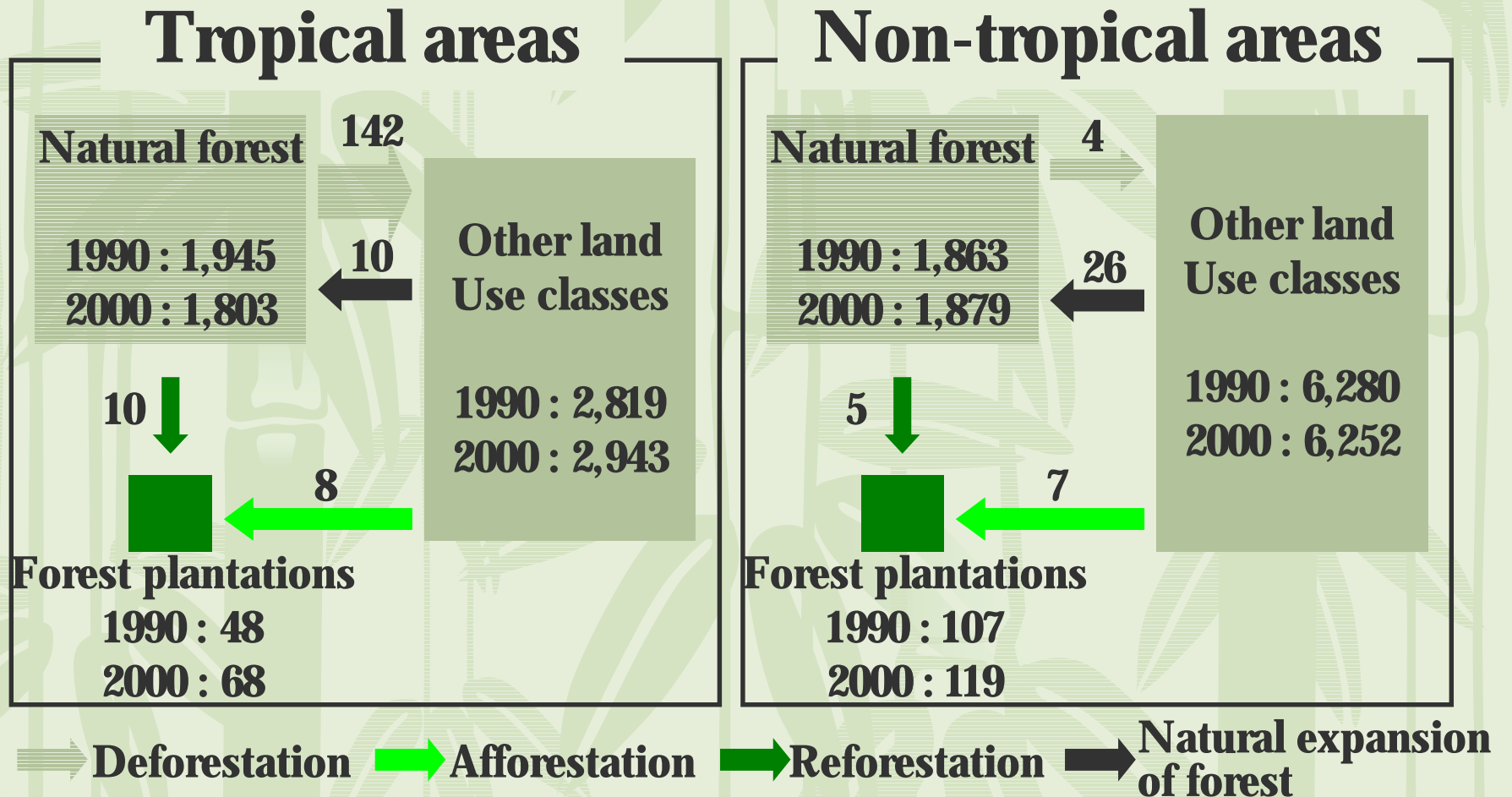
**Deforestation**

**Historical Anthropogenic CO<sub>2</sub> Production**

(after Bolin 1986)

# Forest area changes 1990 - 2000

(Unit : million hectares)



Source: Global Forest Resources Assessment 2000

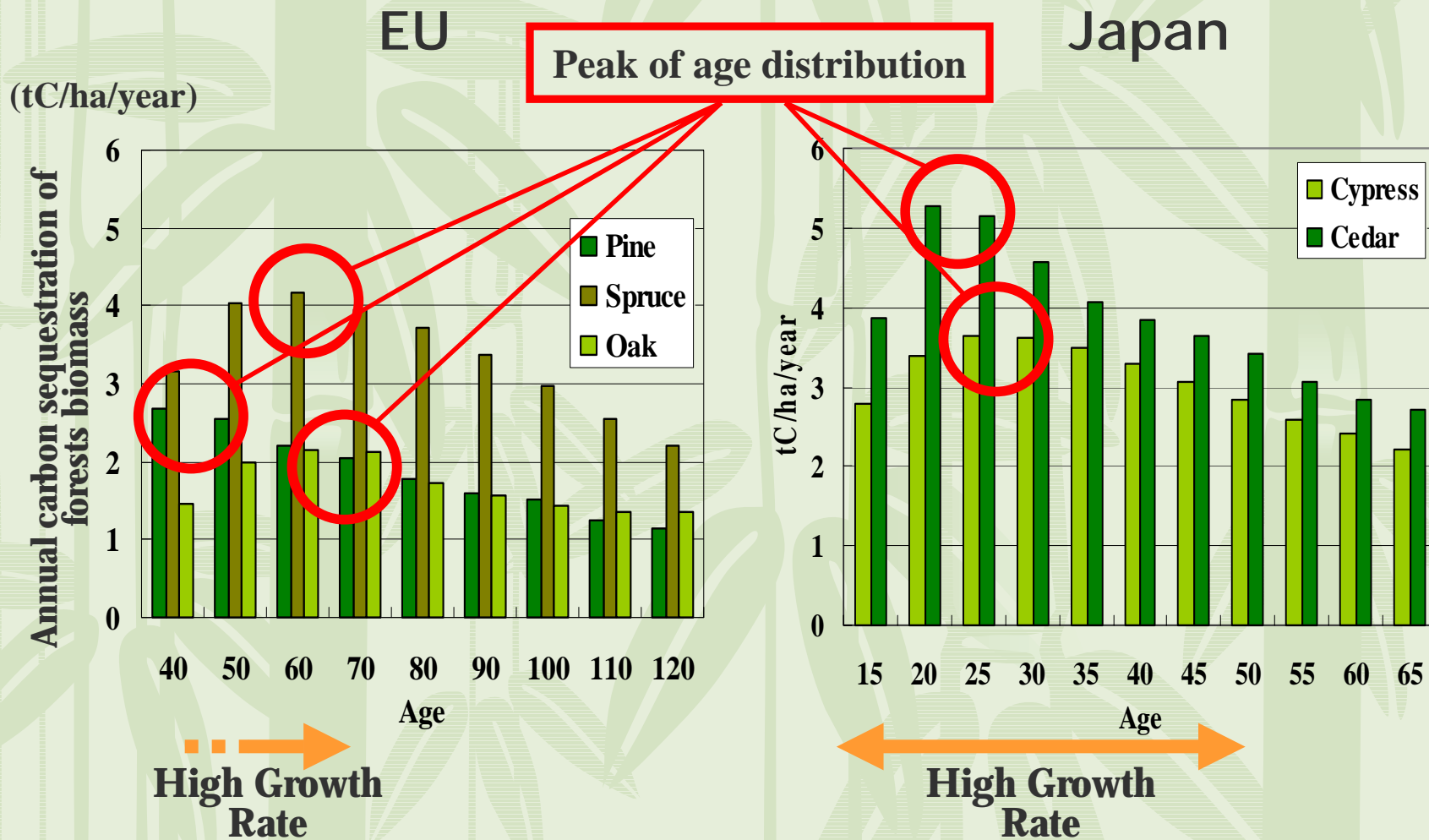
# Carbon sinks for developing countries

- ❖ **High growth rate and high potentiality**
- ❖ **Stimulate to protect forest degradation and deforestation**
- ❖ **Transfer biodiversity to the future generation**

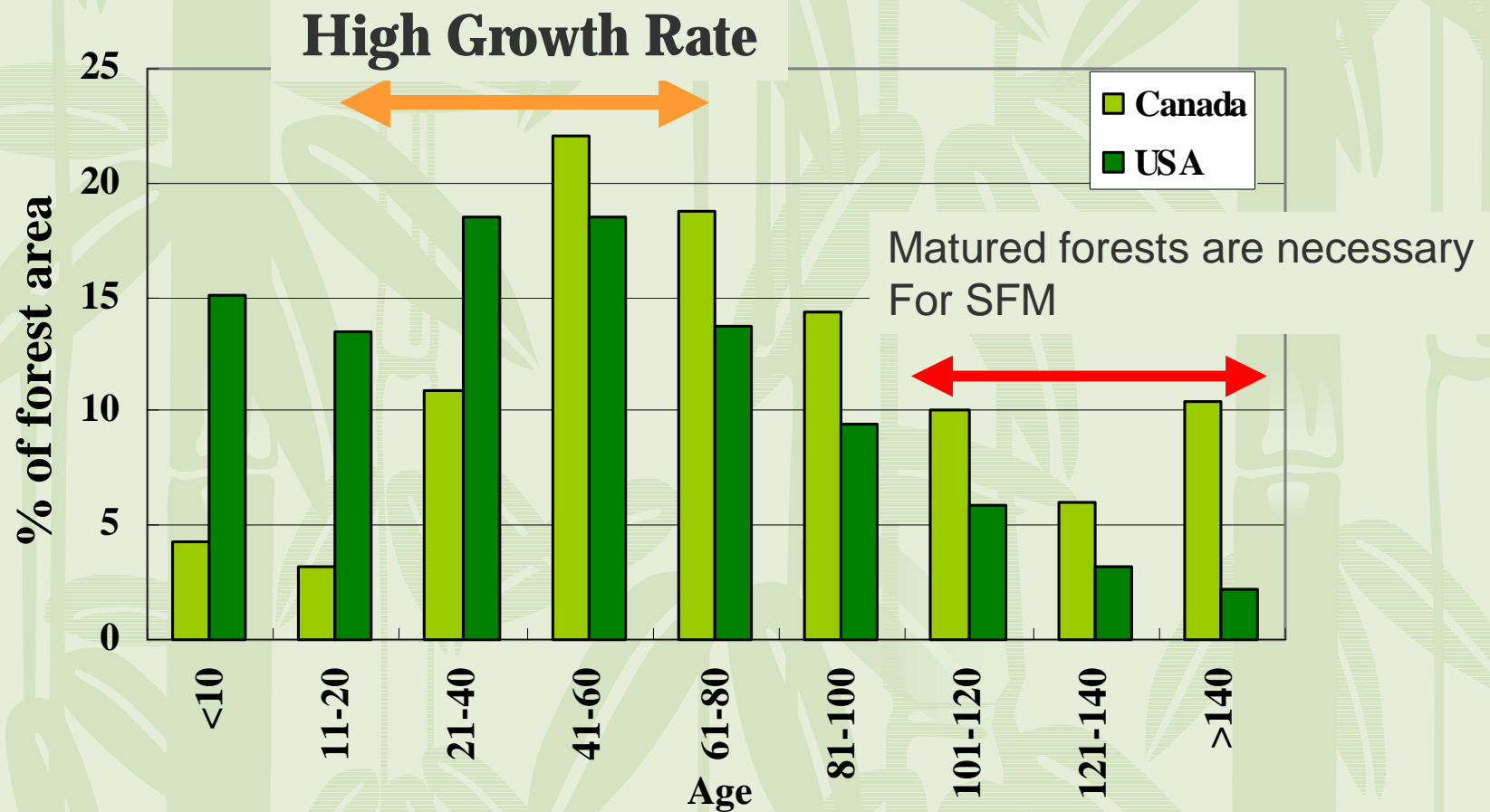
Negative direction of land use changes



# Growth potentiality of EU and Japan



# Age distribution of forest resources (Even-aged forest available for wood supply)



Source : Temperate and Boreal Forest Resource Assessment (2000)



## Capacity of Forests as Carbon Sinks assessed by IPCC TAR



100Gt of carbon could be sequestered by biological sinks over 100years



Forest ecosystem has various functions and services

# Carbon Sink vs. Timber Production / Biodiversity

**Carbon Sink**



**Timber Production**

- ❖ **Carbon balance of gross annual growth and harvesting**
  - ❖ **Harvesting volume under different scenarios**
  - ❖ **Projected carbon storage under different scenarios**

**Carbon Sink**



**Biodiversity**

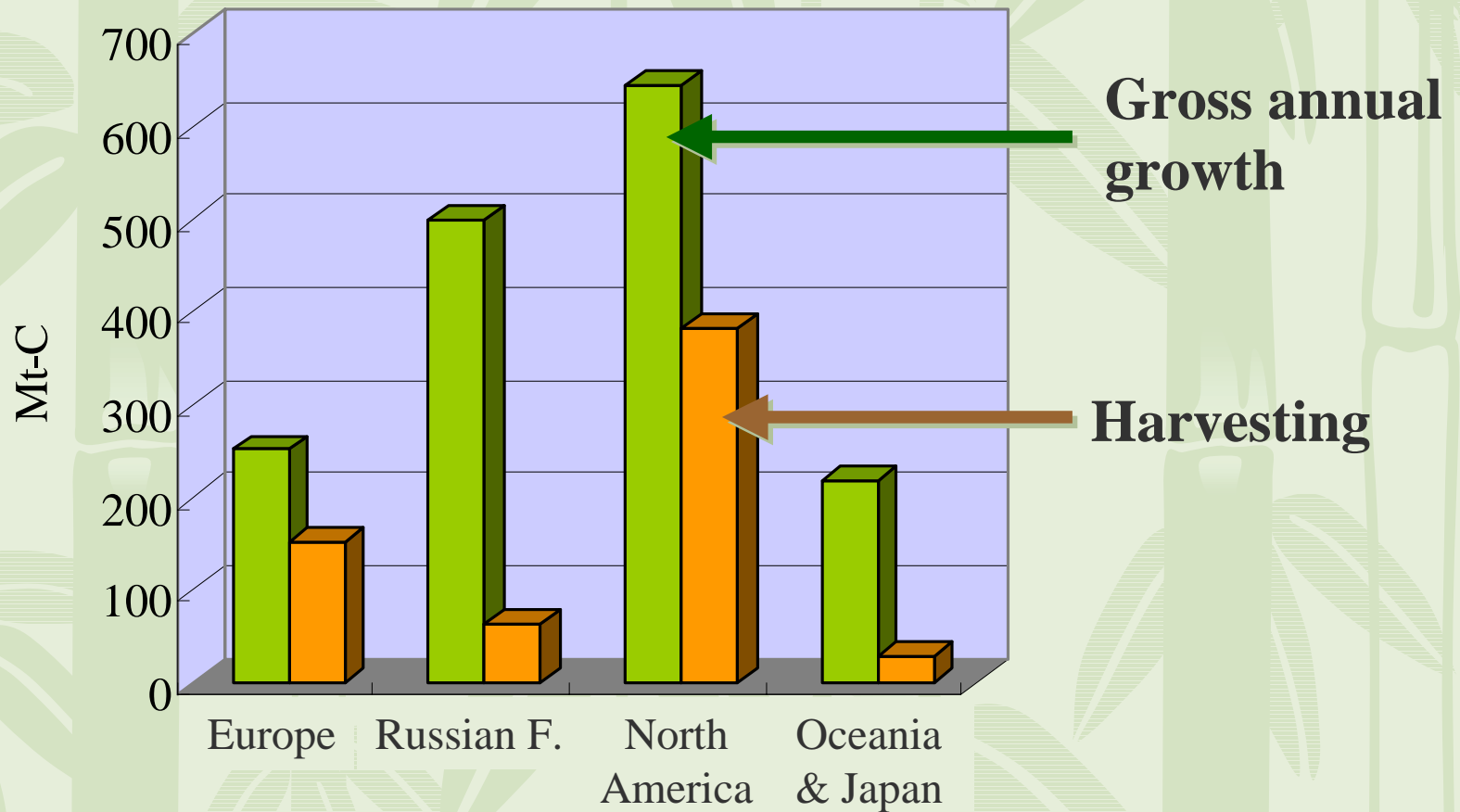
- ❖ **Carbon sequestration of plantation and natural forests**

**Carbon Sink**



**Timber Production**

## Carbon balance of gross annual growth and harvesting



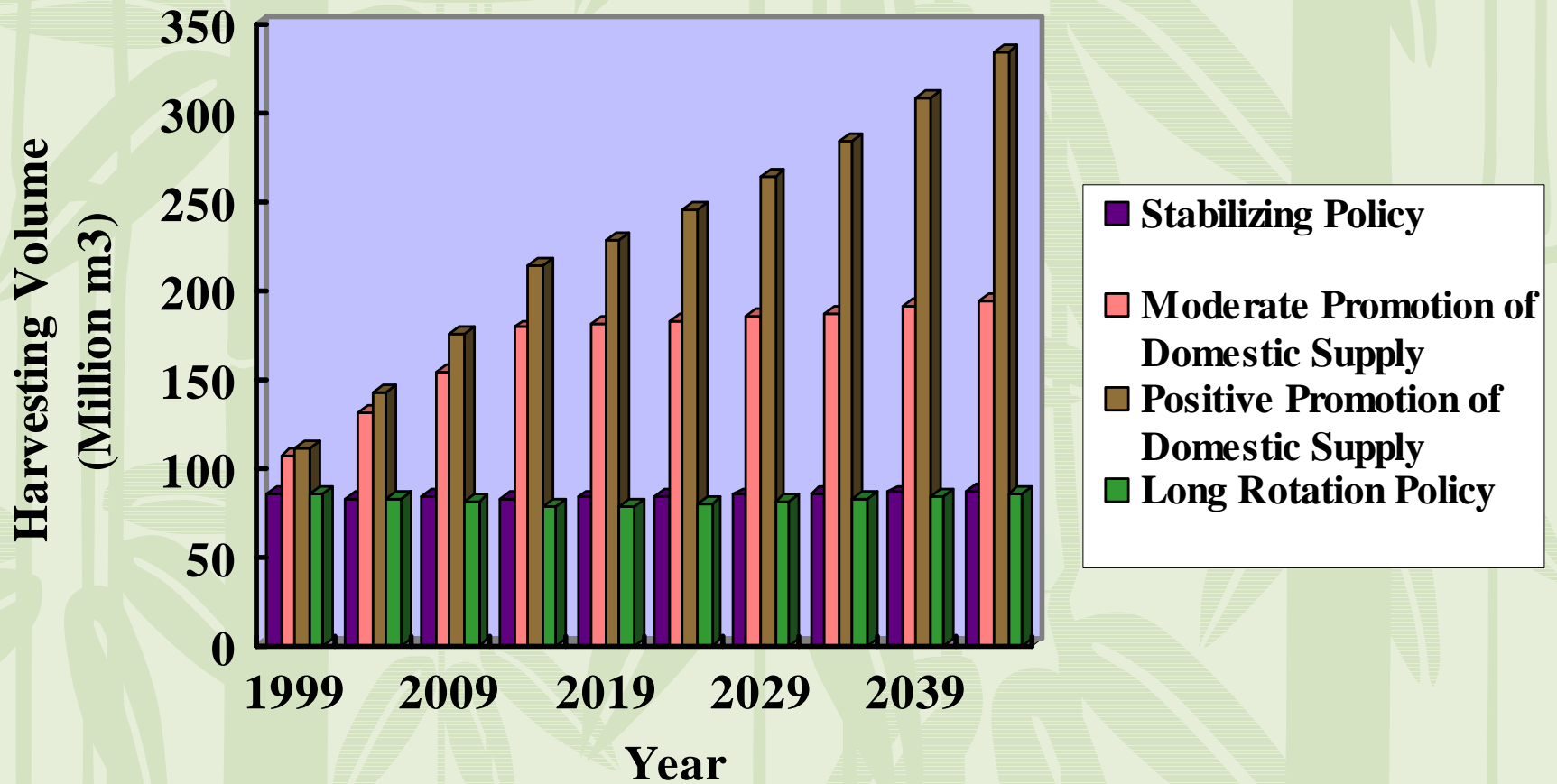
**Source: Global Forest Resources Assessment (2000)**

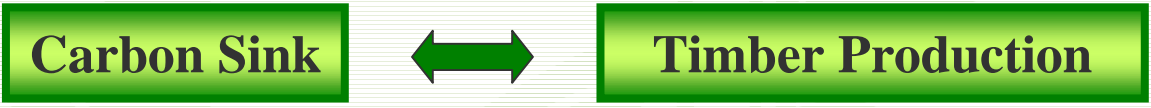
**Carbon Sink**



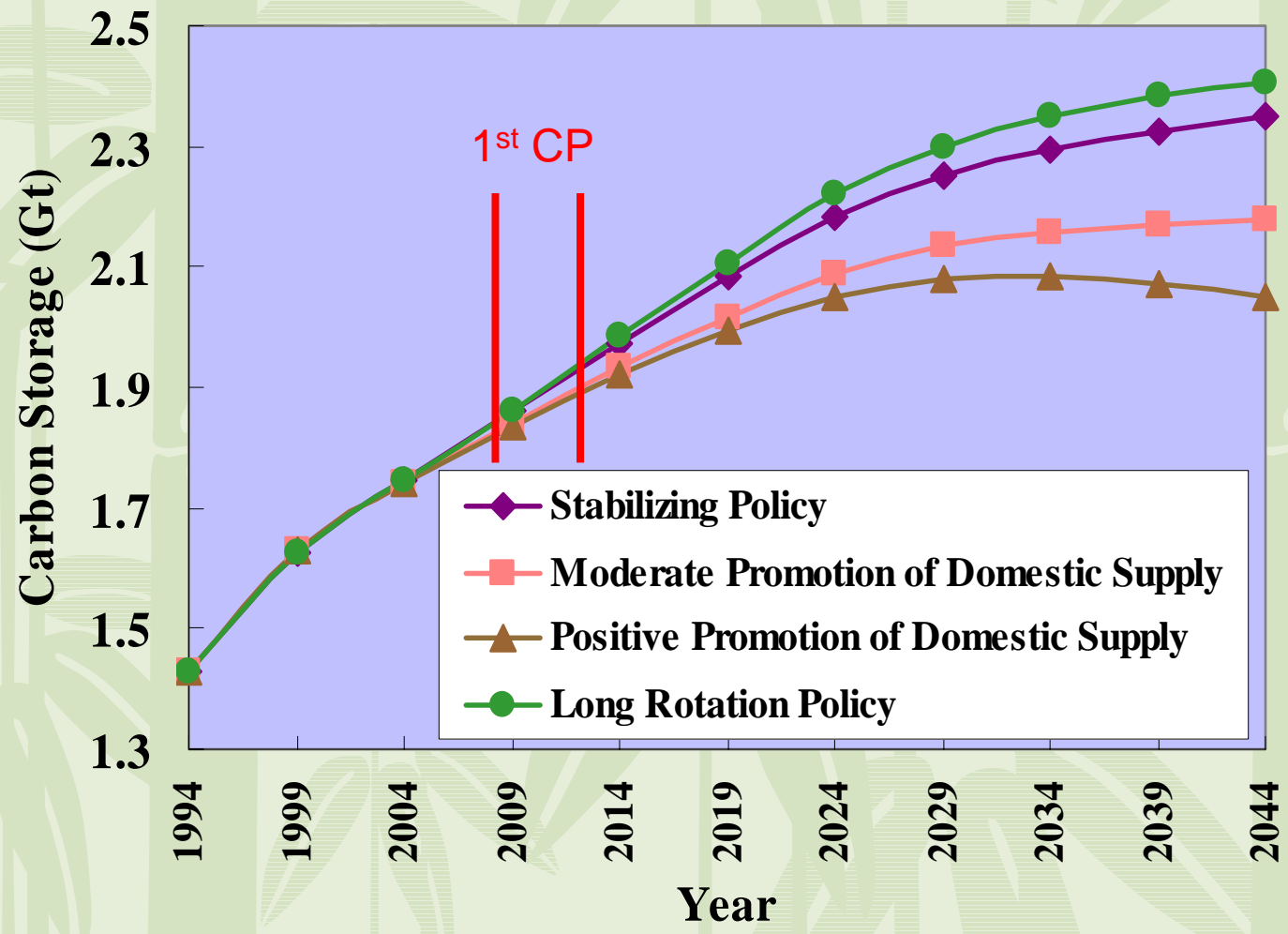
**Timber Production**

## Harvesting volume under different scenarios in Japan





# Projected carbon storage in forest biomass under different scenarios in Japan

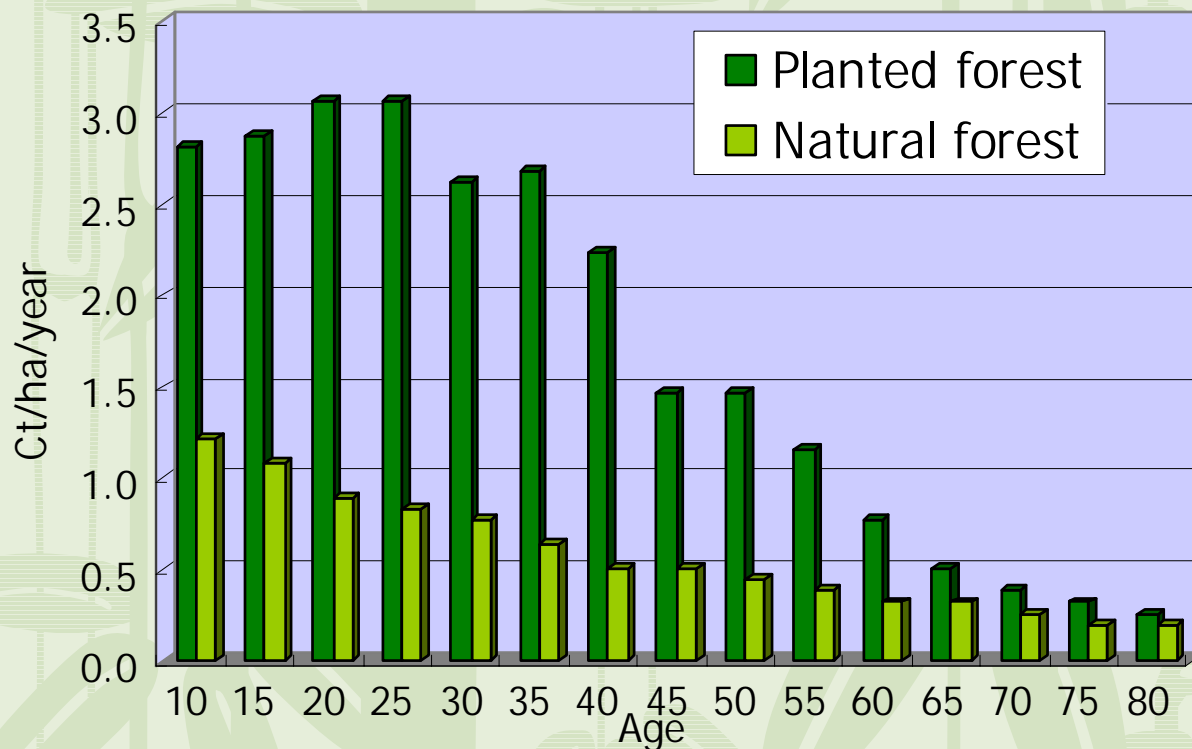


Carbon Sink



Biodiversity

## Capacity of Forests as Carbon Sinks



Carbon sequestration capacity of plantation and natural forests in Japan

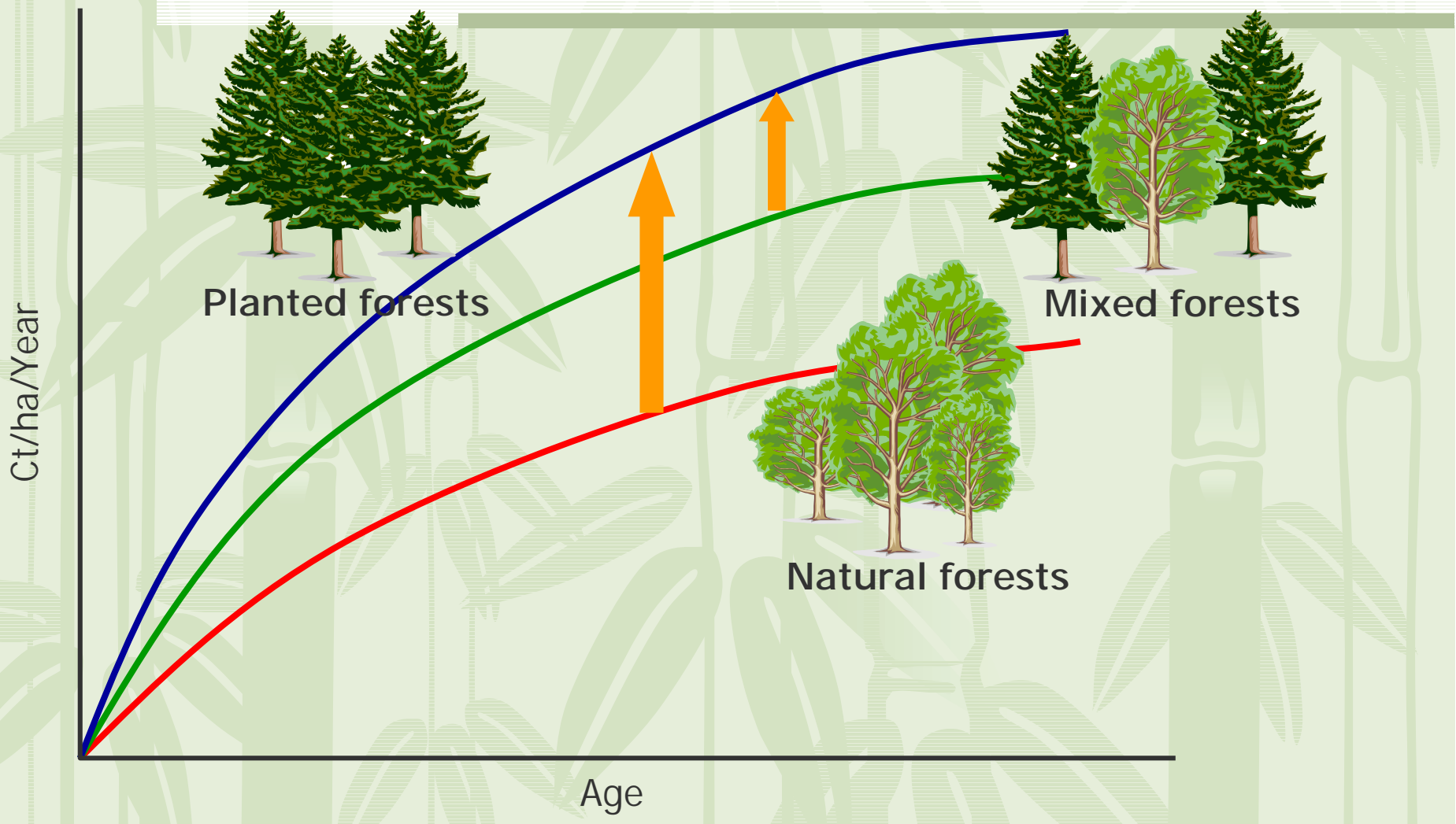
❖ Capacity of carbon sequestration is higher in planted forest than natural forest

**Carbon Sink**

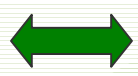


**Biodiversity**

Focus on carbon sequestration

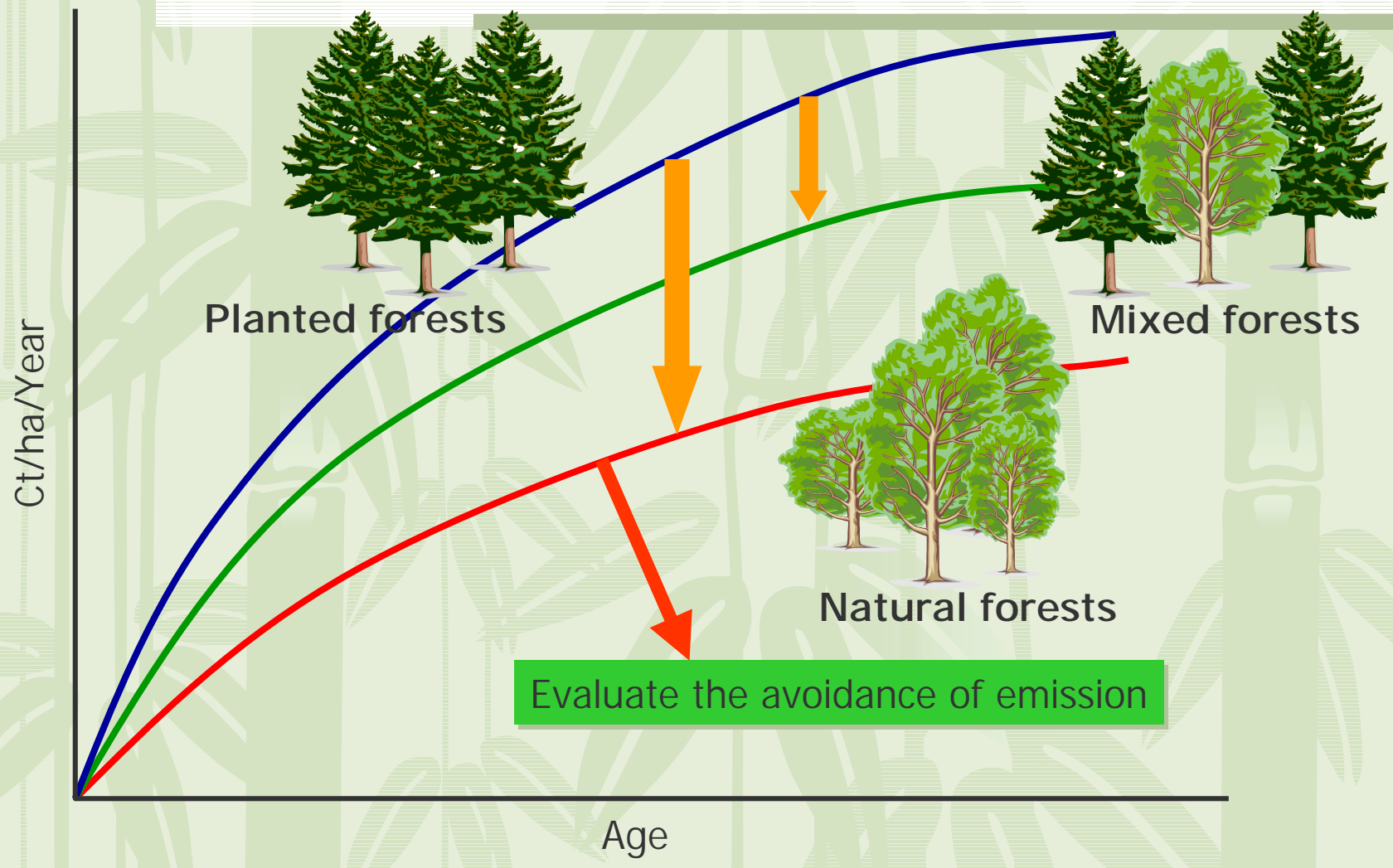


**Carbon Sink**



**Biodiversity**

Focus on biodiversity



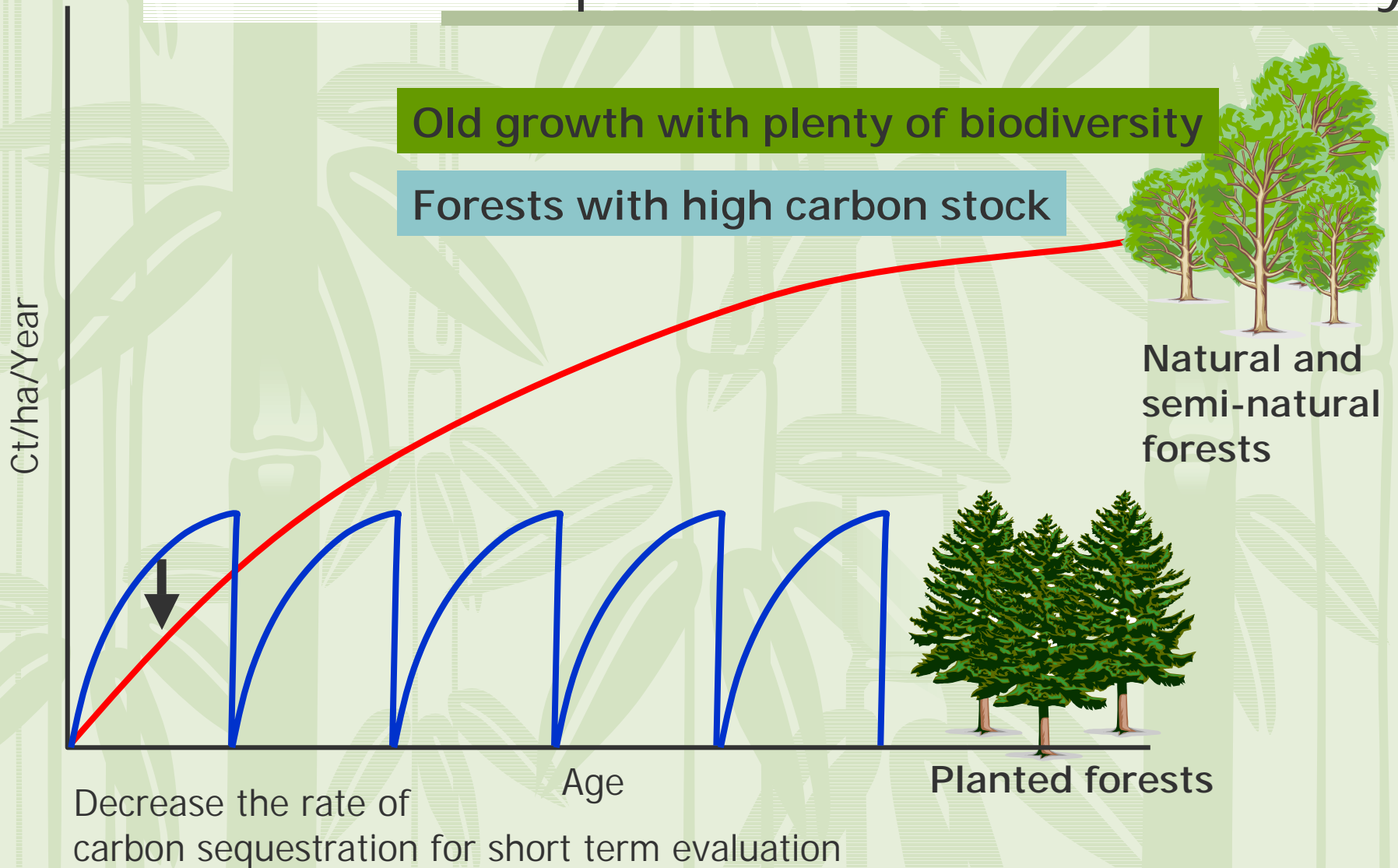


**Carbon Sink**

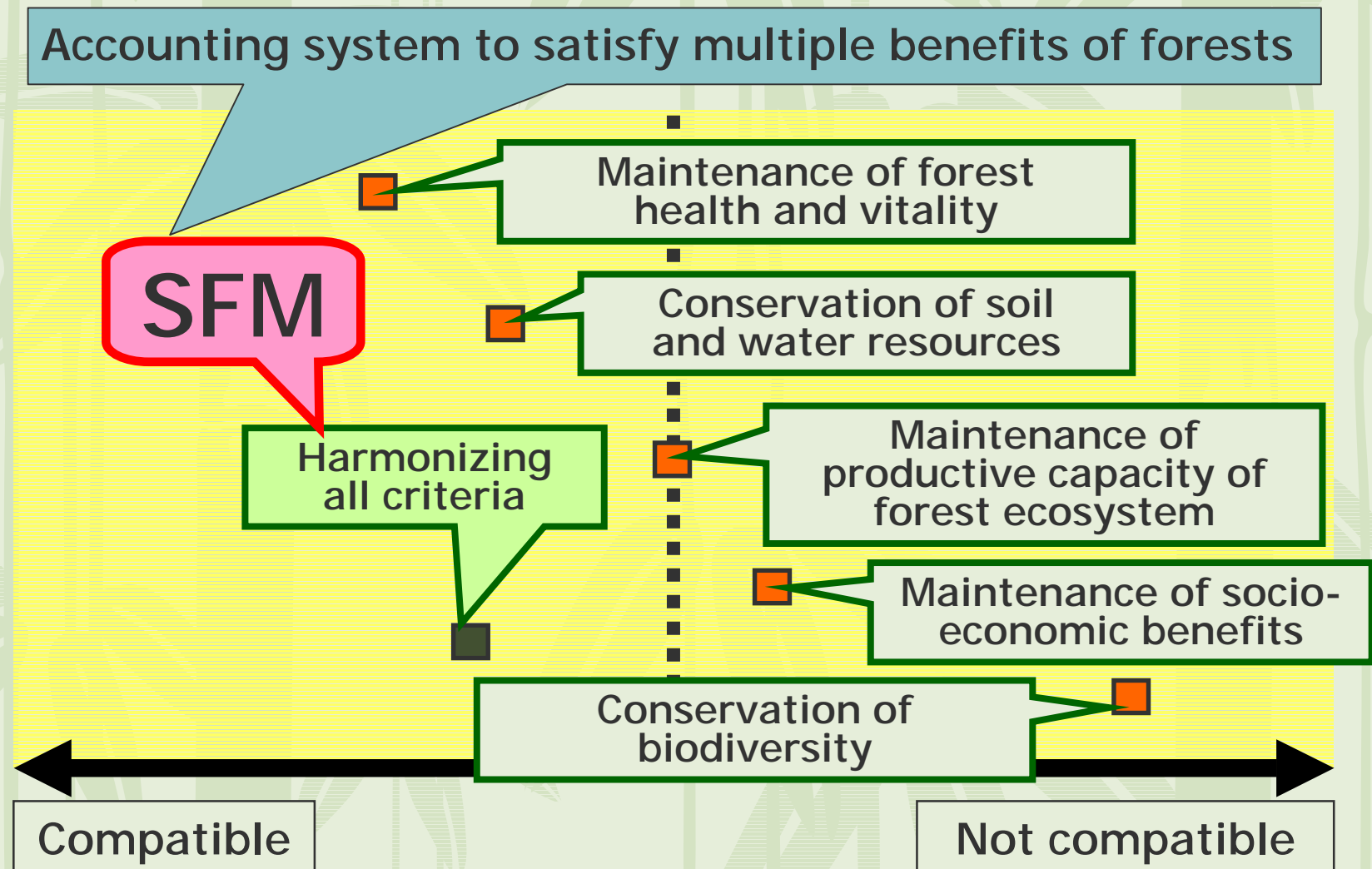


**Biodiversity**

# The case of harmonizing carbon sequestration and biodiversity

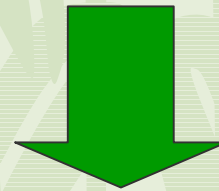


# Forest contribution to global carbon cycles

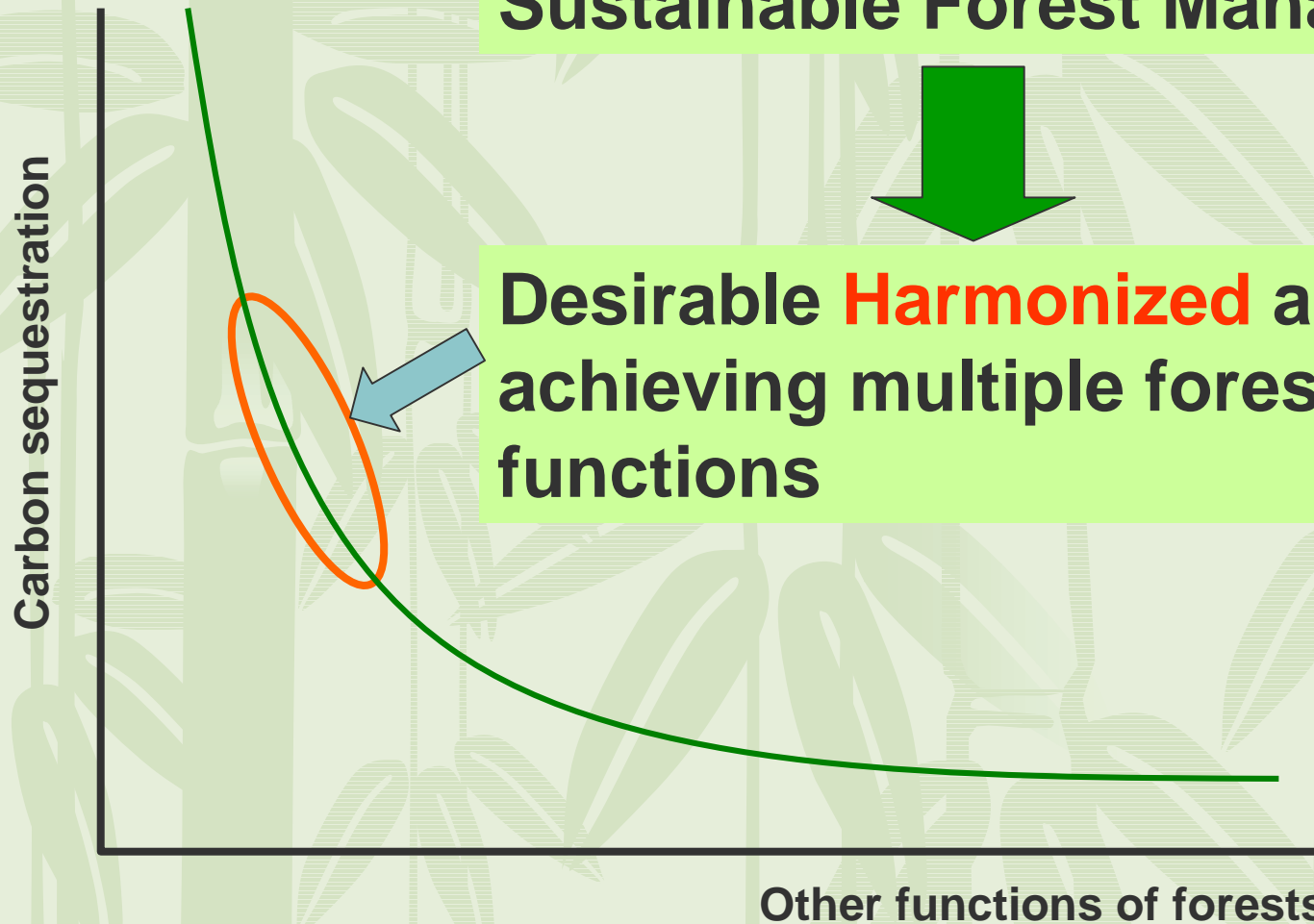


# Sustainable Forest Management is...

**Sustainable Forest Management**



**Desirable **Harmonized** area  
achieving multiple forest  
functions**



Other functions of forests

# Common Understanding on SFM

- ❖ WSSD, Plan of Implementation (2002)
  - ❖ Para. 45: Sustainable forest management ..... is essential to achieving sustainable development as well as ..... significantly reduce deforestation, halt the loss of forest biodiversity and land and resource degradation and improve food security and access to safe drinking water and affordable energy; in addition, it highlights the multiple benefits of both natural and planted forests and trees and contributes to the well-being of the planet and humanity.

# Recent Discussions on SFM

## ❖ UNFF5 (2005)

- ❖ Reviewed progress and consideration on future actions

- ❖ Para 12. The challenges of the alarming rate of deforestation and forest degradation remain serious. ... **Further action is needed to promote sustainable forest management**, clarifying the positive role of forests for socio-economic development of countries, especially for forest dependent people. ...

## ❖ UNFF6 (2006)

- ❖ Agreed on four shared Global Objectives on Forests, **focusing sharply on the timely and urgent priorities for the practical implementation of sustainable forest management (SFM)**.



- UNFCCC, a member of Collaborative Partnership on Forests (CPF), needs to work to support the work of the UNFF and to foster increased cooperation and coordination on forests.

# Framework of 1st Commitment Period

## ❖ UNFCCC

- ❖ All Parties...shall...promote **sustainable management**...of sinks and reservoirs of all greenhouse gases...including biomass, forests....(Article 4)

## ❖ Kyoto Protocol

- ❖ Each Party included in Annex I ... shall ...implement and/or further elaborate policies and measures..., such as:....; promotion of **sustainable forest management practices**.... (Article 2)

Does the framework address quality of sinks?

## ❖ MARRAKESH ACCORDS

- ❖ For the first commitment period,...the additions to and subtraction from the assigned amount ...shall be equal to anthropogenic GHG emissions by sources and removals by sinks ... **resulting from afforestation, reforestation ... and forest management....(11/CP.7)**
- ❖ **1st Commitment Period primarily concerns mass/flow of GHG (no test on Sustainability of Forest Management)**

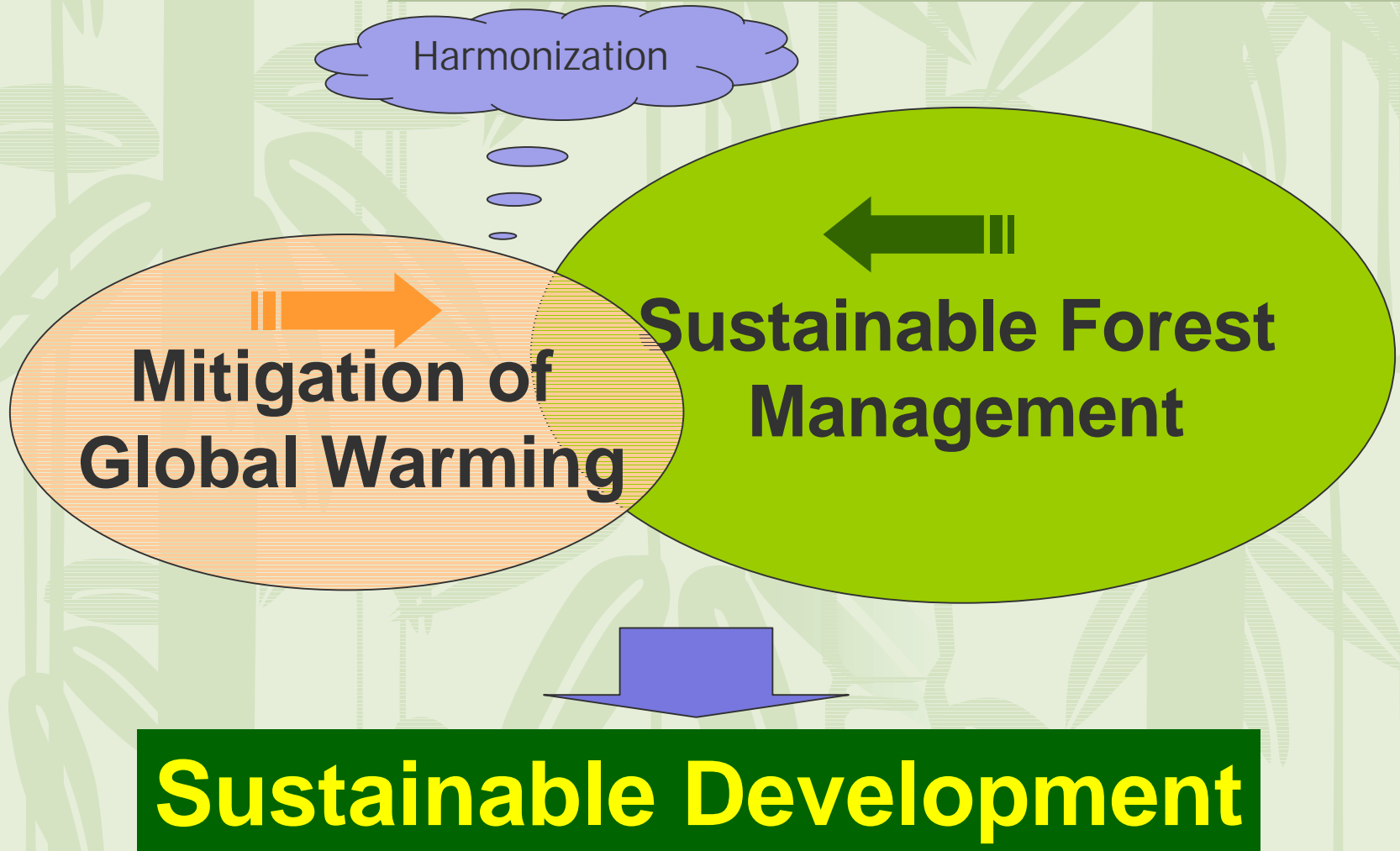


# Sustainable forest management for climate change mitigation

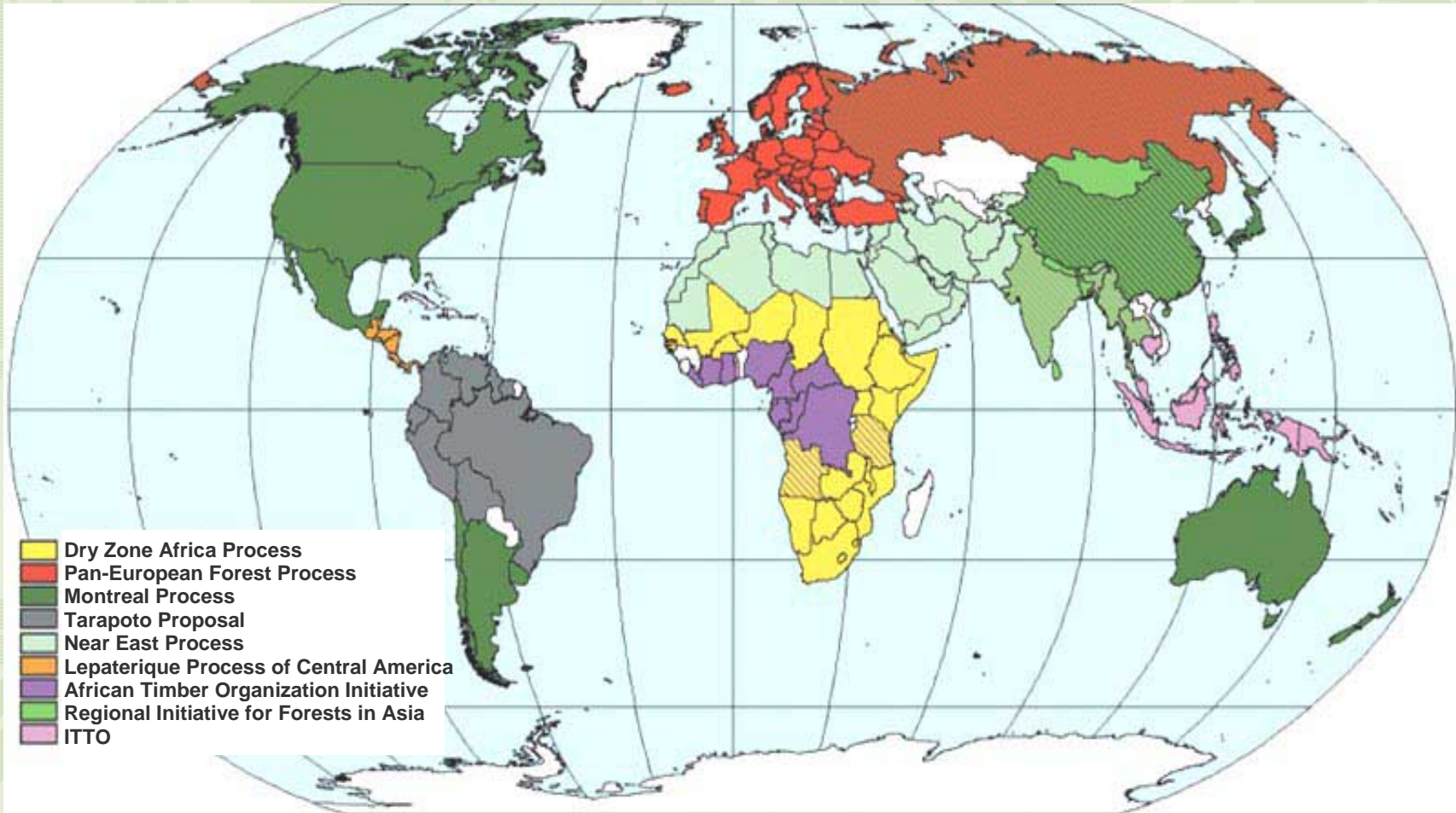
- ❖ **In international discussions about forest, an accomplishment of Sustainable Forest Management (SFM) is the key in relation with issues, such as;**
  - ❖ **Tackling illegal logging (G8 Gleneagles 2005, Gleneagles Plan of Action)**
  - ❖ **Forest certification**
  - ❖ **Criteria, indicator and certification in forest**
- ❖ **It is necessary to substantially reconsider forest sinks and reservoirs framework in collaboration with SFM.**
  - ❖ **A system that recognizes the degree of effort for SFM is necessary.**



# Harmonization of SFM and mitigation

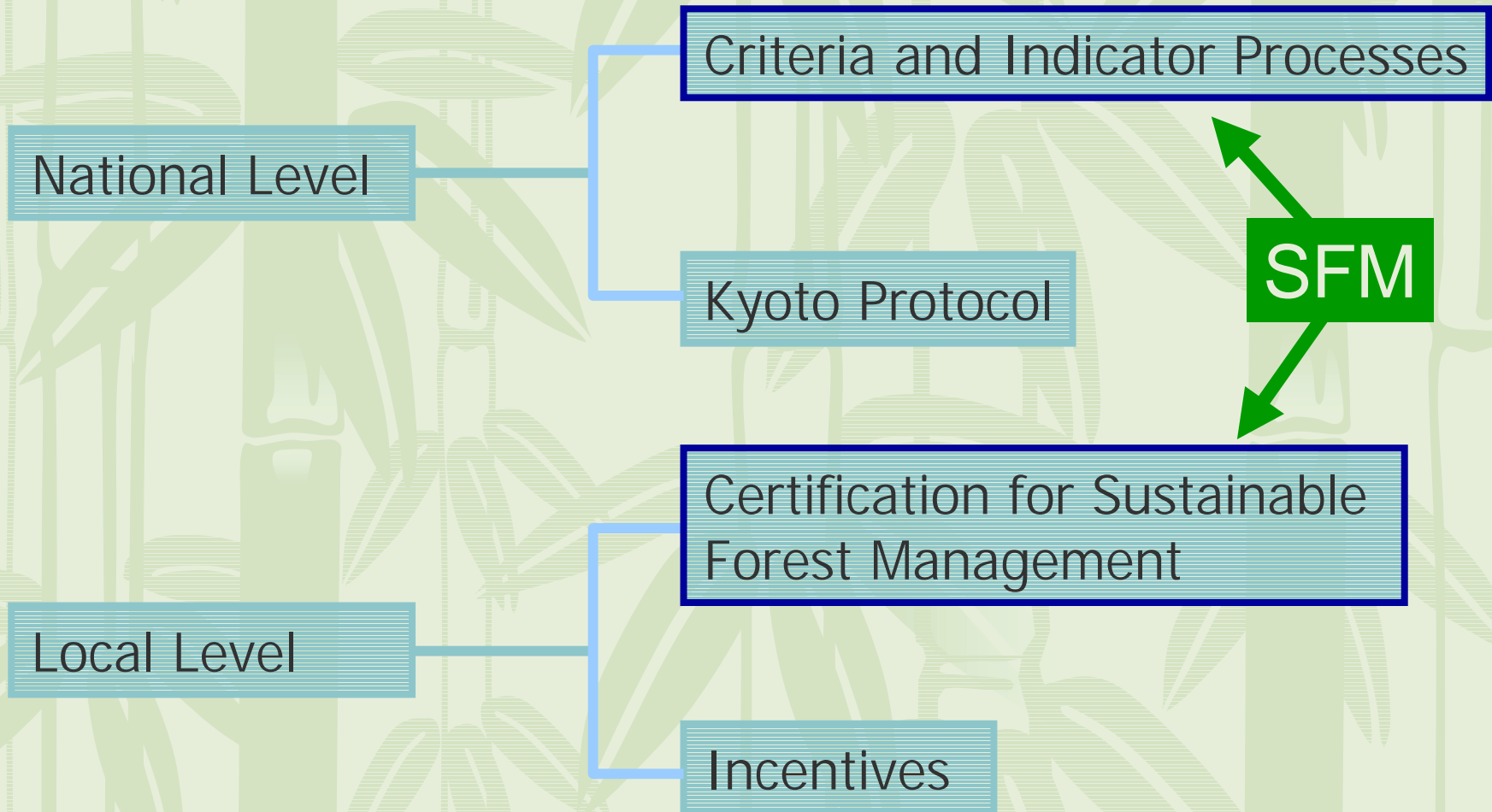


# Geographical coverage of nine criteria and indicator processes



Source:FRA2000

# Qualification of forests under KP



# Practical Certification for SFM

-A case study from Japanese experience-

- ❖ State of planted forest is always transforming;
- ❖ Which means **forestry activities are fundamental to maintain** “appropriate” state for SFM.
  - ❖ “appropriate” state : fulfills multiple functions of forest
- ❖ How the appropriate state should be taken into account?
  - ❖ The forest state could not always be maintained appropriately, even if a certain forest activity had been taken at a certain time in the past.



Appropriately managed Forest with decades species of floor vegetation

(Planted forest, Sugi Cedar age 40)

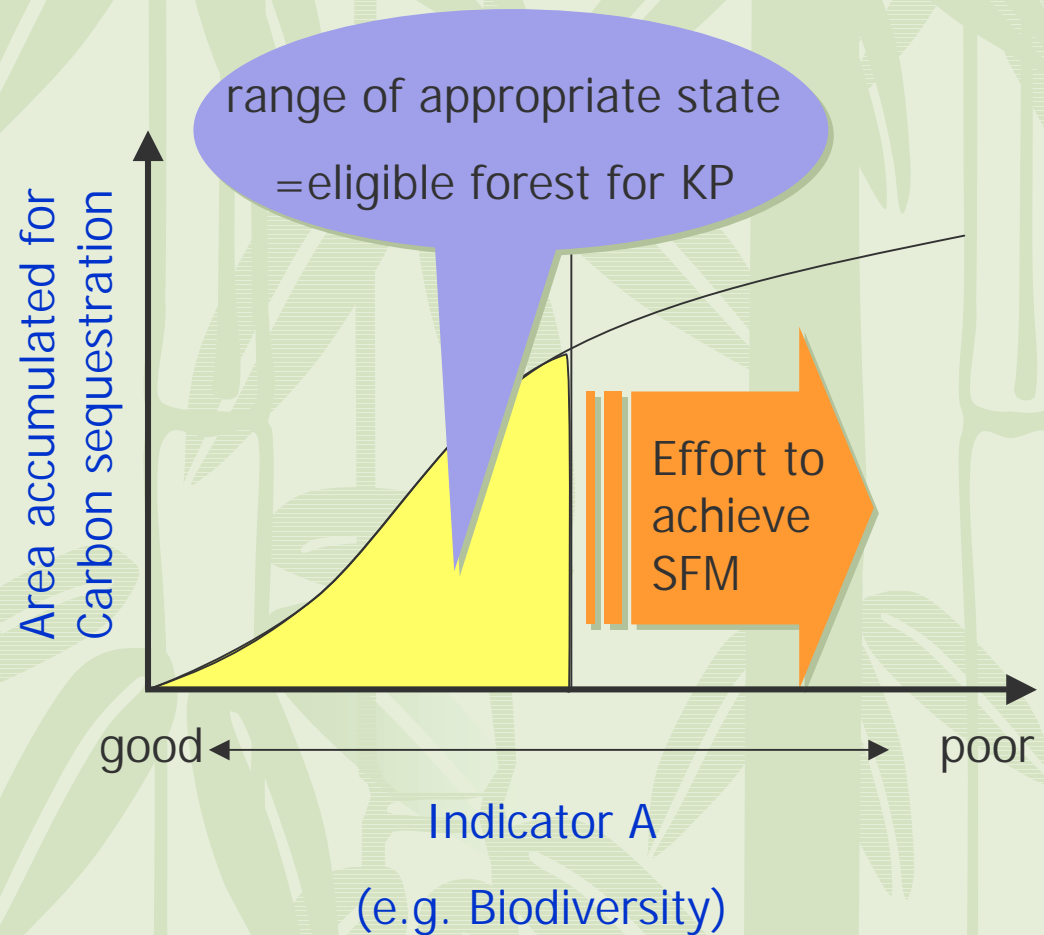


Inappropriately managed Forest without floor vegetation

(Planted forest, Sugi Cedar age 20)

# Concept

- ❖ Introduction of indicator to detect appropriate forest state for multiple functions, and Activities to maintain the state





# Conclusions

- ❖ Forest ecosystem has various functions and services.
- ❖ Sustainable forest management is essential to achieving sustainable development.
- ❖ Appropriate and timely forest management activities are necessary to maintain forest functions and services
- ❖ Forest carbon sinks under KP must be designed to keep up multiple benefits derived from forests simultaneously.
- ❖ Present KP does not always fully work to provide incentive towards SFM.
- ❖ Need introduction of concept to evaluate forest C stocks as sinks/reservoirs.

# Issues to be tackled

- ❖ Development of simple indices to evaluate forest management efforts for both forest C sinks/reservoirs and SFM
  - ❖ Policies and measures
  - ❖ Target based on criterion and indices of carbon sinks and SFM
  - ❖ Others



# Thank you for your attention

For further information...



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