INTERLAKEN+10 - Governing forest landscapes

3rd to 6th February 2015 in Interlaken, Switzerland

as part of

Forest landscape governance and green economy: *Lessons learnt from ten years of experience and the way forward post-2015*

Meine van Noordwijk

World Agroforestry Centre

RESEARCH PROGRAM ON Forests, Trees and Agroforestry

CGIAR

WAGENINGEN UR *For quality of life*

Forestry Institutions
Keeping *enough* forest is a legitimate goal in itself

Goals
Universality

Means of Verification

Common But Differentiated Responsibility (CBDR)

Means of Implementation

Carrots, Sticks & Sermons

Forest & trees are a good way to achieve SDG's
Rest of the World

World Agroforestry

Lessons learnt and way forward

- Landscapes exist as inter-mediate-scale socio-ecolo-gical systems, between 'livelihoods' & 'governance'
- Current landscape configu-ration often is sub-optimal response to multiple drivers
- Landscape democracy can support multifunctionality
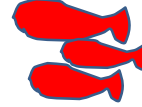- Clear indicators for monitor-ing and evaluation are hard to achieve, but essential

How trees and people can co-adapt to climate change

Reducing vulnerability in multifunctional landscapes

EDITORS
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Who?

Why?

How, what?

Who cares?

Where, when?

So what?

Negotiation-support toolk for learning landscapes

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Theory of Change

REDD+ will provide sufficient financial incentives to secure conservation of most of remaining tropical forests via the invisible hand of market-based instruments that exceed benefits derived from business as usual

Red herrings

Discordant information

Black Swan

Paradigm shift

Change of Theory

Forest change is primarily driven by processes and actors outside the forestry sector and change at landscape-to-global scales will have to be part of wider SDG & green economy debate
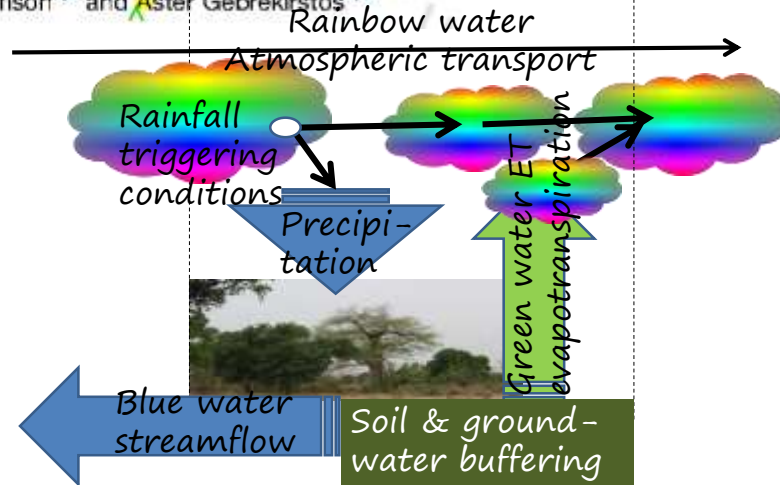
Red herrings? In ETFAG talk MvN 2014

- Current progress in key landscapes relates to 'consumer pressure' and 'shame' rather than positive financial instruments to change local behaviours
- Forest is not a sufficiently operational term to allow effective policies to emerge
- REDD+ can function as part of land-based NAMA's, not as stand alone; mitigadaptation synergy helps
- The tree cover (forest) climate relationship needs to zoom in on hydroclimates beyond current carboclimate focus; teleconnections become tractable
- A cross-scale combination of 3 PES paradigms is feasible and may combine fairness & efficiency

Black Swans? Your call

Pricing rainbow, green, blue and grey water: tree cover and geopolitics of climatic teleconnections ☆

Meine van Noordwijk[1], Sara Namirembe[1], Delia Catacutan[1], David Williamson[1,2] and Aster Gebrekirstos[1,3]

Rainbow water
Atmospheric transport

Rainfall triggering conditions

Precipi-tation

Green water ET evapotranspiration

Blue water streamflow

Soil & ground-water buffering

Continental precipitation recycling ratio ρ_c

$P_{from\ Et}/P$

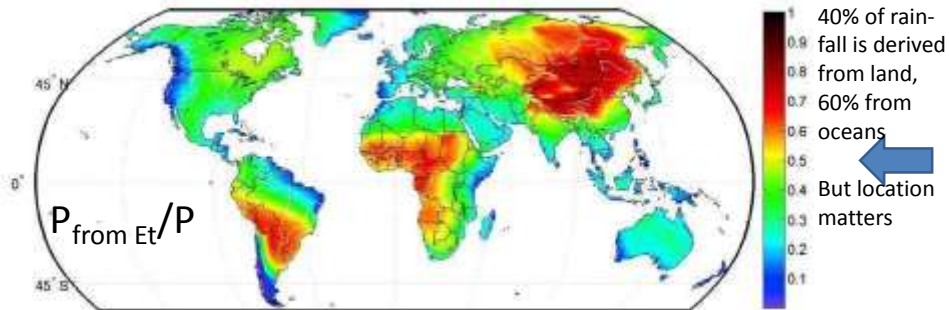40% of rainfall is derived from land, 60% from oceans

But location matters

Figure 3. Average continental precipitation recycling ratio ρ_c (1999–2008).

van der Ent RJ, Savenije HHG, Schaefli B, Steele-Dunne SC, 2010. Origin and fate of atmospheric moisture over continents. Water Resources Research 46, W09525,
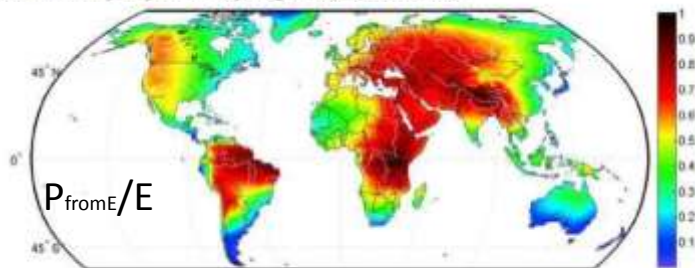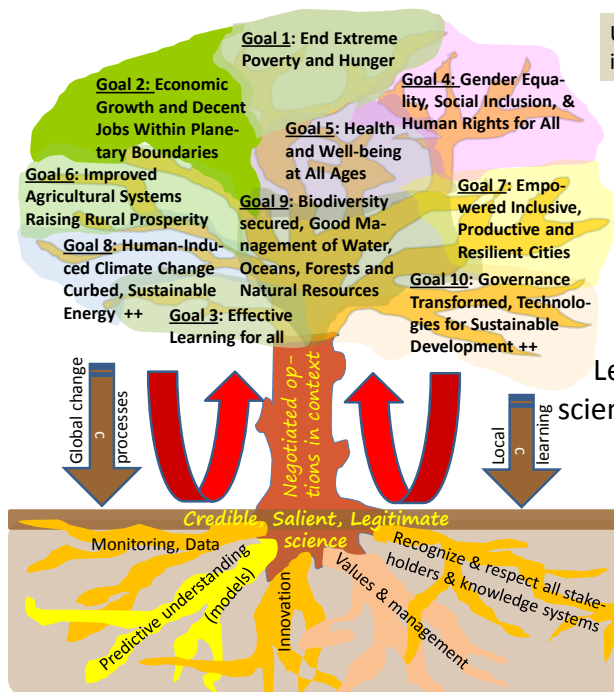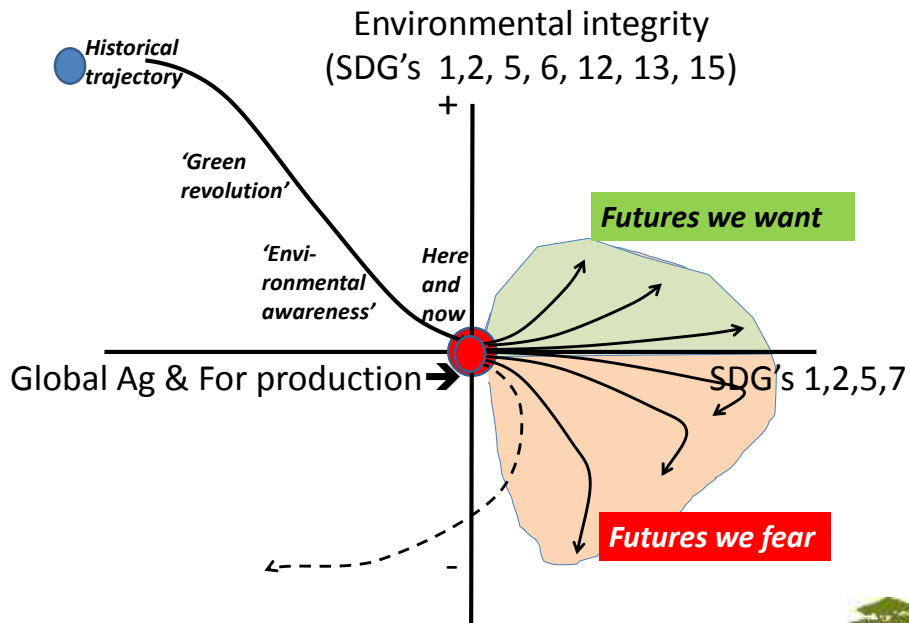
P_{fromE}/E

Figure 4. Average continental evaporation recycling ratio ε_c (1999–2008).

Environmental integrity
(SDG's 1,2, 5, 6, 12, 13, 15)

Historical trajectory

'Green revolution'

'Environmental awareness'

Here and now

Global Ag & For production

Futures we want

Futures we fear

SDG's 1,2,5,7

Goal 1: End Extreme Poverty and Hunger

Goal 2: Economic Growth and Decent Jobs Within Planetary Boundaries

Goal 4: Gender Equality, Social Inclusion, & Human Rights for All

Goal 5: Health and Well-being at All Ages

Goal 6: Improved Agricultural Systems Raising Rural Prosperity

Goal 9: Biodiversity secured, Good Management of Water, Oceans, Forests and Natural Resources

Goal 7: Empowered Inclusive, Productive and Resilient Cities

Goal 8: Human-Induced Climate Change Curbed, Sustainable Energy ++

Goal 10: Governance Transformed, Technologies for Sustainable Development ++

Goal 3: Effective Learning for all

Global change processes

Local learning

Negotiated options in context

Credible, Salient, Legitimate science

Monitoring, Data

Predictive understanding (models)

Innovation

Values & management

Recognize & respect all stakeholders & knowledge systems

Using '10 SDG format' proposed in Nov 2014 but not accepted

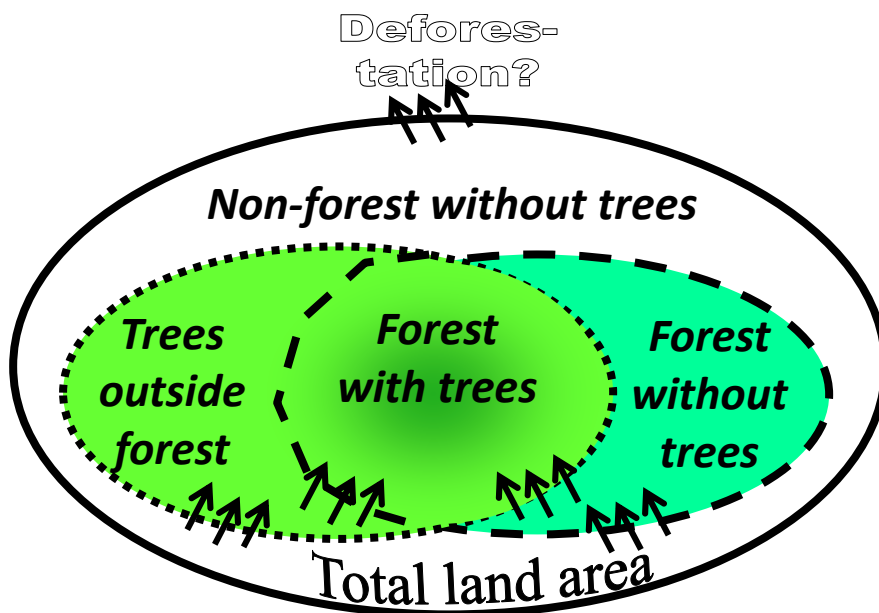**Our forests, trees and agroforestry have a key role in achieving sustainable development goals coherently**

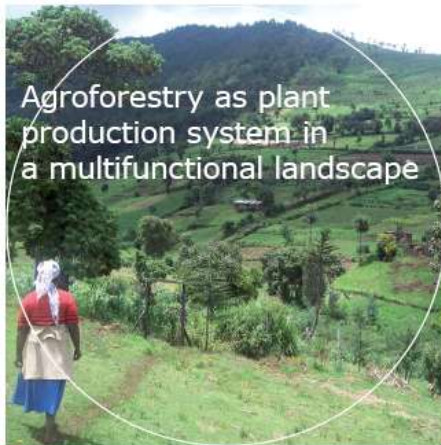Learning, knowledge and science is essential to progress

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Landscapes

- Landscapes are not 'just' mosaics of multiple land covers and land uses,
- They are a space within which livelihoods used to run their course,
- They include aspects of identity, pride and concern and have (some) social coherence

Landscape approaches are

- Attempts to reconcile local and external perspectives on desirable landscape outcomes
- Usually have a 'negotiation' dimension within a 'learning landscape' context

http://blog.worldagroforestry.org/index.php/2013/04/08
/tif-tof-and-totof-trees-or-universal-tree-rights/

van Noordwijk M, Agus F, Dewi S, Purnomo, H (2014) Reducing emissions from land use in Indonesia: motivation, policy instruments and expected funding streams. Mitig Adapt Strateg Glob Change, 19(6), 677-692

Tree cover classification Indonesia 1990-2010; ALREDDI project, 2011

Stakeholder:

1. Undisturbed natural forest ← *Rainforest foundation*
2. Undisturbed + sust. logged natural forest ← *Conservation agency*
3. Closed canopy undisturbed + logged forest
4A. as 3 + agroforest ← *Forest ecologist*
4B. as 3 + timber plantations ← *Ministry of Forestry*
4C. as 3 + agroforest + timber plant's + estate crops ← *UNFCCC definition*
4D as 4C + shrub ← *Modis data*

Patterns ← Actors ← Drivers ← Levers of change

Culture, control, food security, profitability

Natural vegetation, biodiversity, wilderness

Product value chains

Segregate ⟷ *Integrate*
Land sparing *Land sharing*

Agroforestry as plant production system in a multifunctional landscape

Segregated landscapes

Agriculture
Forestry
Farmers
Foresters
Value chains
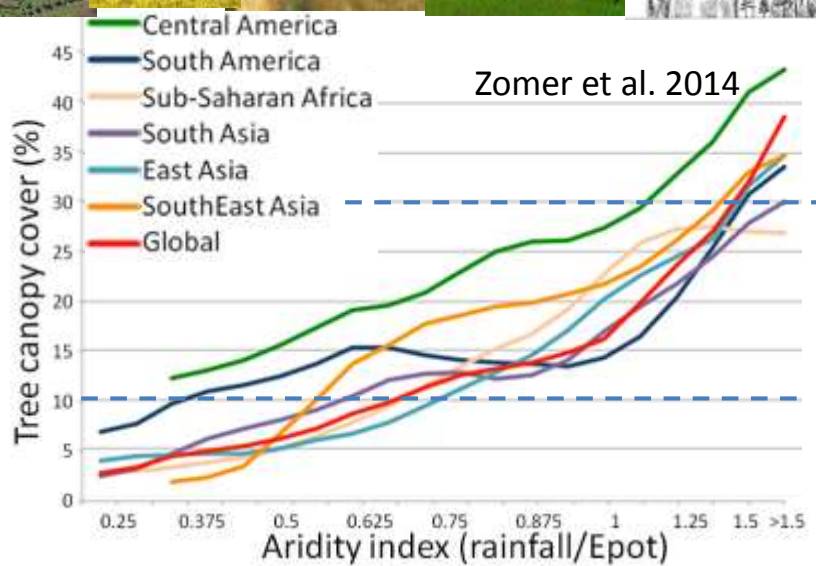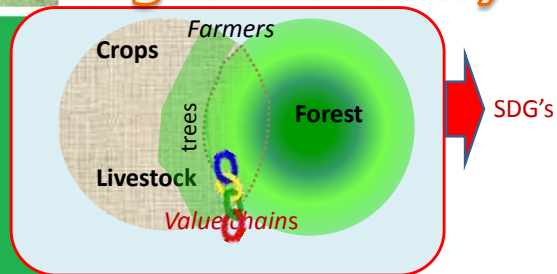End-user (consumer) involvement
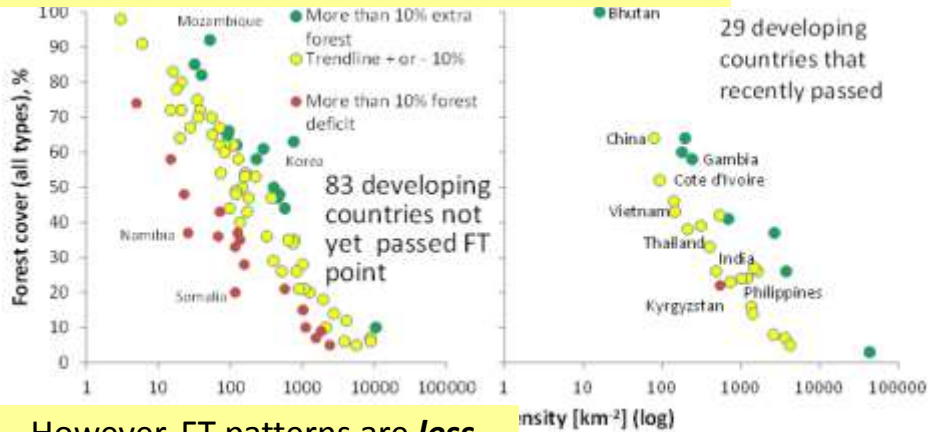
Agro+Forestry

Prof. dr Meine van Noordwijk

Inaugural lecture upon taking up the post of Special Professor of Agroforestry at Wageningen University on 16 October 2014

WAGENINGEN UNIVERSITY

Crops
Farmers
Forest
trees
Livestock
Value chains
SDG's

Zomer et al. 2014

Central America
South America
Sub-Saharan Africa
South Asia
East Asia
SouthEast Asia
Global

Tree canopy cover (%)
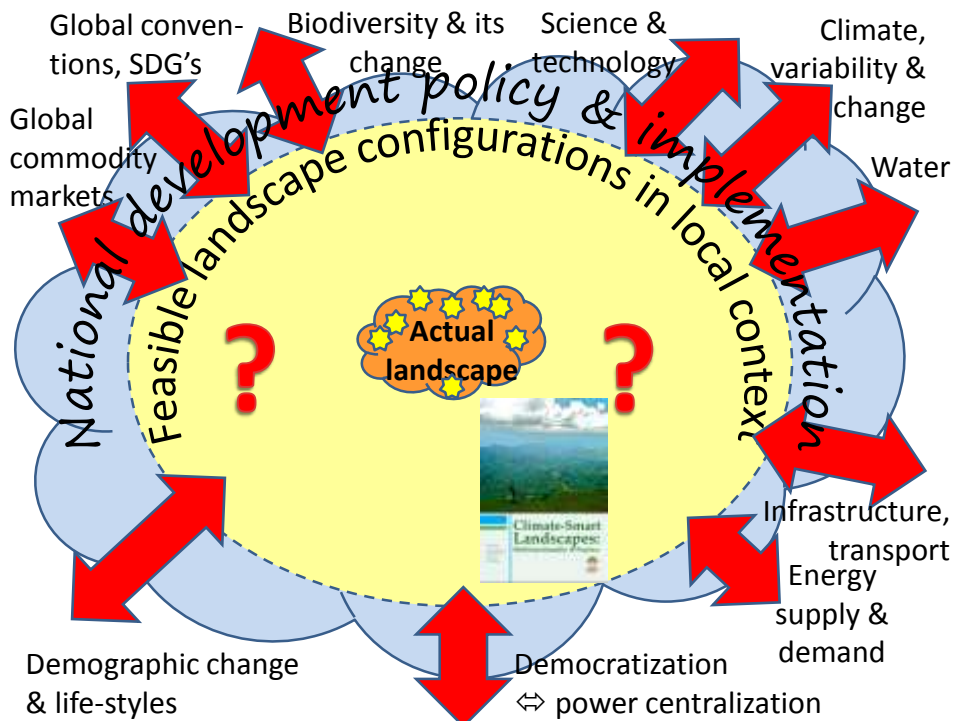
Aridity index (rainfall/Epot)

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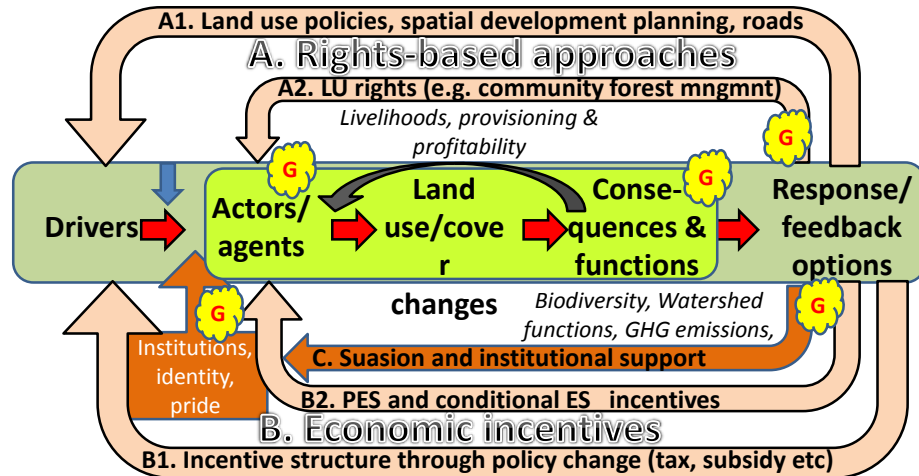Forest Transition (FT) points can occur at any population density and degree of forest cover

However, FT patterns are *less* likely in countries that have more than *10% forest deficit*

Tree cover transitions in tropical landscapes: hypotheses and cross-continental synthesis. Meine van Noordwijk and Grace B. Villamor, 2013. GLP Newsletter Issue No. 10.
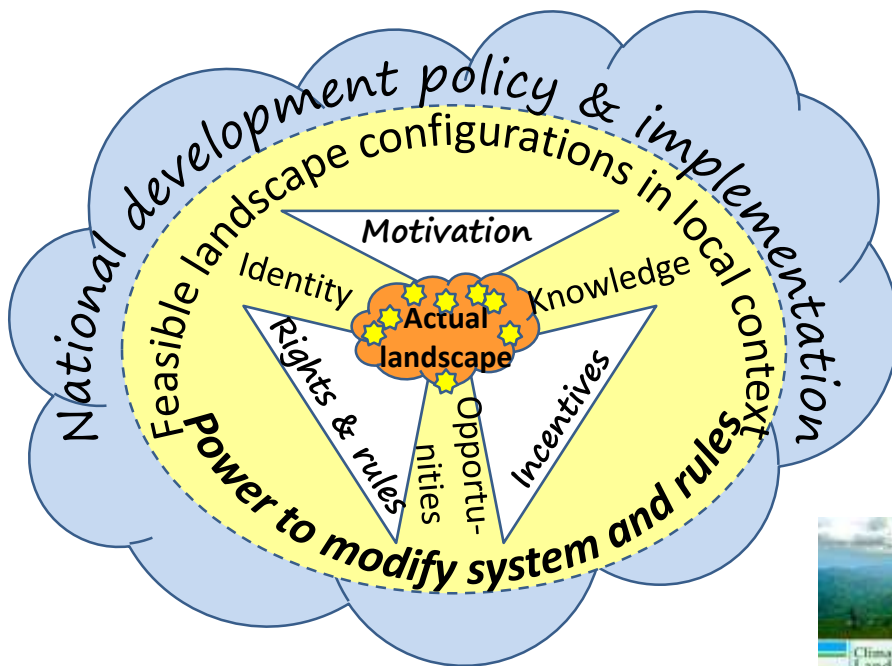
Carrots, sticks & sermons

A1. Land use policies, spatial development planning, roads

A. Rights-based approaches

A2. LU rights (e.g. community forest mngmnt)

Livelihoods, provisioning & profitability

Drivers → **Actors/agents** → **Land use/cover changes** → **Conse-quences & functions** → **Response/feedback options**

Biodiversity, Watershed functions, GHG emissions,

Institutions, identity, pride

C. Suasion and institutional support

B2. PES and conditional ES incentives

B. Economic incentives

B1. Incentive structure through policy change (tax, subsidy etc)

G = Potential gender specificity of analysis & targeting of interventions

Modified from: Van Noordwijk, M., B. Lusiana, G. Villamor, H. Purnomo, and S. Dewi. 2011. Feedback loops added to four conceptual models linking land change with driving forces and actors. Ecology and Society 16(1): r1. [online] URL: http://www.ecologyandsociety.org/vol16/iss1/resp1/

National development policy & implementation in local context

Feasible landscape configurations

Power to modify system and rules

Motivation

Identity

Knowledge

Actual landscape

Rights & rules

Opportu-nities

Incentives

Climate-Smart Landscapes:

Fairly efficient, efficiently fair: Lessons from designing and testing payment schemes for ecosystem services in Asia

Beria Leimona[a], Meine van Noordwijk[a], Rudolf de Groot[b], Rik Leemans[b]

Commodification of ES
Compensation for OpCost
Coinvestment in stewardship

Legend:
- Action research site

Annu. Rev. Environ. Resour. 37, 389-420

5 scales of economics

Social / **Ecological**

Micro **Macro**

Monetary fungibility

Behavioural economics: really internalizing externalities at emotional core of decision making

Individual & household decisions on scarce resources

Environmental economics: internalizing externalities of individual decisions for common goods

National scale decisions on scarce resources

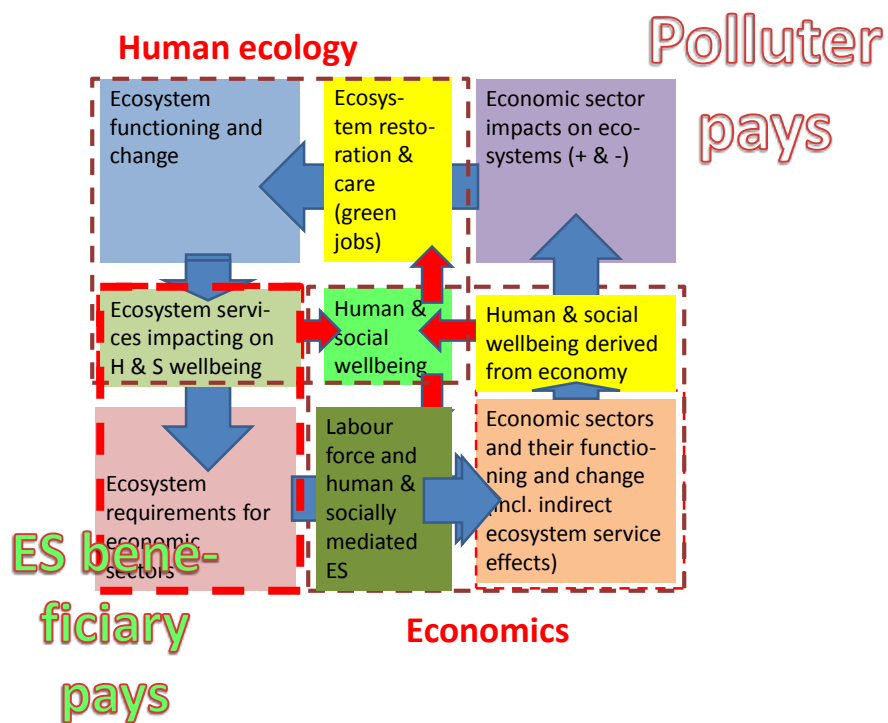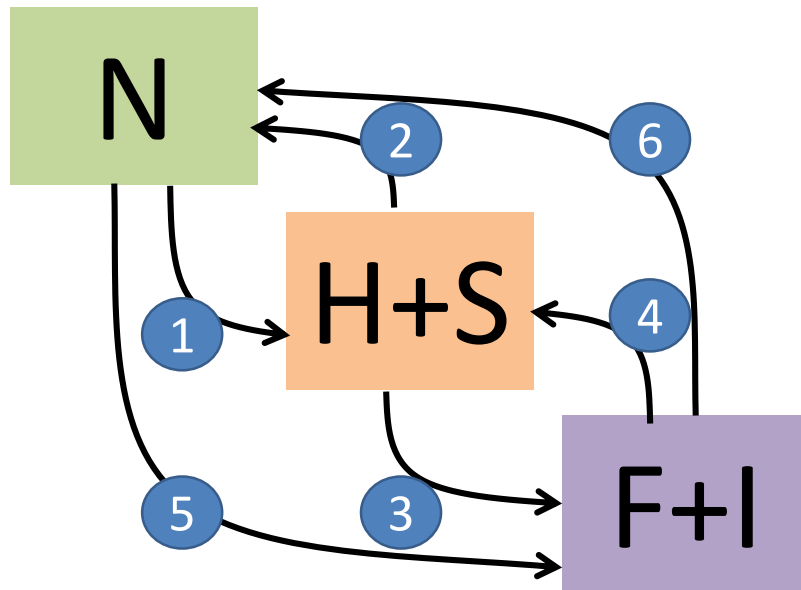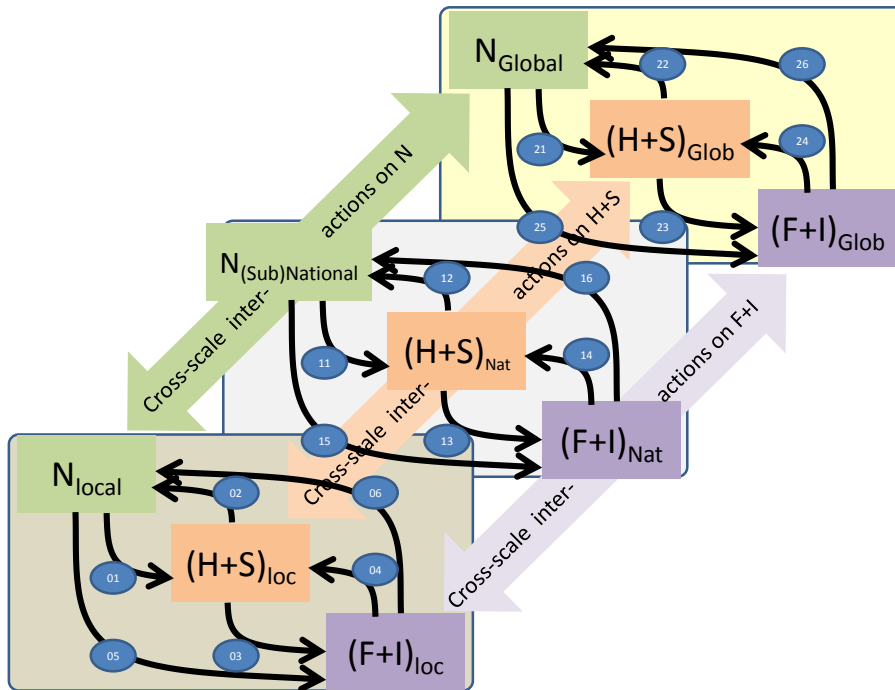**Ecological economics**: planetary boundaries put hard constraints

World Agroforestry Centre

Fairness & Efficiency

Respect, recognition

Commitment

ES bene-ficiaries

Economic incentives

Enhanced ES

Local ES providers

1 **as part of**

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- Current landscape configu-ration often is sub-optimal response to multiple drivers

Climate-Smart Landscapes:

Tree cover transitions and food security in Southeast Asia

Meine van Noordwijk [a,*], Viola Bizard [a,e], Prasit Wangpakapattanawong [b], Hesti L. Tata [c], Grace B. Villamor [d], Beria Leimona [a]

Lessons learnt   and way forward

- Landscapes exist as inter-mediate-scale socio-ecolo-gical systems, between 'livelihoods' & 'governance'
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- Clear indicators for monitor-ing and evaluation are hard to achieve, but essential

Explicitly differentiated 'Theory of Place' ver-sus generic 'Theory of Change' within SDG's

Interlinked fairness ⇔ efficiency negotiations at nested scales

Accept that forests are a 'means' and not a 'goal' for most policy processes

Evidence based on negotiated indicators