Workshop Lake Tana , Bahir Dar 13-17 May 2019

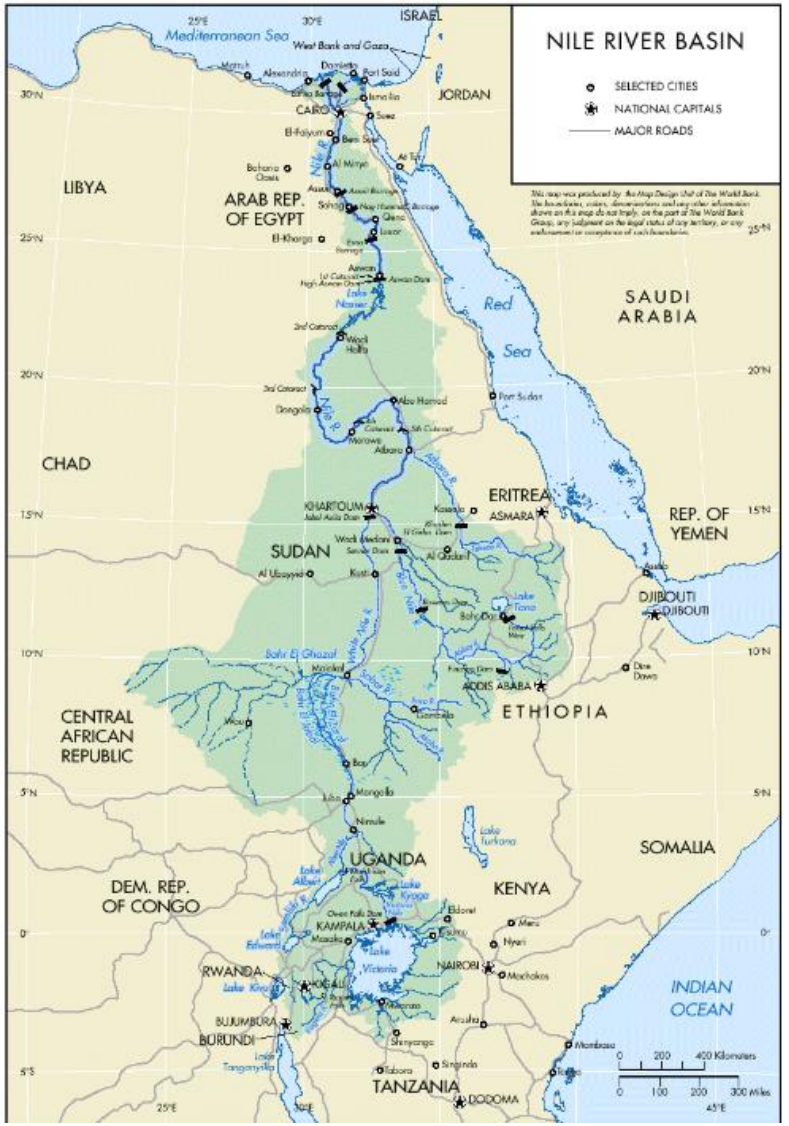
Coinvestment in stewardship and agroforestry as paradigms for Man and Biosphere (MaB) reserves

Meine van Noordwijk

Is this a

- root system
- river
- irrigation system
- marketing network
- organogram of a project
- none of the above

?



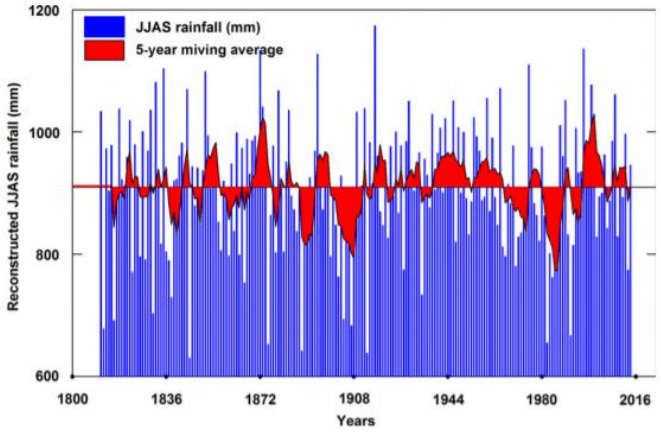
Global Change Biology

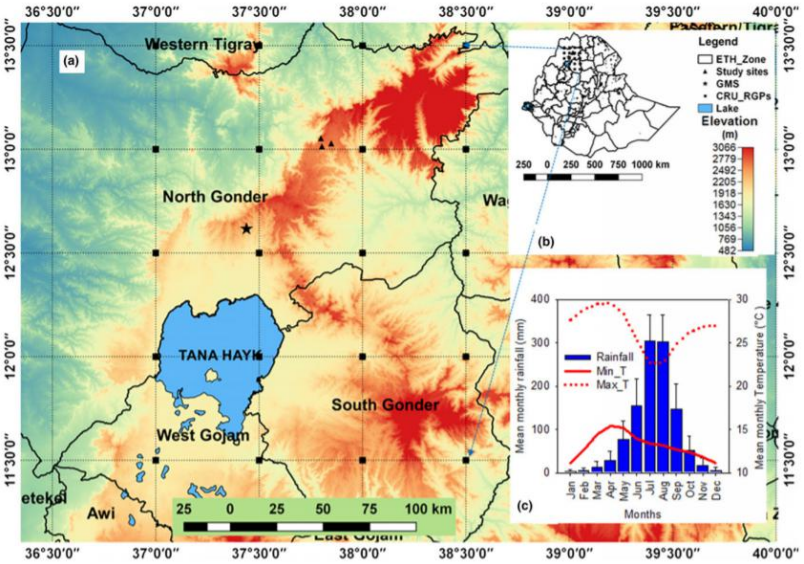
PRIMARY RESEARCH ARTICLE

Multi-century tree-ring precipitation record reveals increasing frequency of extreme dry events in the upper Blue Nile River catchment

Mulugeta Mokria, Aster Gebrekirstos, Abrham Abiyu, Meine Van Noordwijk, Achim Bräuning

First published: 16 July 2017 | https://doi.org/10.1111/gcb.13





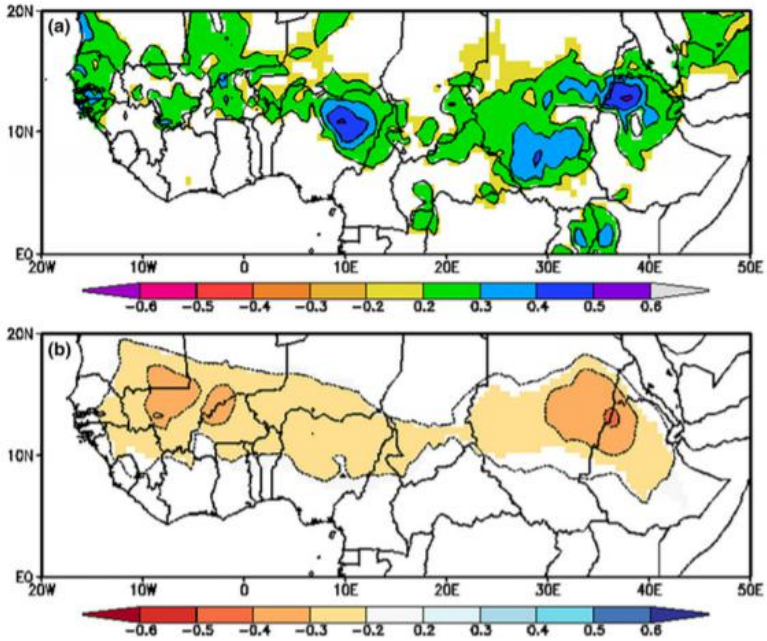


FIGURE 5 Spatial correlations between TANA chronology and June–September rainfall (a) and mean maximum temperature (b) for the period 1901–2014

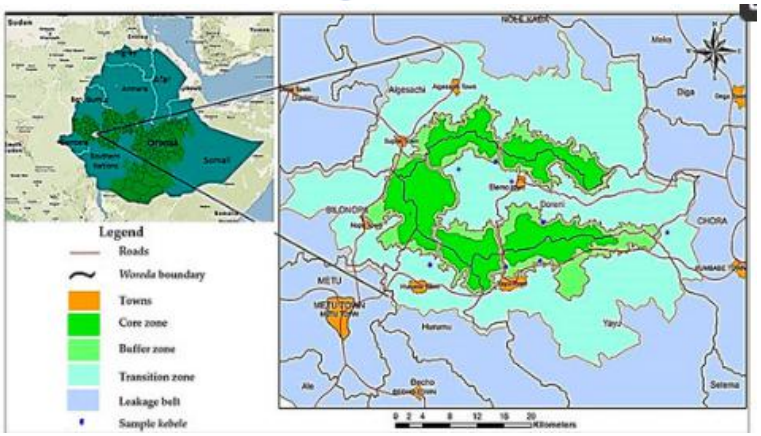
Sustainability **2018**, *10*(8), 2722; https://doi.org/10.3390/su10082722

Article

Local Agroforestry Practices for Food and Nutrition Security of Smallholder Farm Households in Southwestern Ethiopia

Omarsherif Jemal [1,*], **Daniel Callo-Concha** [1] and **Meine Van Noordwijk** [2,3]

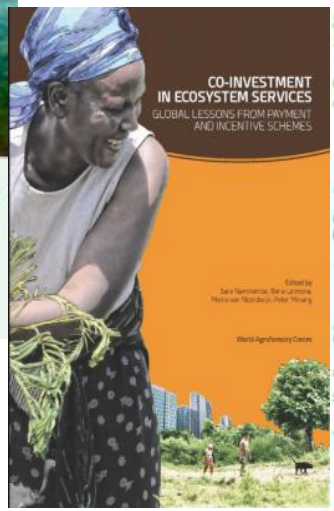
In Yayu multipurpose-trees-on-farmlands are used mainly for **food production**, multistorey-coffee-system for **income-generation**, and homegardens for **both**. In total, 80 edible species were identified across all AFPs, with 55 being primarily cultivated for household food supply. Generally, household income emanates from four major sources, multistorey-coffee-system (60%), homegarden (18%), multipurpose-trees-on-farmlands (13%), and off-farm activities (11%).

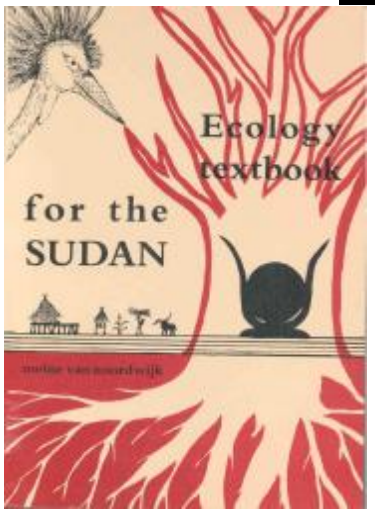



How trees and people can co-adapt to climate change
Reducing vulnerability in multifunctional landscapes
WORLD AGROFORESTRY CENTRE

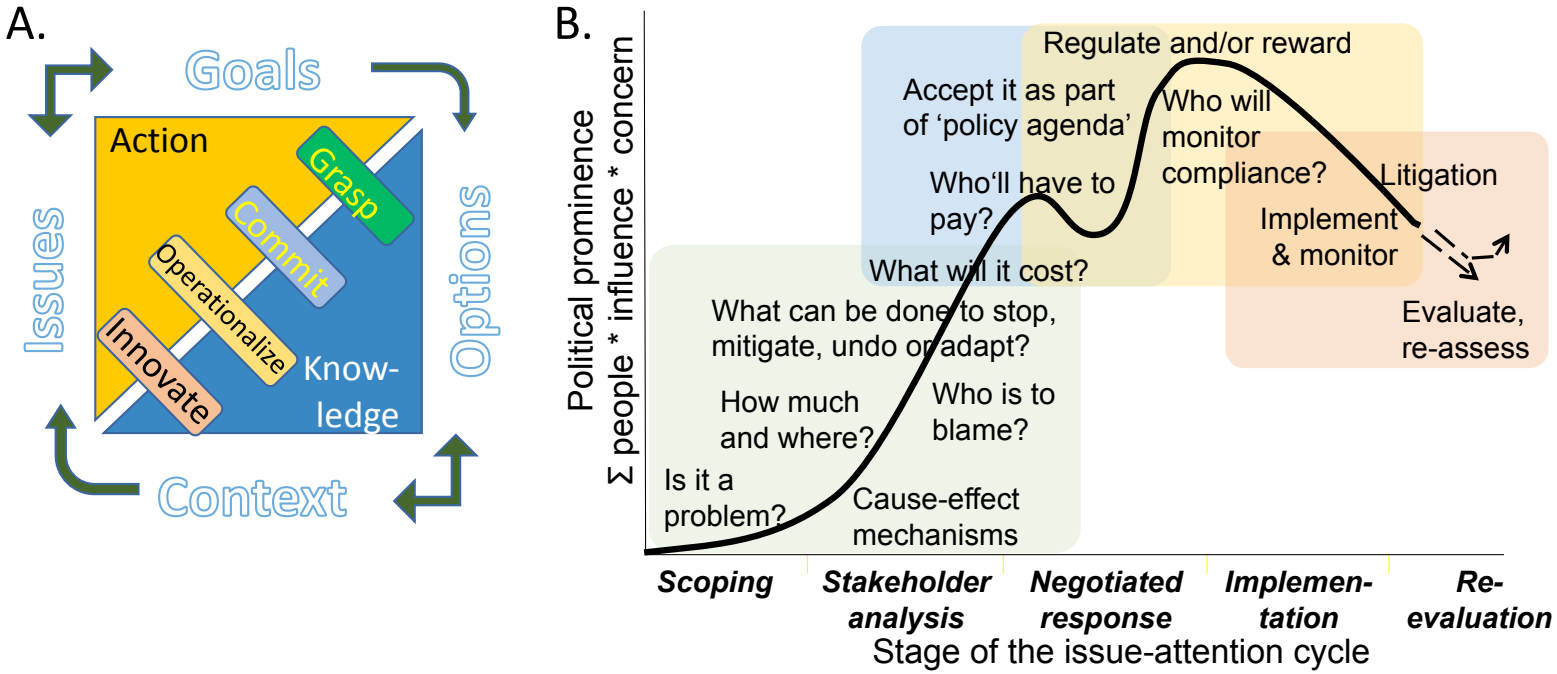

Who?
How, what?
Where, when?
So what?
Who cares?
Why?
Negotiation-support toolkit for learning landscapes
WORLD AGROFORESTRY CENTRE


Climate-Smart Landscapes:
Multifunctionality in Practice


CO-INVESTMENT IN ECOSYSTEM SERVICES
GLOBAL LESSONS FROM PAYMENT AND INCENTIVE SCHEMES


Ecology textbook
for the SUDAN
meine van noordwijk


40
World Agroforestry
SUSTAINABLE DEVELOPMENT THROUGH TREES ON FARMS:
agroforestry in its fifth decade
Edited by Meine van Noordwijk

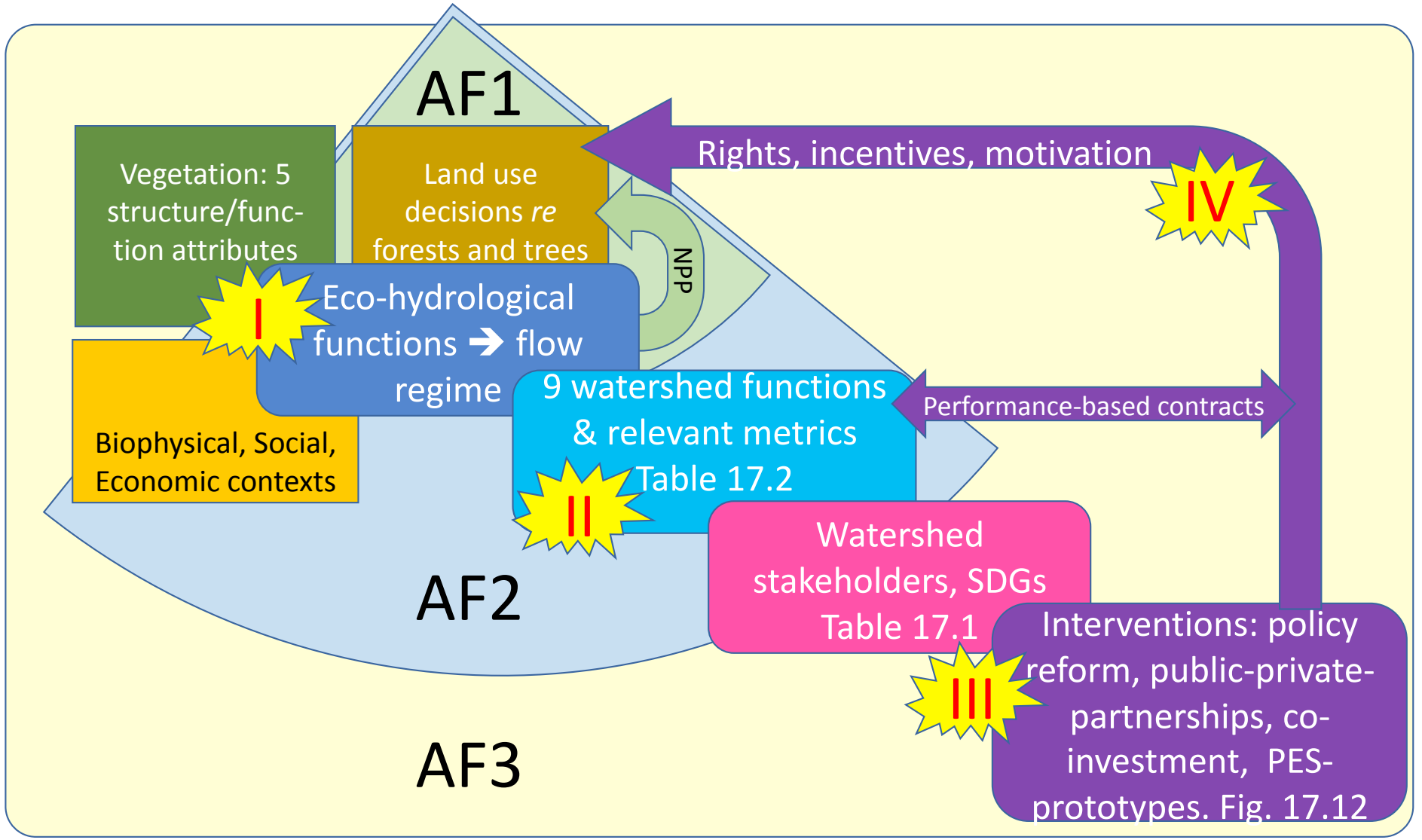

A.
Goals
Action
Grasp
Commit
Operationalize
Innovate
Know-
ledge
Issues
Options
Context
B.
Political prominence
Σ people * influence * concern
Regulate and/or reward
Accept it as part
of 'policy agenda'
Who will
monitor
compliance?
Litigation
Who'll have to
pay?
Implement
& monitor
What will it cost?
What can be done to stop,
mitigate, undo or adapt?
Evaluate,
re-assess
How much
and where?
Who is to
blame?
Is it a
problem?
Cause-effect
mechanisms
Scoping
Stakeholder
analysis
Negotiated
response
Implemen-
tation
Re-
evaluation
Stage of the issue-attention cycle

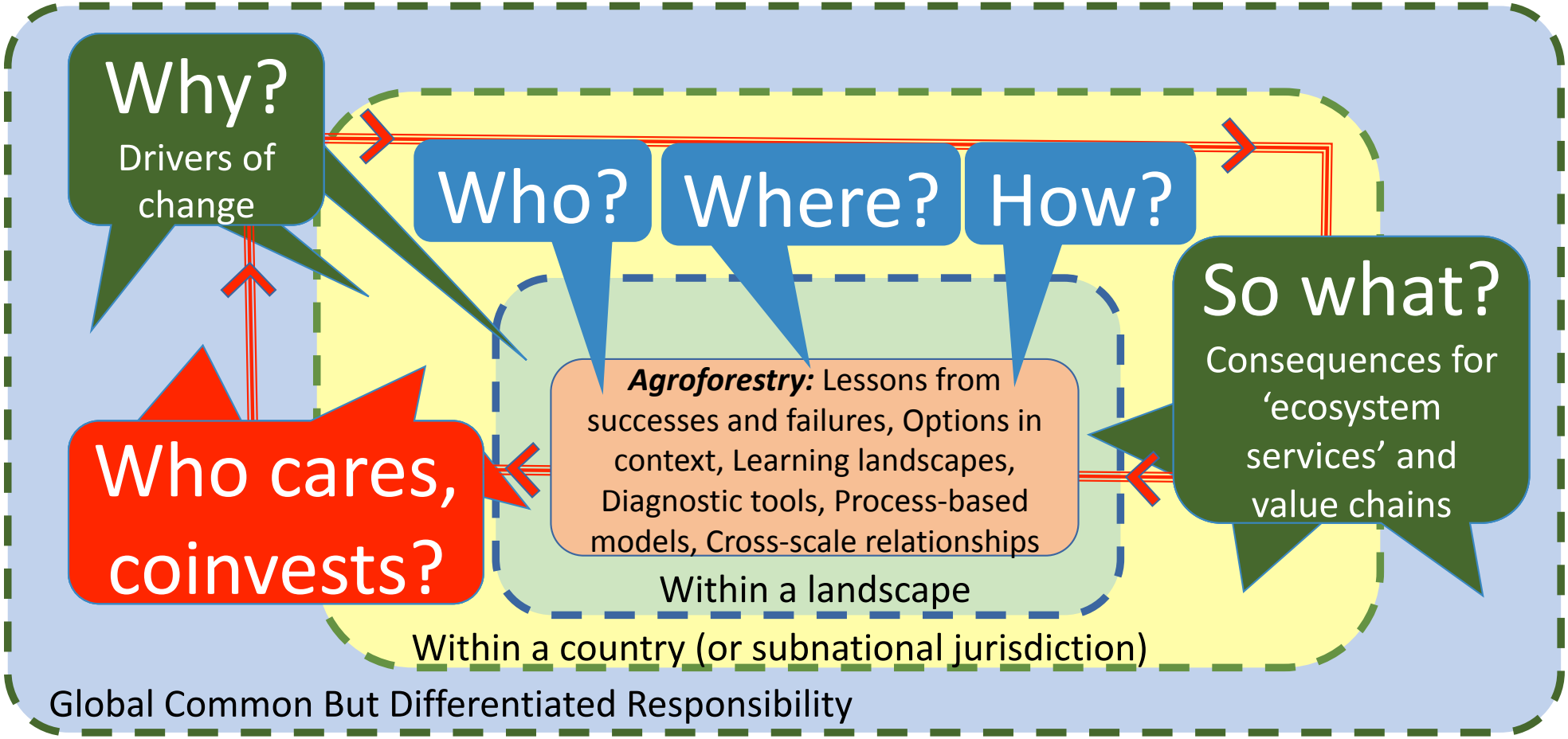
http://www.worldagroforestry.org/

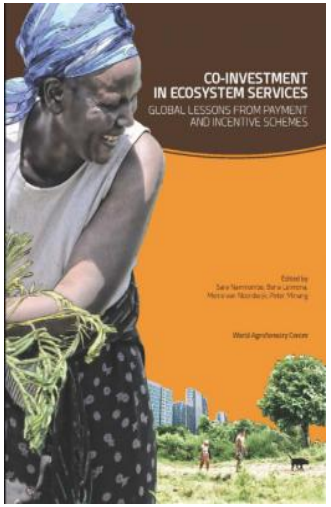
Section III, 9 chapters on policy relevance:
Small islands, disaster avoidance, community forestry, energy transformations, nature-based water management, AF policy, ES enhancement, methods, SDG synergy

Section II, 6 iconic landscape transformations:
Shinyanga, Niger, Sumberjaya, Baoshan, Bundelkhand, Restoration in Brazil

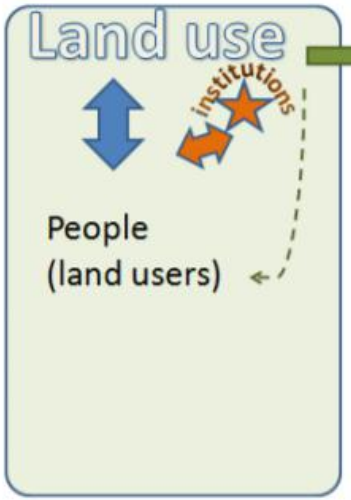
Section I, 6 chapters on science foundations:
Agroforestry concepts, trees, tree domestication, soils, tree-soil-crop interactions, regional trees-on-farm patterns


AF1
Vegetation: 5 structure/func-tion attributes
Land use decisions *re* forests and trees
NPP
Rights, incentives, motivation
IV
I
Eco-hydrological functions ➔ flow regime
Biophysical, Social, Economic contexts
9 watershed functions & relevant metrics Table 17.2
II
Performance-based contracts
Watershed stakeholders, SDGs Table 17.1
III
Interventions: policy reform, public-private-partnerships, co-investment, PES-prototypes. Fig. 17.12
AF2
AF3


Why?
Drivers of change
Who?
Where?
How?
So what?
Consequences for 'ecosystem services' and value chains
Who cares, coinvests?
Agroforestry: Lessons from successes and failures, Options in context, Learning landscapes, Diagnostic tools, Process-based models, Cross-scale relationships
Within a landscape
Within a country (or subnational jurisdiction)
Global Common But Differentiated Responsibility



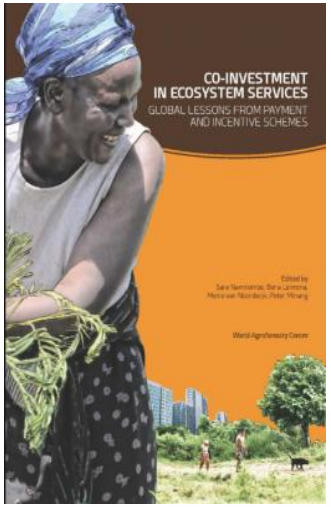
http://www.worldagroforestry.org/sd/environmental-services/PES



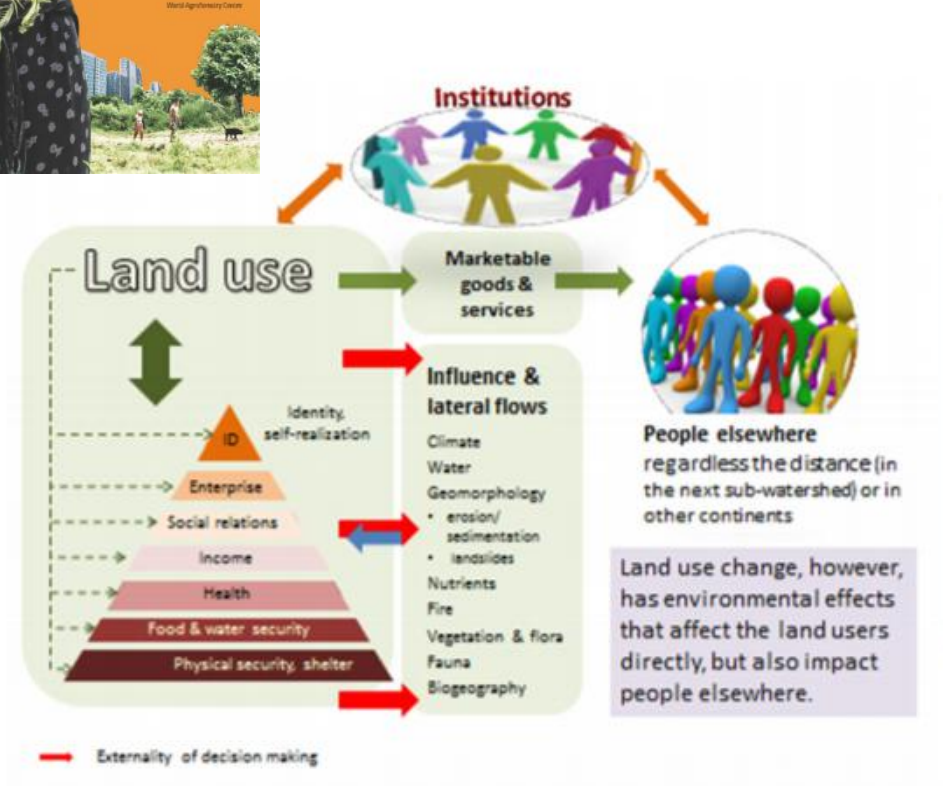
Marketable goods & services

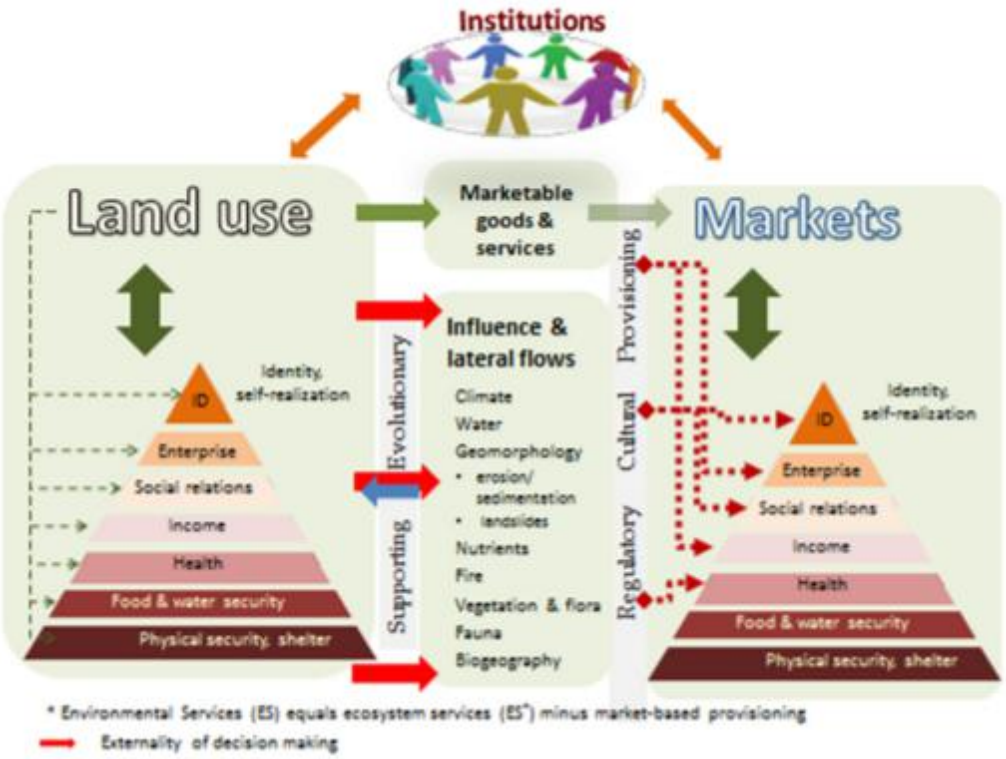
Land is used by people to satisfy their own needs within emerging local institutions, but once they find external markets for products and services, this feeds back to their land use decisions

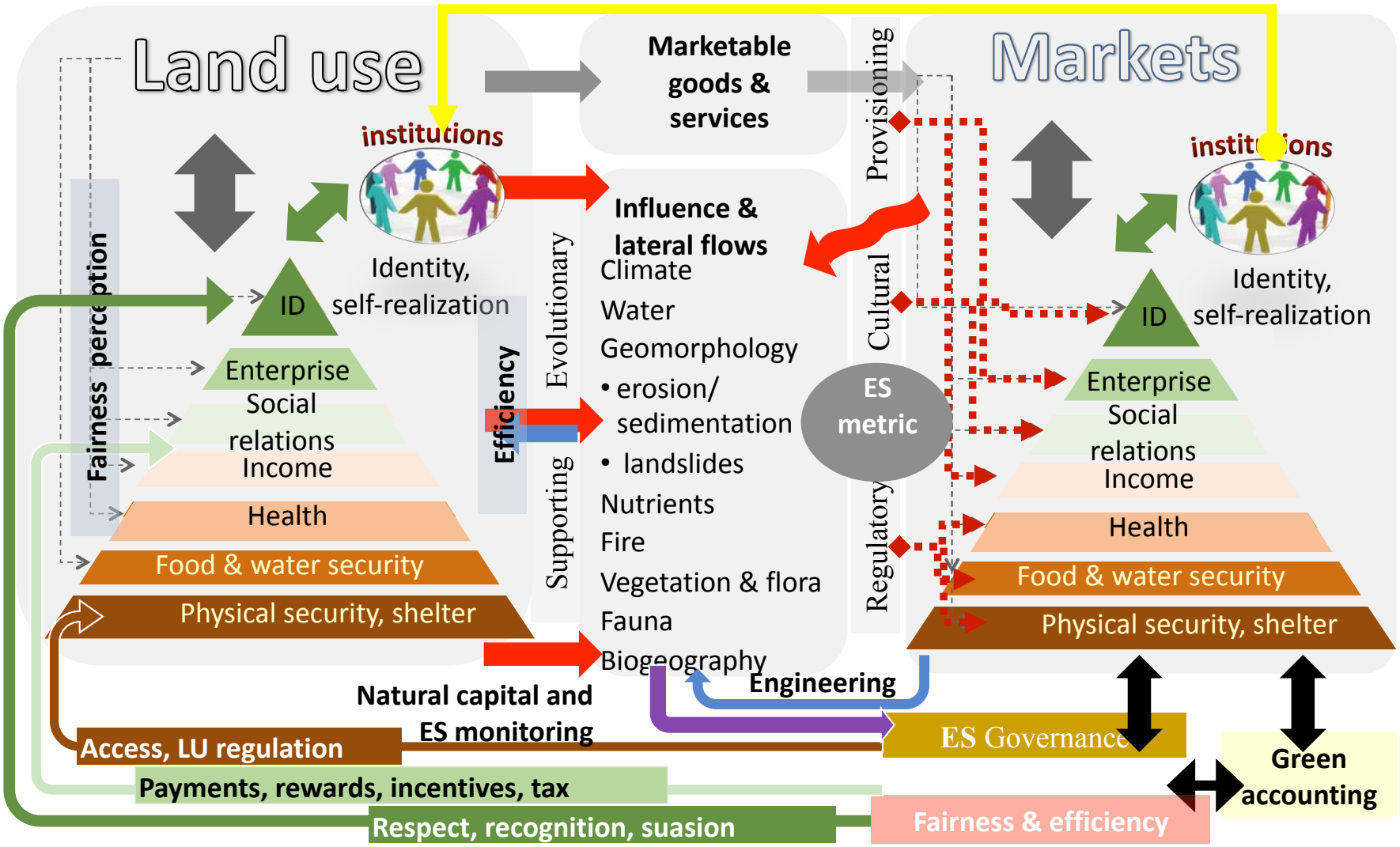
People are complex entities. Their decisions on how they manage their land are influenced by many aspects of 'well-being' and regulated by institutions



http://www.worldagroforestry.org/sd/environmental-services/PES

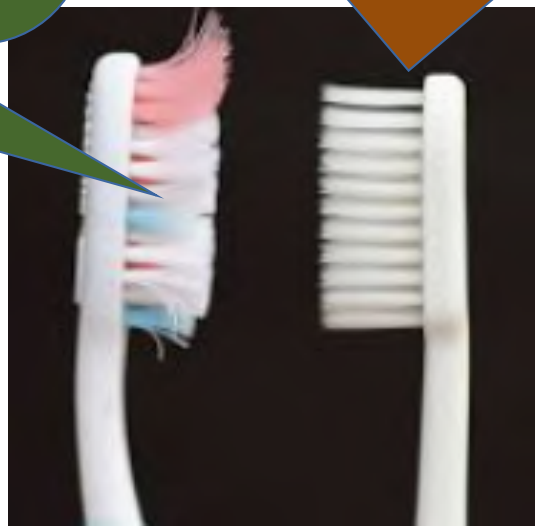





Land use
Marketable goods & services
Markets
institutions
Influence & lateral flows
Provisioning
Cultural
Regulatory
Supporting
Evolutionary
Efficiency
Fairness perception
ID
Identity, self-realization
Enterprise
Social relations
Income
Health
Food & water security
Physical security, shelter
Climate
Water
Geomorphology
• erosion/ sedimentation
• landslides
Nutrients
Fire
Vegetation & flora
Fauna
Biogeography
ES metric
Natural capital and ES monitoring
Engineering
ES Governance
Access, LU regulation
Payments, rewards, incentives, tax
Respect, recognition, suasion
Fairness & efficiency
Green accounting

Tools
are like
toothbrushes,

Yeah, every-
body prefers
their own



Section 1. **Understanding context: multifunctional landscape mosaics**

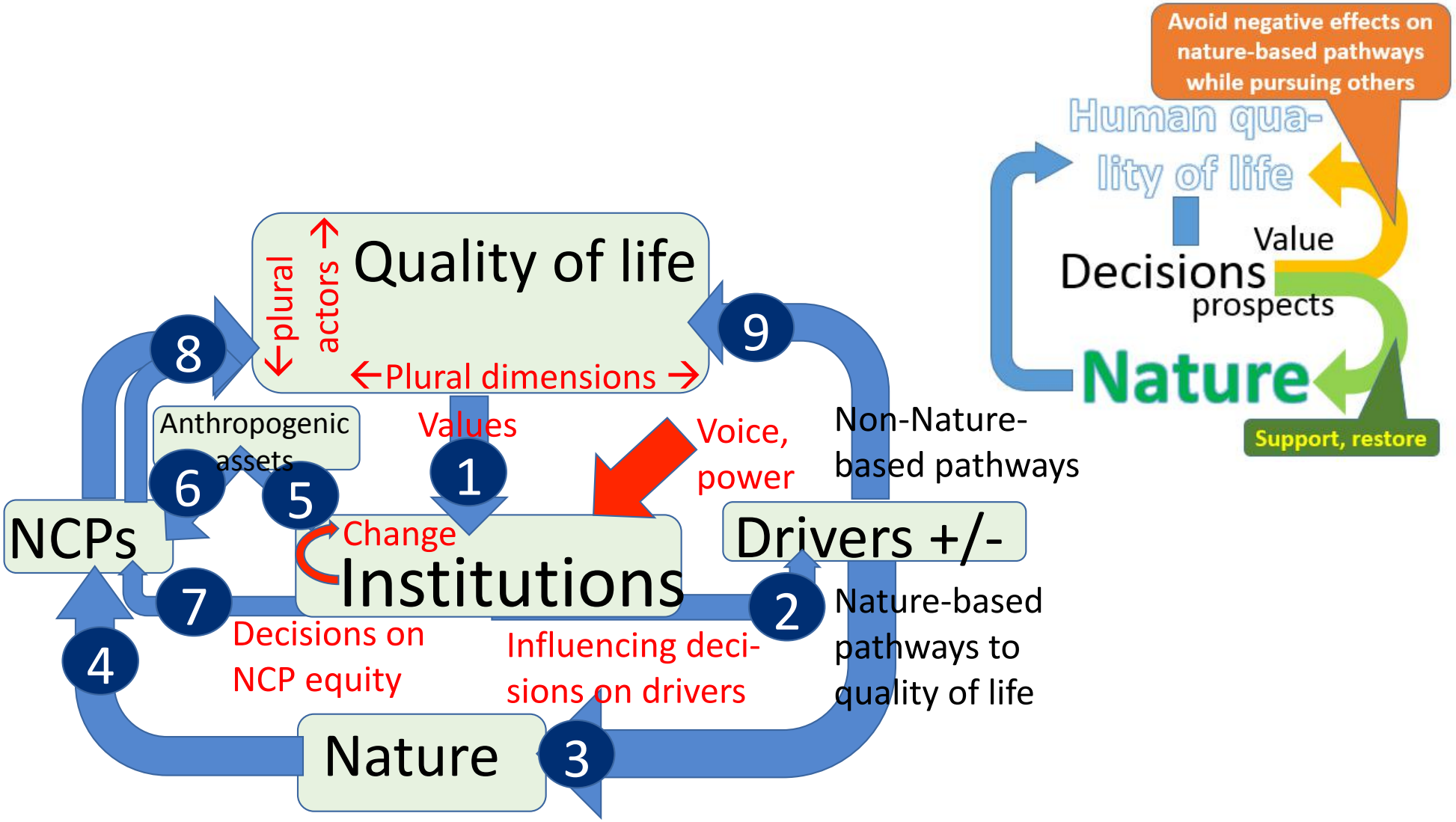
- ❑Participatory landscape appraisal (PaLA)
- ❑Participatory analysis of poverty, livelihoods and environment dynamics (PAPoLD)
- ❑Rapid appraisal of drivers of land-use change (DriLUC)

Section 2. **Lives, land use and livelihoods: trees, agroforestry technology and markets**

Section 3. **Landscape: ecosystem services, trade-offs**

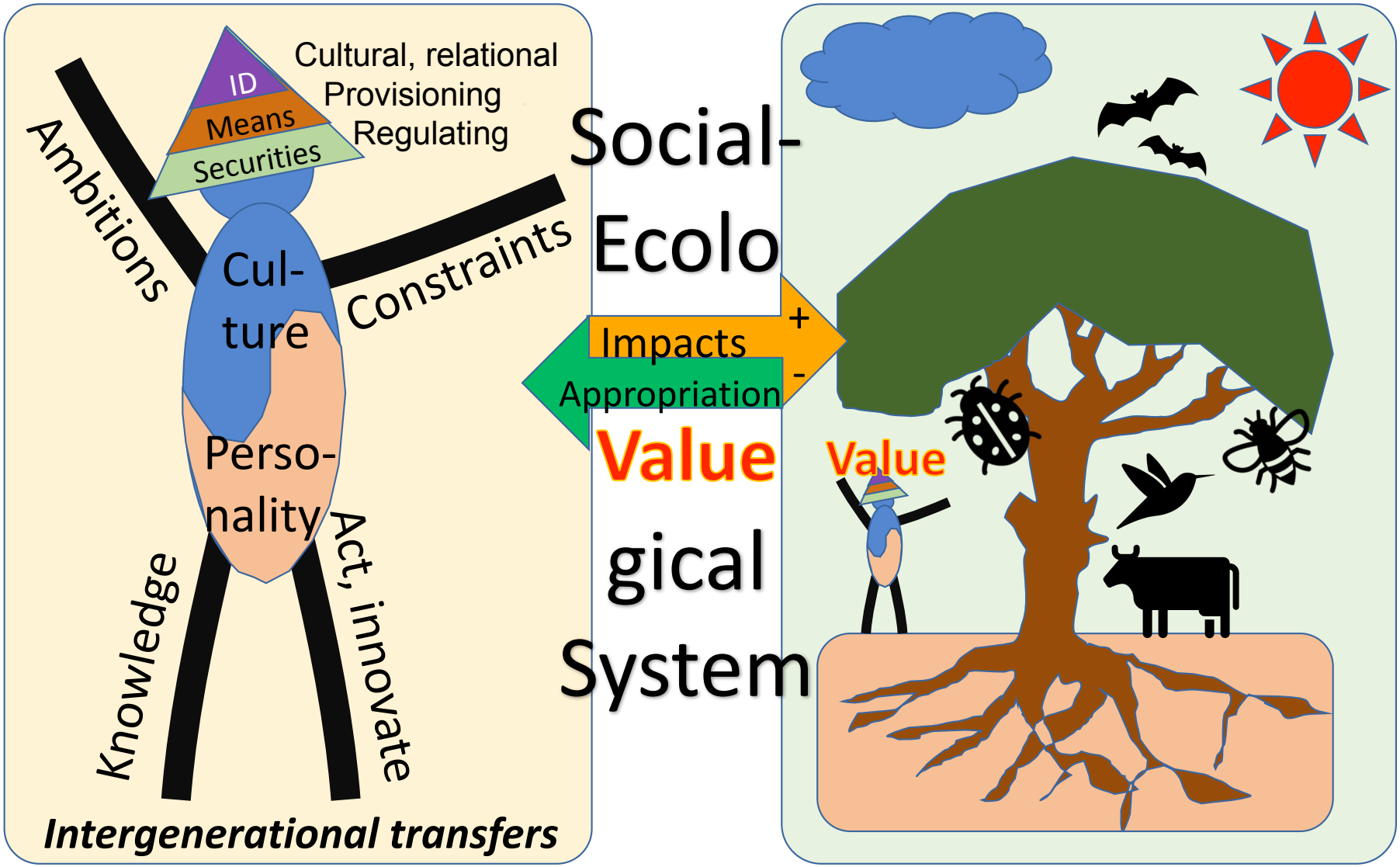
Section 4. **Transformations: governance, rights**

Section 5. Nego**tiation support as process**

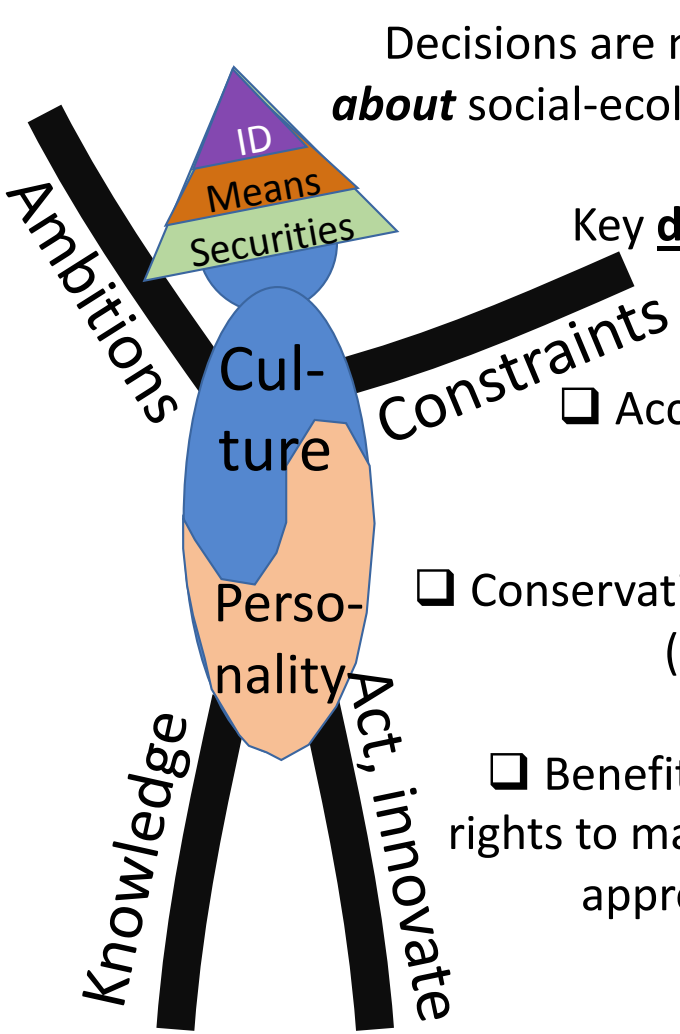

Quality of life
←plural actors→
←Plural dimensions→
Values
Voice, power
Non-Nature-based pathways
Anthropogenic assets
NCPs
Change
Institutions
Drivers +/-
Nature-based pathways to quality of life
Decisions on NCP equity
Influencing decisions on drivers
Nature
1
2
3
4
5
6
7
8
9
Avoid negative effects on nature-based pathways while pursuing others
Human quality of life
Value
Decisions
prospects
Nature
Support, restore


Avoid negative effects on nature-based pathways while pursuing others
Human qua-
lity of life
Value
Decisions
prospects
Nature
Support, restore


16,17:
1-5: Multiple poverty dimensions
6-9: Development infrastructure
10-12: Fairness
13-15: Ecological infrastructure
CBD Nature's contributions to people


ID
Means
Securities
Cultural, relational
Provisioning
Regulating
Ambitions
Constraints
Cul-
ture
Perso-
nality
Knowledge
Act, innovate
Intergenerational transfers
Social-
Ecolo
Impacts
+
Appropriation
-
Value
gical
System
Value

Decisions are made ***in*** and ***about*** social-ecological systems



Intergenerational transfers

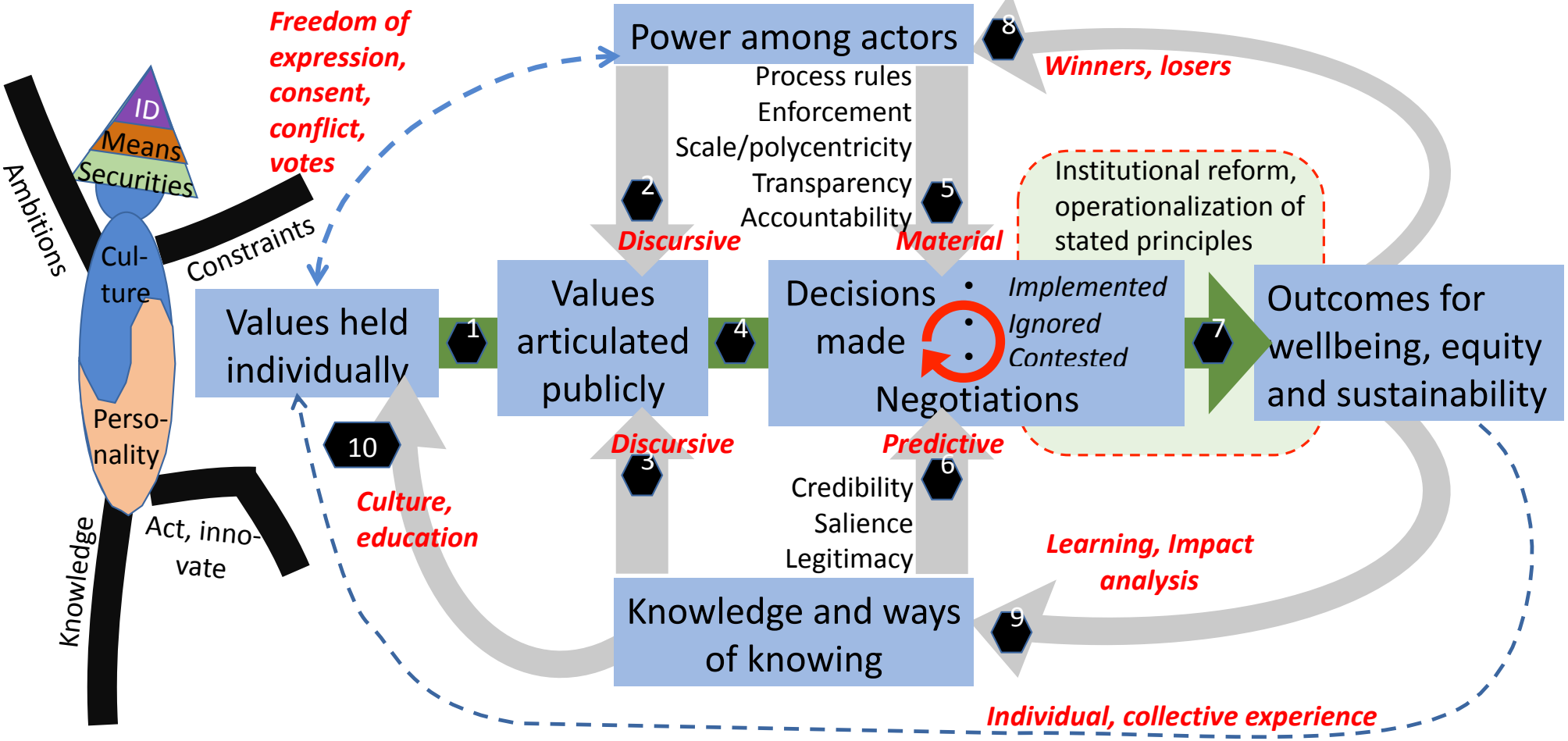
Key **decisions** imply:

- ❑ Accepted/avoided damage
- ❑ Conservation/restoration (co-)investment
- ❑ Benefit distribution & rights to manage/convert/ appropriate/control

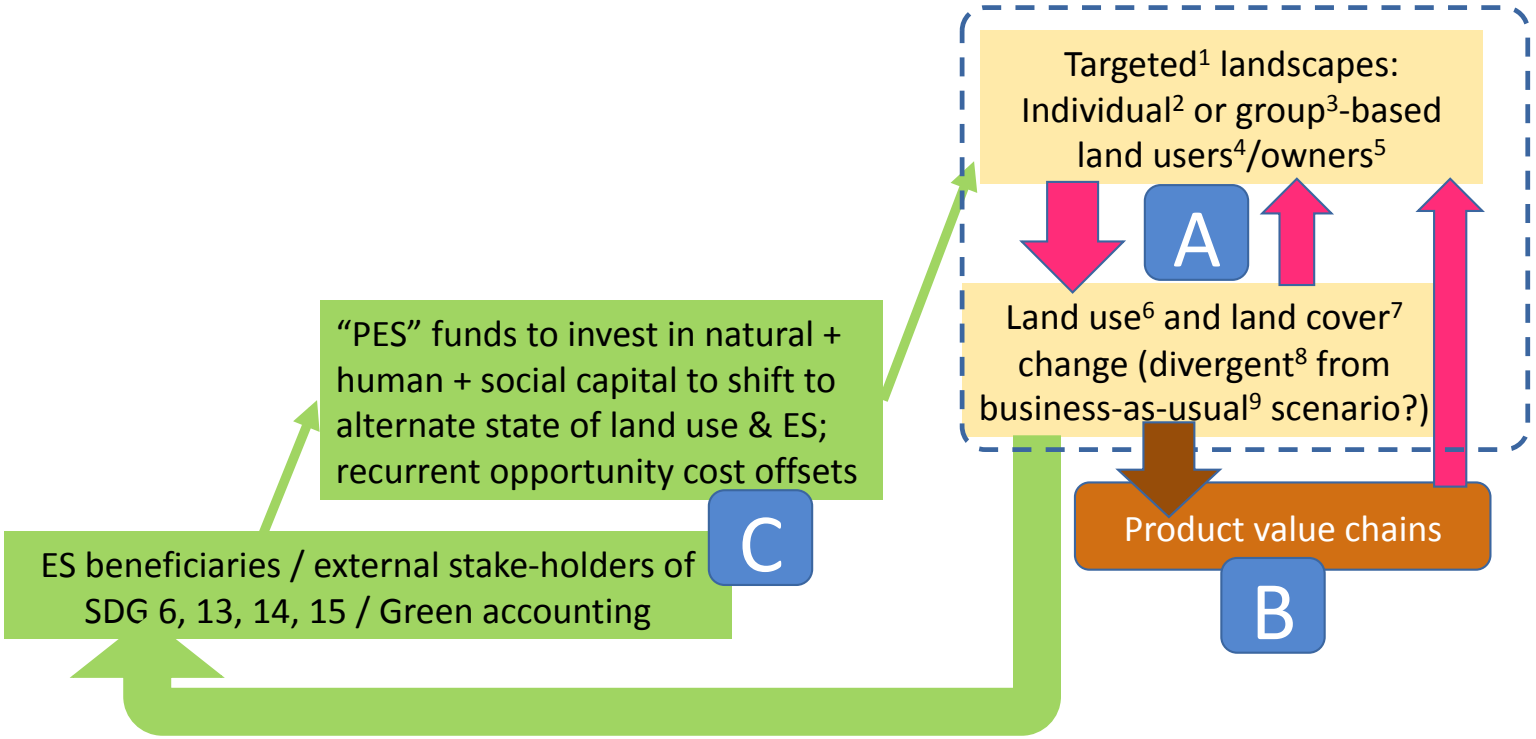
‘Value concepts’ derive ***within*** and ***about*** social-ecological systems

Value can refer to:

Life on the planet as principle
Existence of diversity & its history
Source of inspiration, admiration, art
Sense of place, identity, heritage
Functioning social-ecological systems
Components thereof, e.g. vegetation
Specific plants or animals therein
Physical security from floods, landslides
Food + energy + water provisioning
Human health, disease control
Human livelihoods within SES
Avoided costs of technical substitution


Freedom of expression, consent, conflict, votes
Power among actors
8
Winners, losers
Process rules
Enforcement
Scale/polycentricity
Transparency
Accountability
2
5
Discursive
Material
Institutional reform, operationalization of stated principles
ID
Means
Securities
Ambitions
Cul-ture
Constraints
Values held individually
1
Values articulated publicly
4
Decisions made
Implemented
Ignored
Contested
Negotiations
7
Outcomes for wellbeing, equity and sustainability
Perso-nality
10
Discursive
Predictive
3
6
Culture, education
Credibility
Salience
Legitimacy
Learning, Impact analysis
Knowledge
Act, inno-vate
Knowledge and ways of knowing
9
Individual, collective experience

Minimum configuration for Payments for Environmental Services (PES)



Six dimensions (A…F) in which "co-investment" can seek synergy and efficiency beyond "pure PES"