

LEGATO

The ecosystem service cascade: the influence of purpose, power, and prosperity, benefits and beneficiaries



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The ESS Objective in LEGATO

- Identifying the ESS enjoyed by farmers and the society at large in the Legato field sites.
- **Quantitative and /or qualitative characterisation of the ESS, as appropriate.**
- Integrating the descriptions and analysing the interaction of provisioning, regulating and socio-cultural ecosystem services.
- Underpinning sustainable management strategies (Ecol. Engineering) with indicators.
- Allowing for monetary and non-monetary valuation.

The usual Environmental Economics Approach: Sustaining the Capital Stocks

To generate a constant flow of income by

- sustaining the the sum of all capital stocks, assuming substitutability, (**weak sustainability**), or
- preserving each stock separately, assuming complementarity & co-production (**strong sustainability**).

RESEARCH 11

Human made capital



Natural capital

Human capital



Social capital

The benefit

- Established methodology, the basis of capital stock valuation.
- Significant amounts of data are available.

The downsides

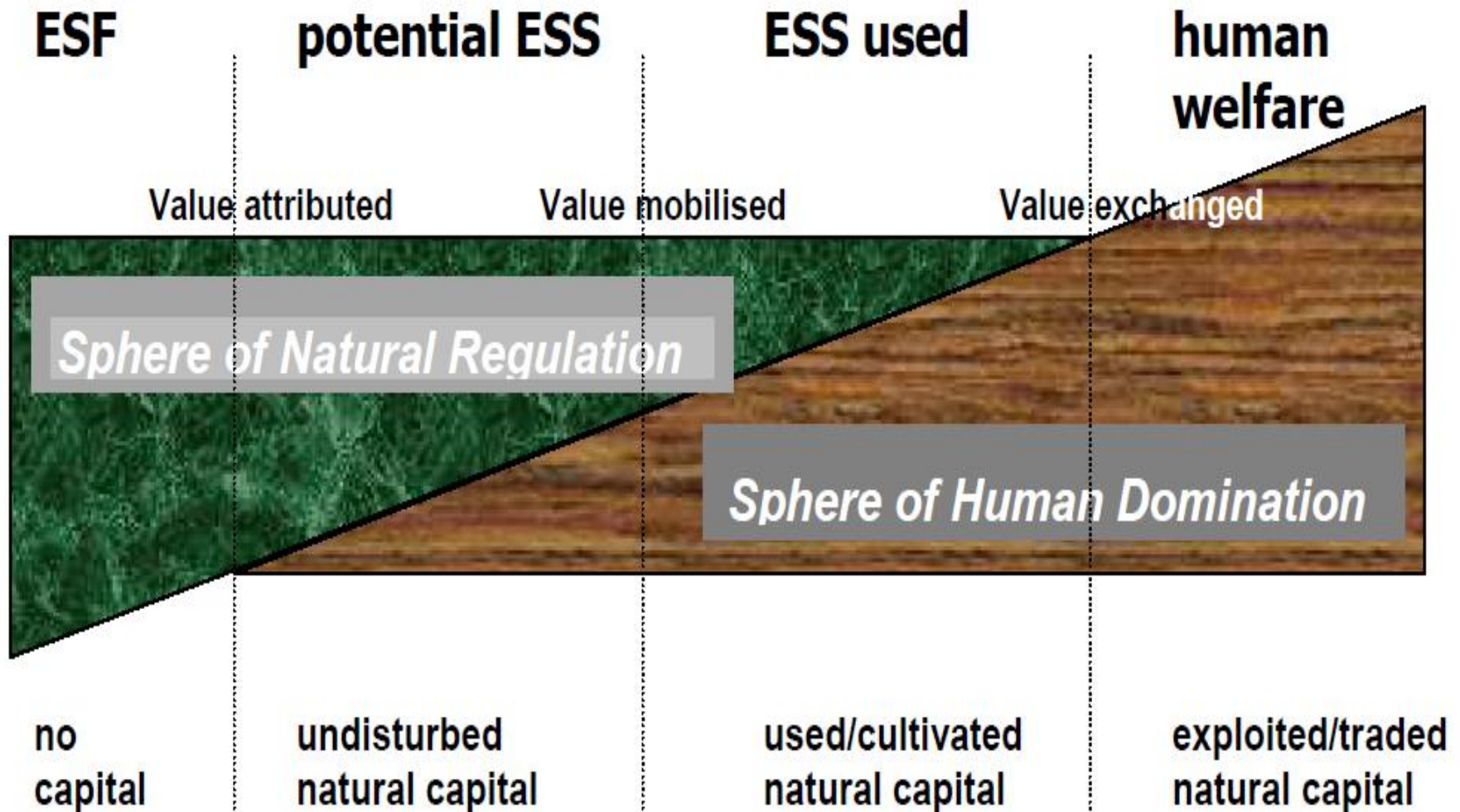
Capital stocks have a size, but no quality:

Biodiversity is an *abstract good*, a quality.

Elements are considered independent, values cumulative, not conditional.

Sustainability is a long-term process, not easily reconciled with economic discounting.

ESS, Values and Capitals

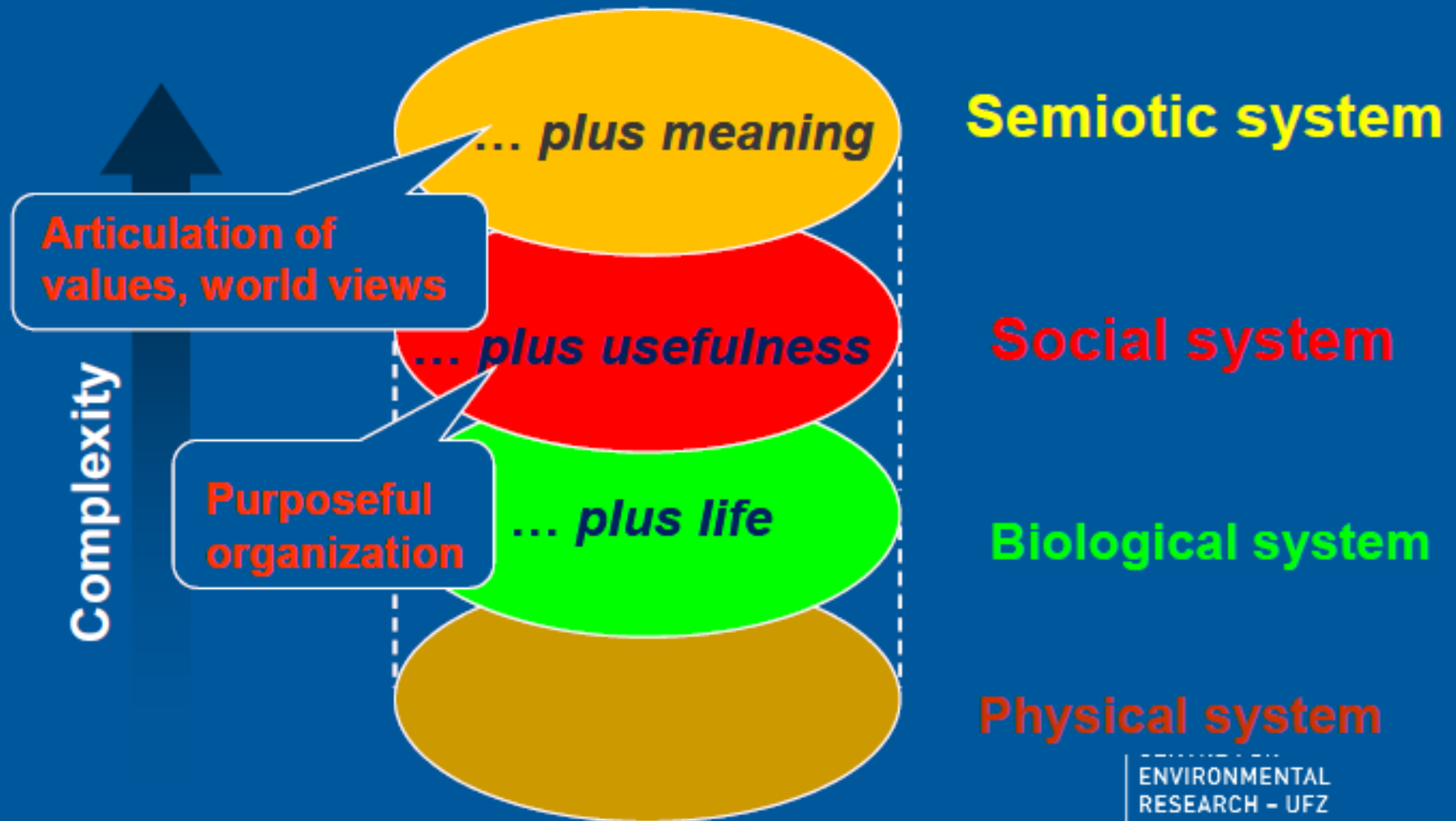


The LEGATO Challenge

- Integrating the description of provisioning, regulating and socio-cultural services has no precedent.
- It requires developing an understanding of their interaction based on conceptual work, observations and case studies.
- As the lifestyles, income sources, market and non-market income overlap, so do the orientations and values: no one-size-fits-all approach is feasible!
- ESS generation requires more than just natural capital – it is transdisciplinary.

Orders of system complexity

After M.A.K Halliday (2005)



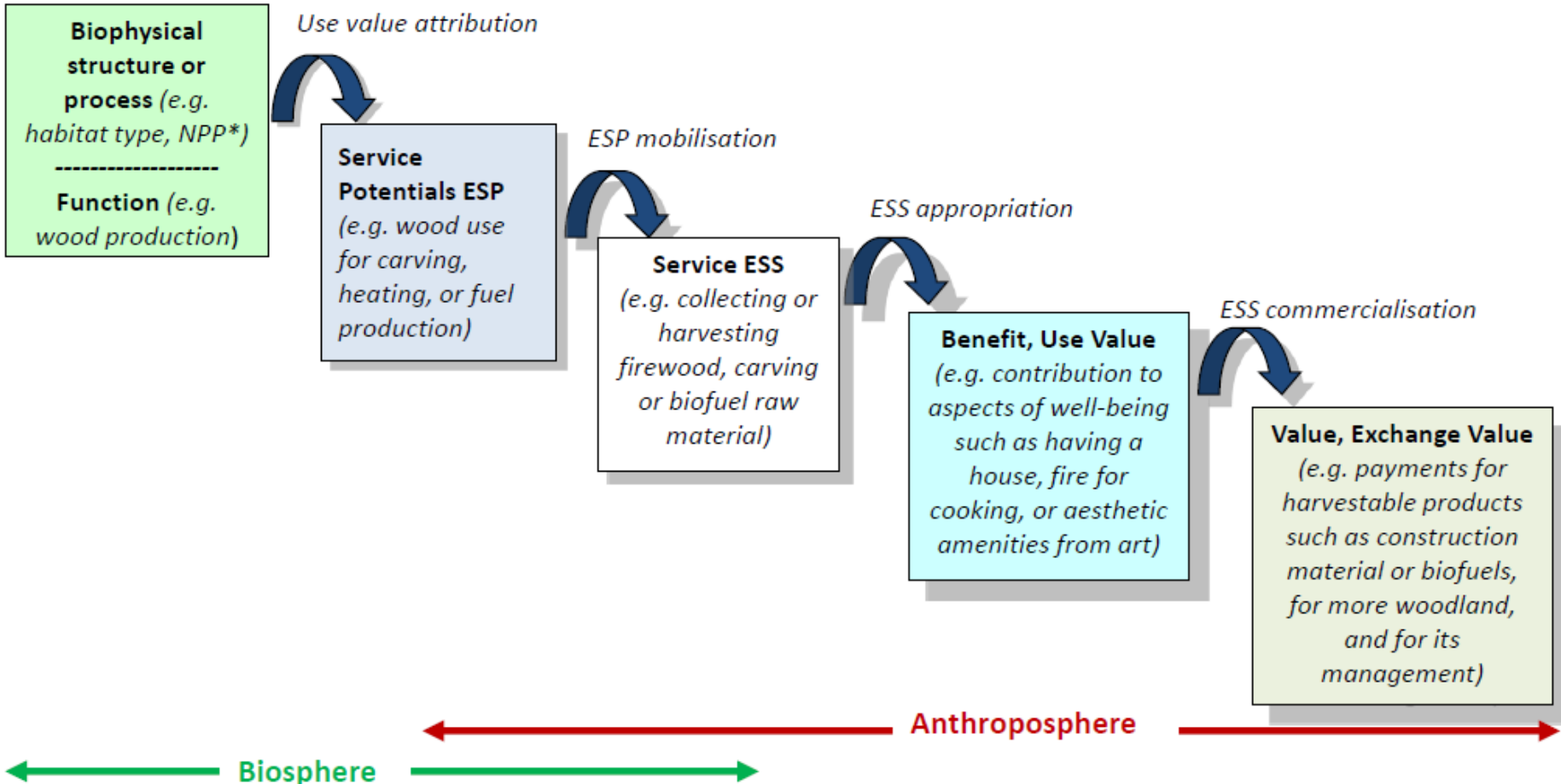
What else, if not capital stocks?

- In LEGATO, we follow a procedural description of the ecosystem service production, provisioning and enjoyment processes, inside and outside markets.
- The „Cascade Model“ is a metaphor and a scheme to organise a step-by-step analysis.

The ESS Cascade

(Potschin & Haynes-Young, modified)

The ecosystem

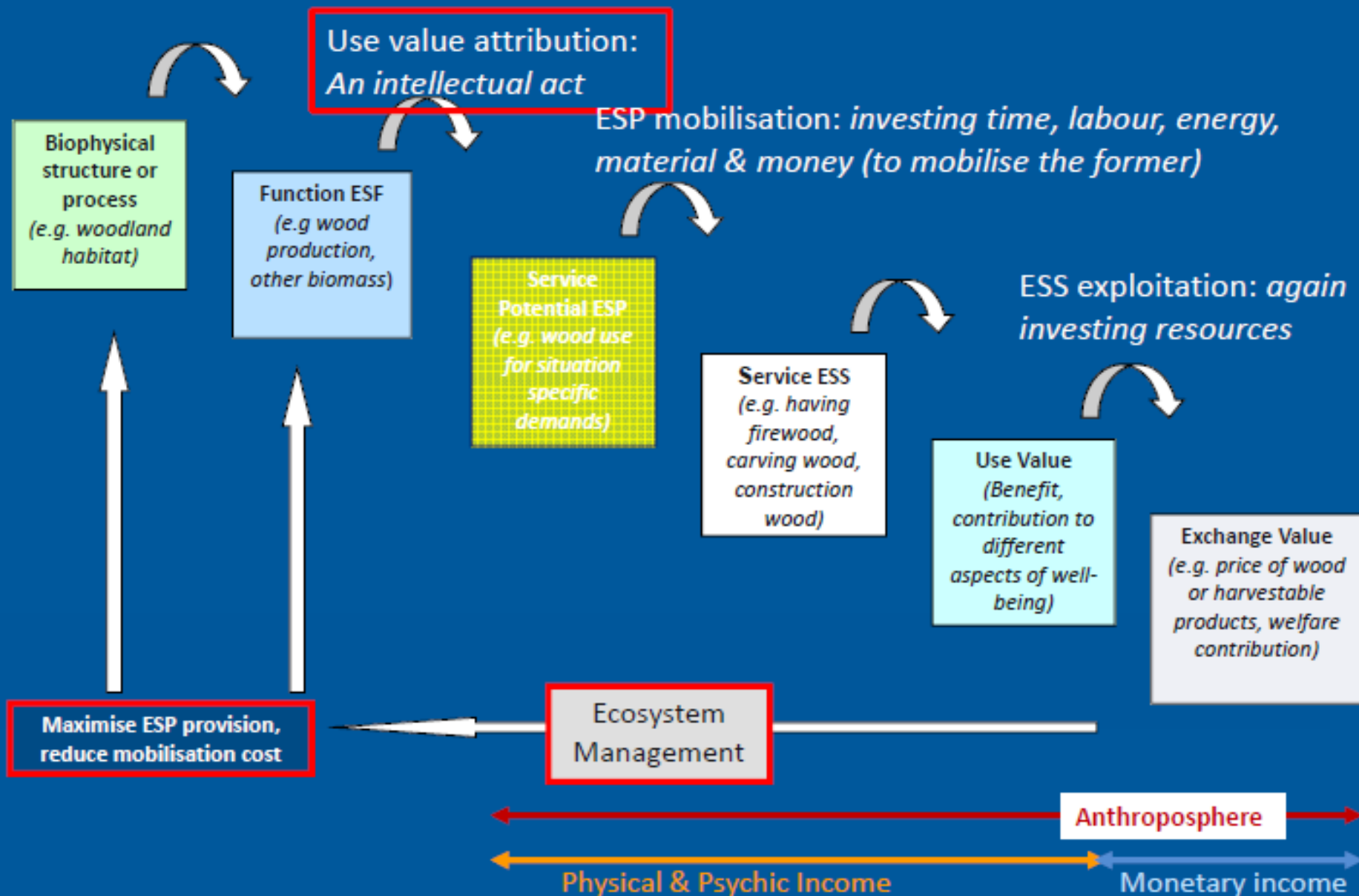


* NPP: Net Primary Production

The Use Value Attribution & ESS Potential Identification

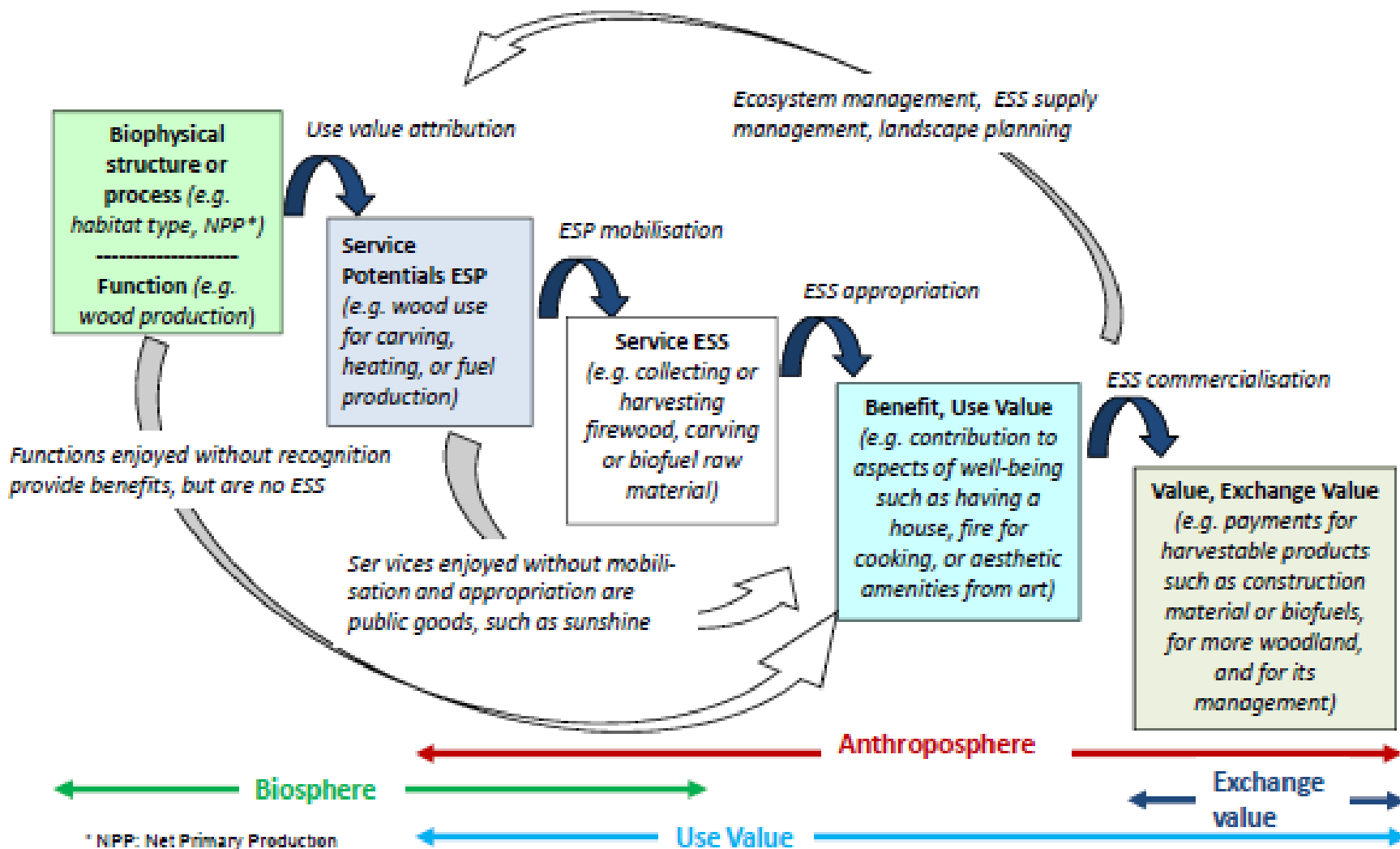
- Different groups, agents, stakeholders and cultures have different world views and thus recognise different services.
- Identifying use potentials is an intellectual act, not (yet) a physical intervention.
- Which potential is realised is a matter of power, and of societal/political conflict moderation processes.
- Environmental conflicts begin HERE.

No attribution – no service potential!



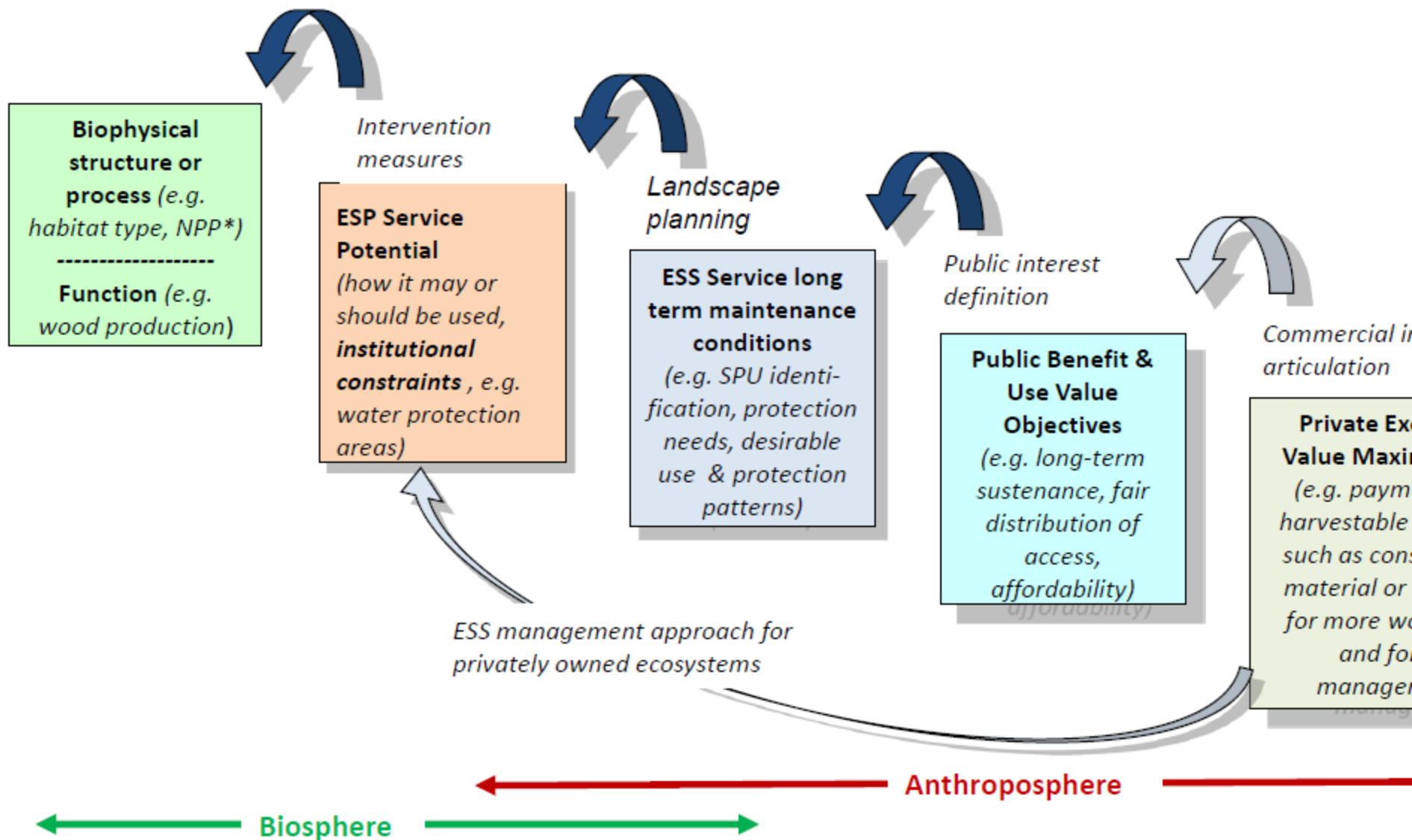
Mobilisation & appropriation make the ESB!

No mobilisation – no service.



No appropriation – no benefit.

Turning the ESS Cascade into Stairwa



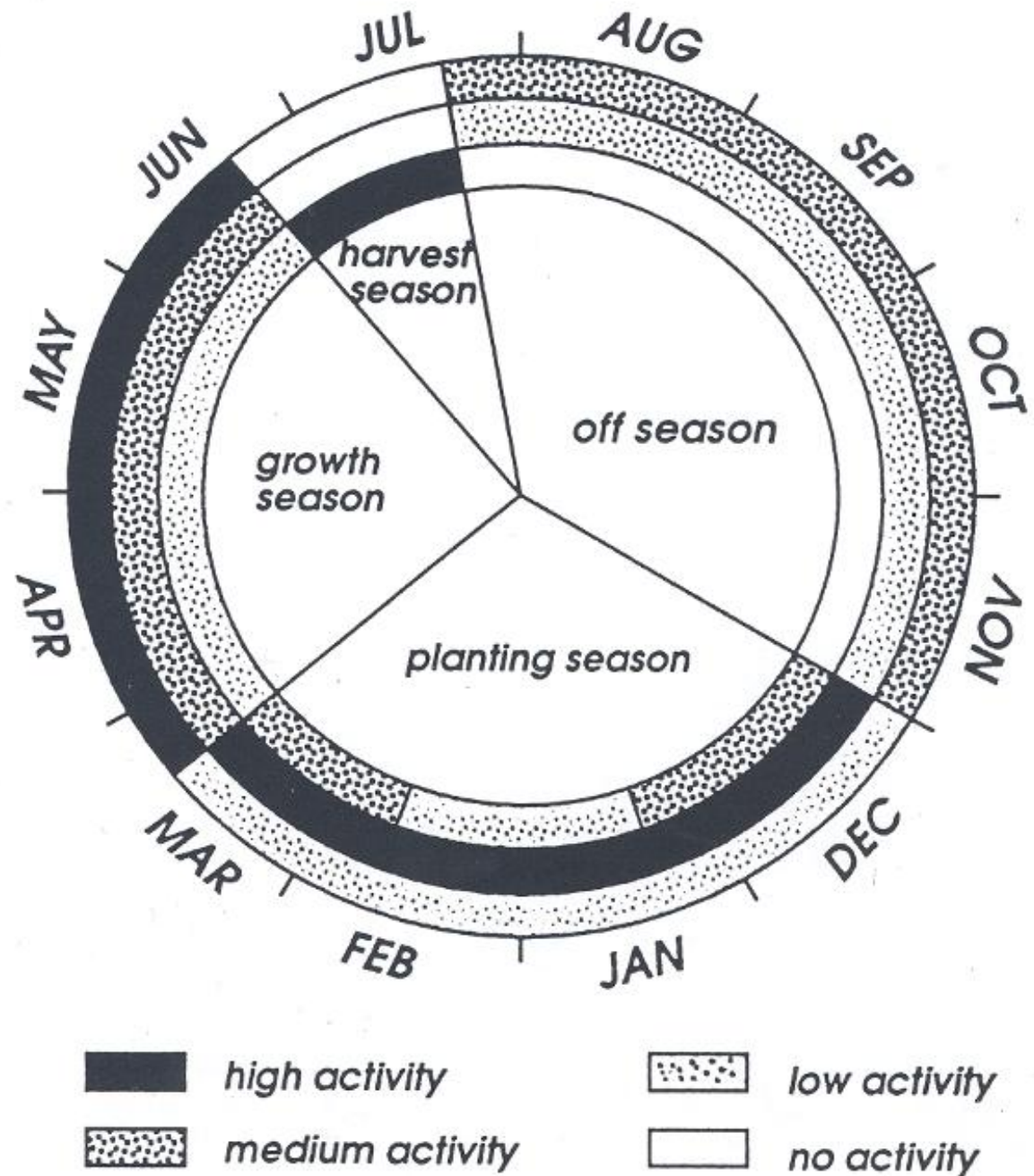
* NPP: Net Primary Production; SPU : Service Providing Units

Work in Progress!

- We have modified the existing „cascade“ to accomodate the service potentials and differentiation of use vs. exchange values.
- We have sought to align ESF and ESS, based on the MA but not on CICES as this does not fit a market economy (no money as benefit).
- The transitions are not sufficiently described yet (conflicts / power / policy), nor the ecosystem management „stairways“ approach.
- Cultural service categorisation is being tested; indicators are developed inductively.
- *Time use is a crucial factor to be analysed.*



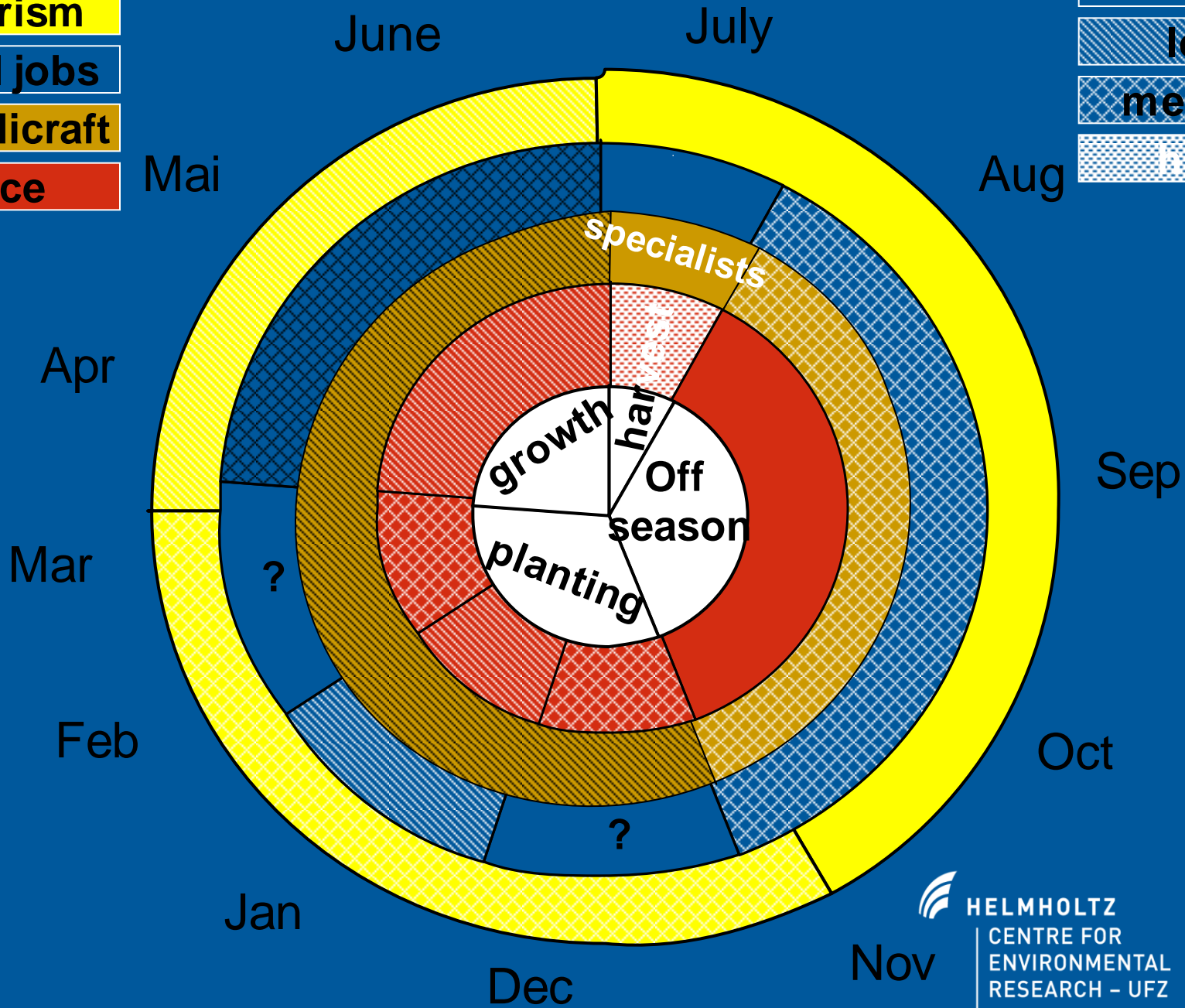
The Rice cycle in Banaue as it was



(historical data after Concklin, modified)

- tourism
- paid jobs
- handicraft
- rice

- none
- low
- medium
- high



Some conclusions

- *Ecosystem services are no free gifts of nature but the result of social, political and economic processes.*
- *They incorporate simultaneously economic, social and cultural values.*
- *Different descriptions may help understand different aspects of these processes.*
- *We test new methods of valuation.*

Possible future steps

- Integration with/links to other bodies of theory will be investigated, including
- A. Sen (capability approach),
- M. Max-Neef (satisfiers and needs),
- N. Georgescu-Roegen (funds and flows),
- A. Scheidel (social sustainability).

***"We have become far too clever
to survive without wisdom"
E. F. Schumacher***



***Thank you for
your attention***



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