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Biodiversity and land use in the Natural Capital Protocol

March 15th 2016

Samuel Vionnet

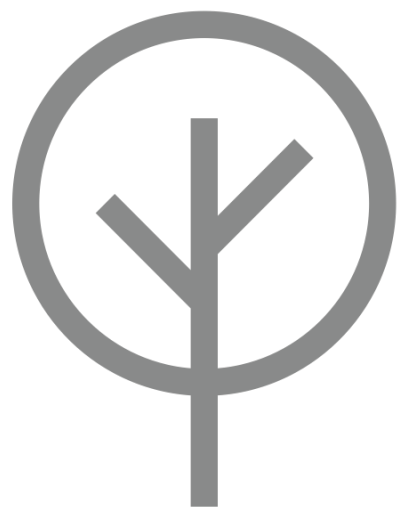
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A first insight

The Natural Capital Protocol does not address yet the issue of biodiversity.



What is the Natural Capital Protocol?



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DRAFT FOR CONSULTATION

NATURAL CAPITAL PROTOCOL

IMPORTANT MESSAGE
 The Natural Capital Protocol has been developed for business. It is aimed at managers from sustainability, procurement, health and safety and operations departments to help them to integrate natural capital into existing business processes. In order to engage other stakeholders, the Coalition and its members should develop other documents and approaches for wider audiences (for example, a short guide for senior leaders).
 All version(s) of the Protocol is an early draft, and is not complete. As we work towards a final version in July 2016, we welcome your involvement through a consultation to improve and strengthen the Protocol and to gain the consultation will run until 26 February 2016.
 To find out how to take part visit: <http://www.naturalcapitalcoalition.org/consultation>.
 We will be accepting comments through an online collaboration system called Collaborate. This will mean all comments are attributable and provide a record of responses. This will also help to sign the consultation with an ongoing business listing program.
 Guidance is provided to help you add, reply and vote on comments. In addition, we will include specific questions on which we would like your opinion.
 Following the consultation, we will provide feedback, sharing overall responses to the comments received and setting out the main challenges and areas for improvement.
 We look forward to your involvement in this important phase of the development of the first guide!

Stage	FRAME Why?		SCOPE What?		MEASURE AND VALUE How?			APPLY So what?		
Step	01 Get Started	02 Define the objective	03 Scope the assessment	04 Determine the impacts and/or dependencies	05 Prepare to measure and value	06 Measure or estimate impacts and/or dependencies	07 Measure or estimate changes in the state and trends of natural capital	08 Value impacts and/or dependencies	09 Interpret and use the results	10 Embed
Questions this will answer	How is natural capital relevant to your business?	What is the objective of your assessment?	What scope of analysis is appropriate for your objective?	Which impacts and/or dependencies are most relevant?	What do you need to consider before you start to measure and value?	How do you measure or estimate your impact drivers and/or dependencies?	How do you measure or estimate the changes in the state and trends of natural capital related to your business impacts and/or dependencies?	What is the value of your natural capital impacts and/or dependencies?	How can you interpret, validate, verify and apply the assessment and the results?	Should you continue the use of natural capital assessments in your business and if so, how?

PRINCIPLES: Relevance, Rigor, Replicability, Consistency

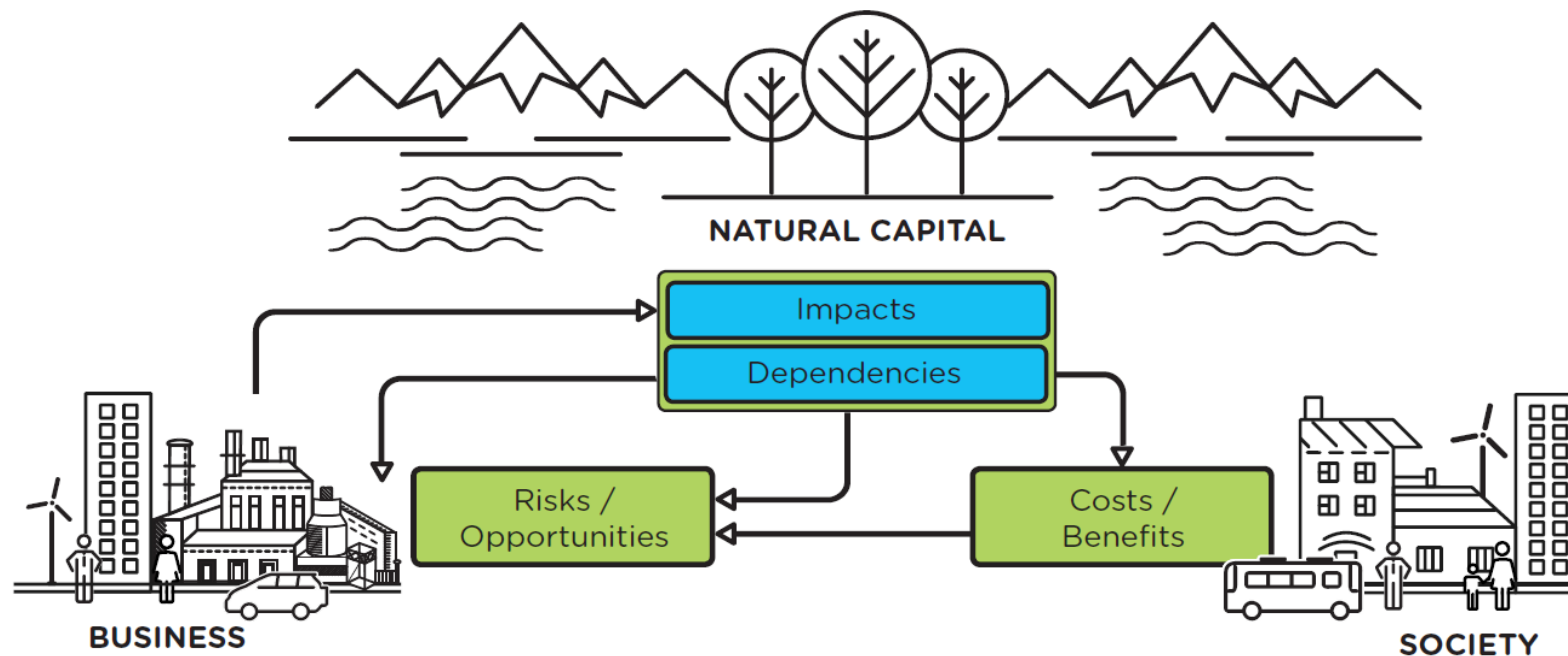
What is the Natural Capital Protocol (NCP)?

- The Protocol and Sector Guides (Food & Beverages and Apparels) aim to provide a standardized framework for business to measure and value their direct and indirect impacts and dependencies on natural capital.
- Released date: July 13th 2016
- Consultation period (December – February 2016) just ended
- Deep dive pilots from a range of companies (Nestlé, Hugo Boss, Natura, Coca-Cola, etc)



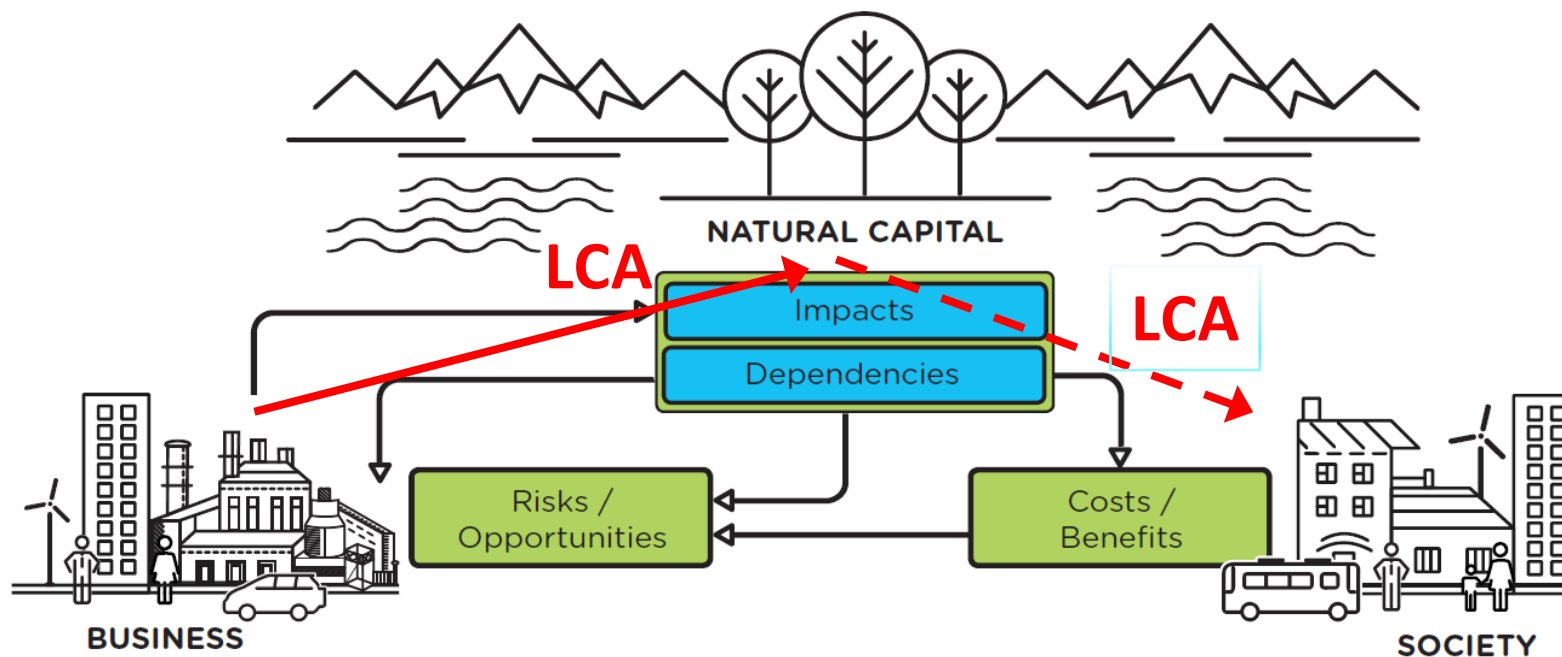
What is meant by Natural Capital?

We define Natural Capital as the stock of renewable and non-renewable natural resources (e.g., plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people.

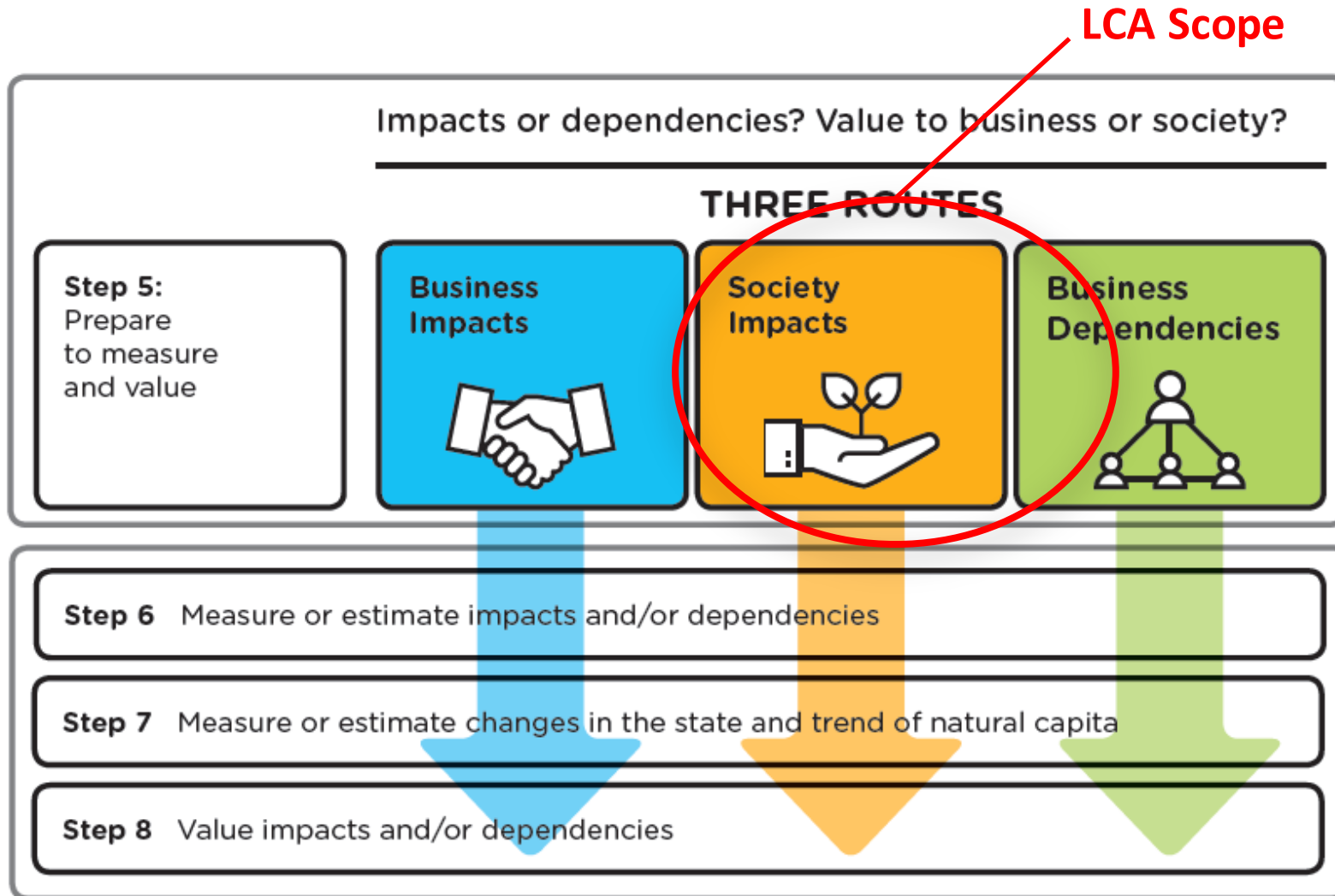


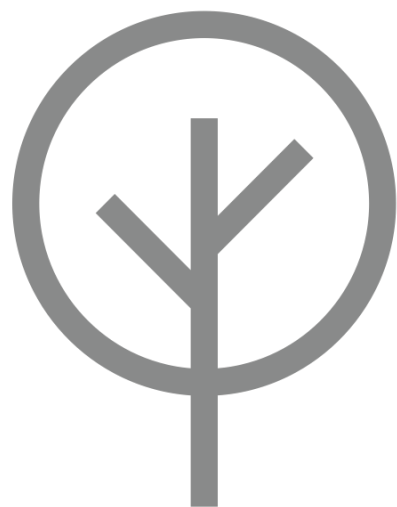
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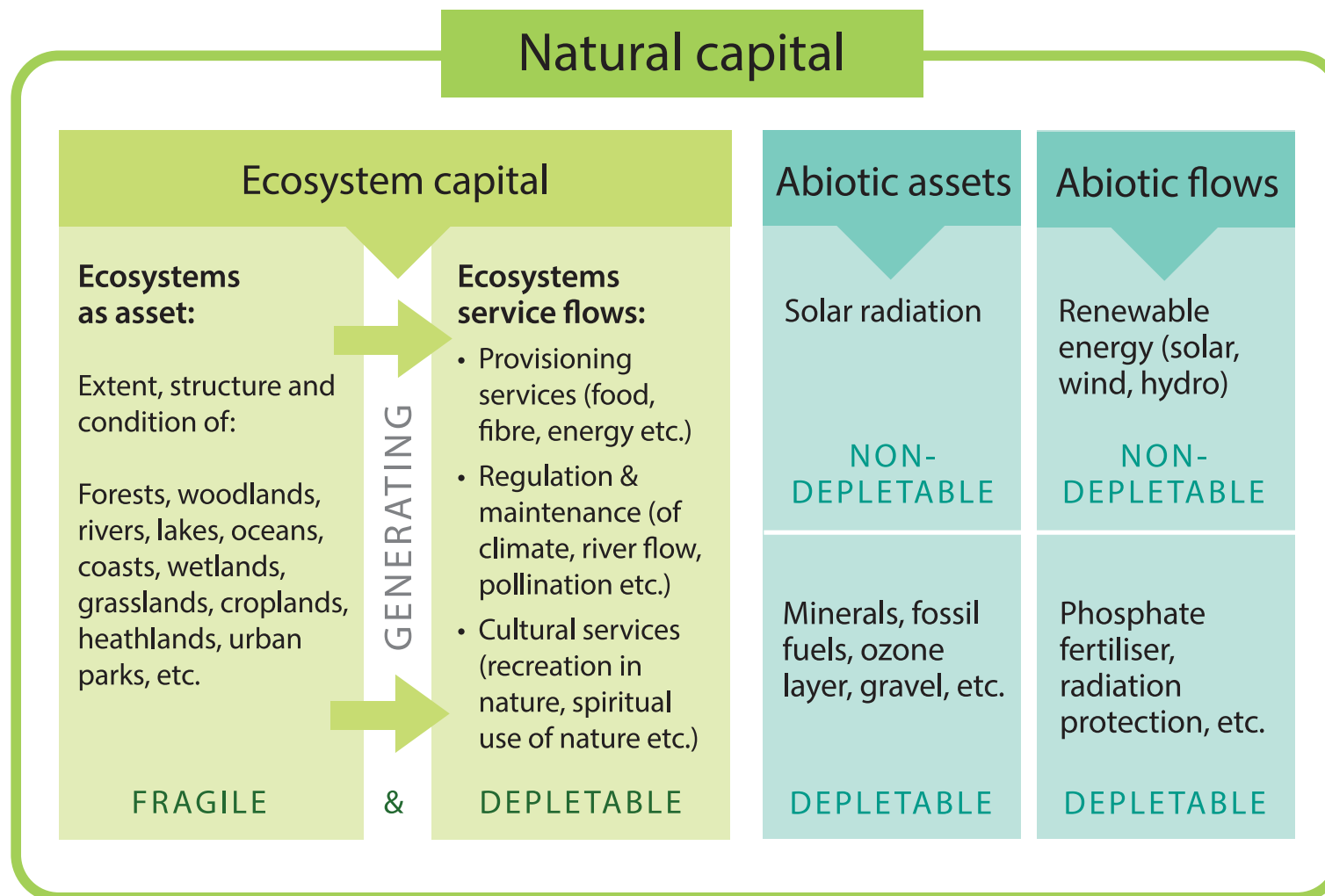
Different perspectives (routes) in the NCP





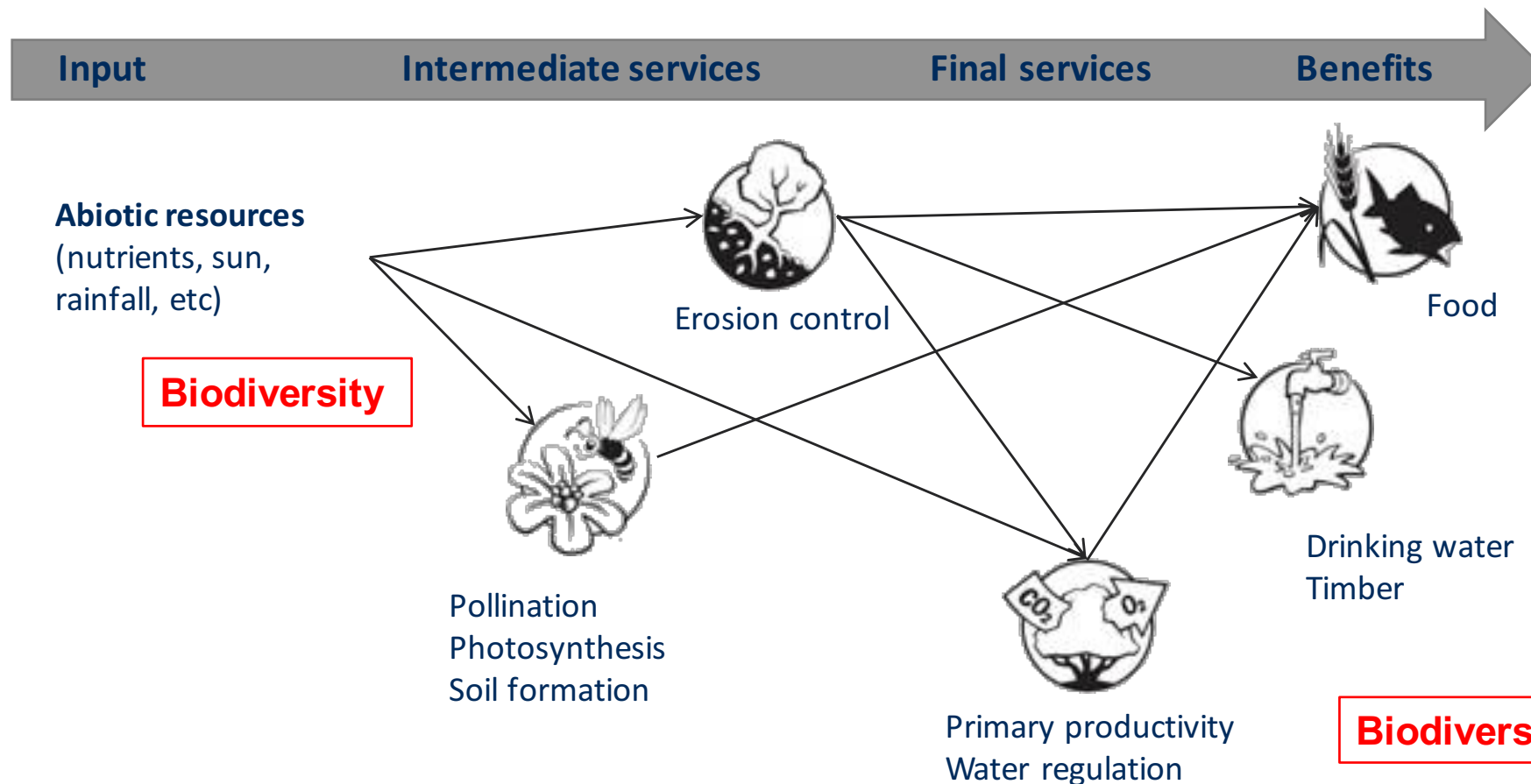
How biodiversity is addressed in Natural Capital Accounting?

The concept of ecosystem services



The concept of ecosystem services

The ES services framework accounts for the cause effect chain from the existence of an ecosystem to the benefit for the society*.





List of ecosystem services (MA, 2005)

Provisioning services



Raw materials



Medicinal
resources



Freshwater



Food

Regulating services



Pollination



Erosion prevention
and maintenance of
soil fertility



Local climate
and air quality



Carbon sequestration
and storage



Moderation of
extreme events



Waste water
treatment



Biological
control



List of ecosystem services (MA, 2005)

Cultural services



Recreation and
mental and
physical health



Tourism



Aesthetic
appreciation and
inspiration



Spiritual
experience and
sense of place

Habitat and supporting services



Maintenance of
genetic diversity



Habitats for species



Classification of ecosystem services (CICES 2013)

Section	Division	Group	
Provisioning	Nutrition	Biomass	
		Water	
	Materials	Biomass, Fibre	
		Water	
	Energy	Biomass-based energy sources	
		Mechanical energy	
Regulation & Maintenance	Mediation of waste, toxics and other nuisances	Mediation by biota	
		Mediation by ecosystems	
	Mediation of flows	Mass flows	
		Liquid flows	
		Gaseous / air flows	
	Maintenance of physical, chemical, biological conditions	Lifecycle maintenance, habitat and gene pool protection	
		Pest and disease control	
		Soil formation and composition	
		Water conditions	
		Atmospheric composition and climate regulation	
	Cultural	Physical and intellectual interactions with ecosystems and land-/seascapes [environmental settings]	Physical and experiential interactions
			Intellectual and representational interactions
		Spiritual, symbolic and other interactions with ecosystems and land-/seascapes [environmental settings]	Spiritual and/or emblematic
			Other cultural outputs

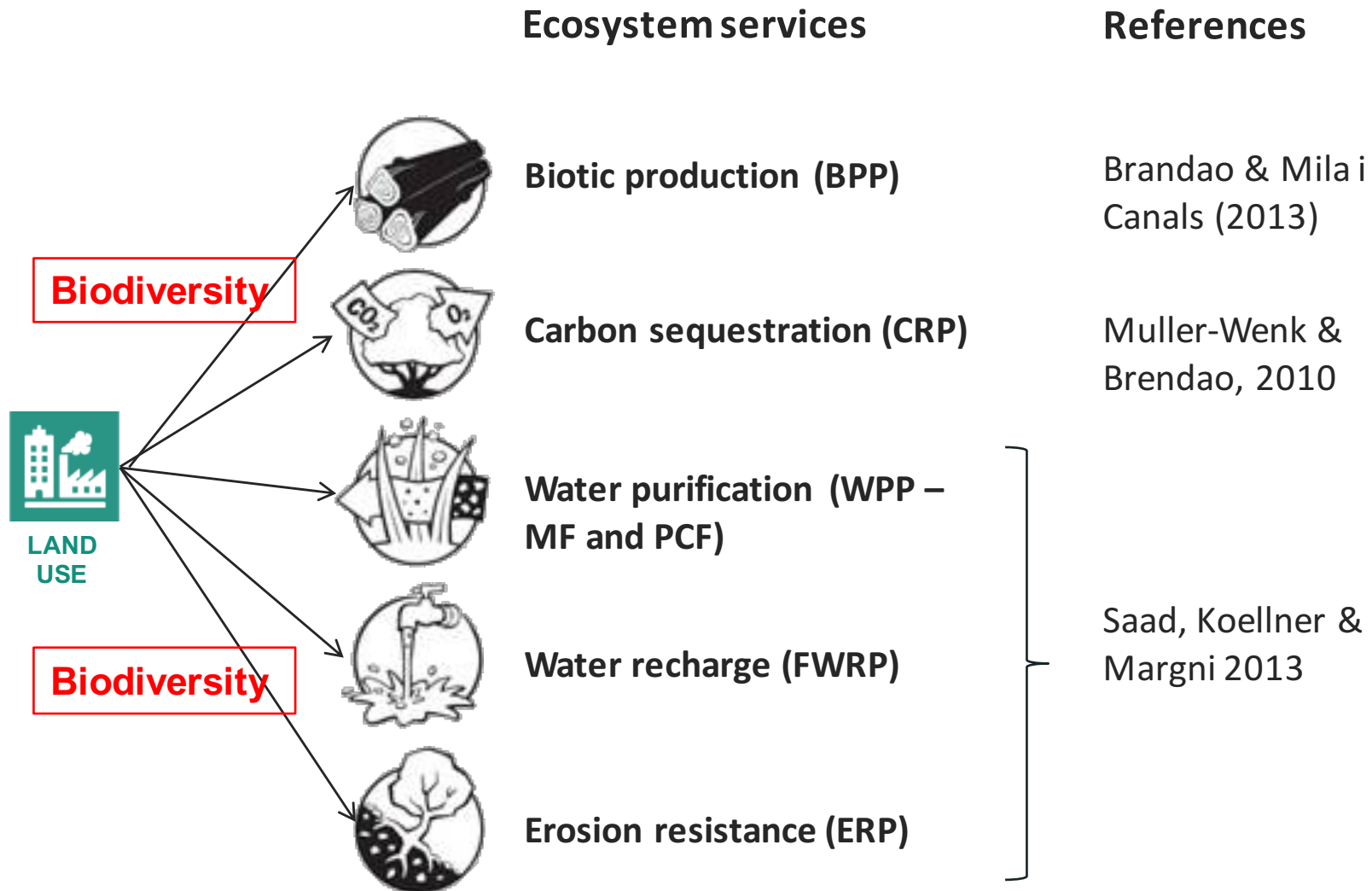
Classification of economic valuation techniques*

		Techniques				
Classes		Market prices	Cost based	Revealed preferences	Stated preferences	Benefits transfer
Types	}	Market price	Replacement cost	Travel cost	Contingent approach	Results transfer
		Production function	Avoided damage cost	Hedonic pricing	Multi-attribut approach	Function transfer

* Dupras et Réveret (2015) Nature et économie – Un regard sur les écosystèmes du Québec. Presses de l'université du Québec

Land use valuation framework







(modified from Cao et al. 2015)





Valuation techniques for Cao et al. 2015

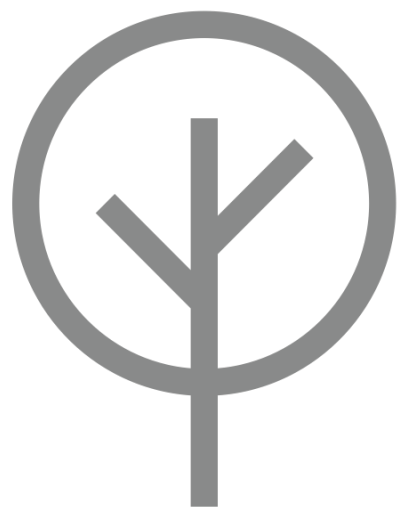
A mix of avoided damage costs, replacement costs and production functions valuation techniques.

	Midpoint	Physical unit	Economic approach	Data source	Interpretation
	Erosion resistance potential (ERP)	t/(ha.yr)	Cost of erosion mitigation measures	WOCAT	Natural resistance loss
	Mechan. Water Purification Pot. (MWPP)	cm/day	1 st treatment	WaTER	Non-filtered water
	Phys-Chem Water Purification Pot. (PCWP)	cmol/kg _{soil}	2 ^d & 3 rd treatment	WaTER	Non-filtered water
	Fresh Water Renewal Potential (FWRP)	mm/year	Water to supply	UNESCO	Water non provided
	Carbon Sequestration Potential (CSP)	tCO ₂ /(ha.yr)	Social cost of carbon	Diverse	CO ₂ emitted
	Biotic Production Potential (BPP)	tC/(ha.yr)	Productivity loss	FAO	Production loss



Overview of insights

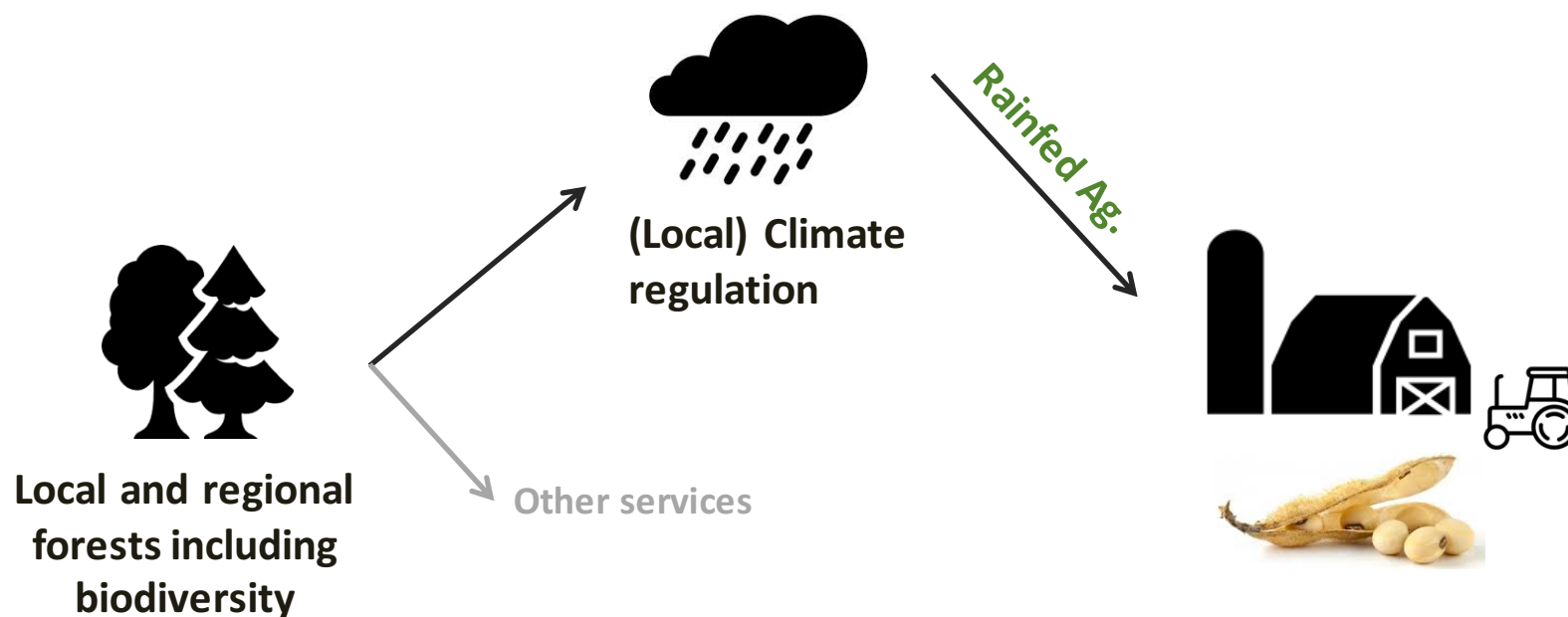
- Biodiversity is not addressed directly in the NCP (apart from some exceptions such as specific provisioning services)
- The NCP relies on existing methods and approaches to measure and value biodiversity, including LCA methods (e.g. Cao et al. 2015)
- The “utility” perspective followed by the NCP does not fully overlap with LCA overall approach and the conservation of nature/biodiversity. Said differently, optimizing ecosystem services might reduce biodiversity in some cases.
- The NCP does not aim to value nature, it values the flows of service(s).



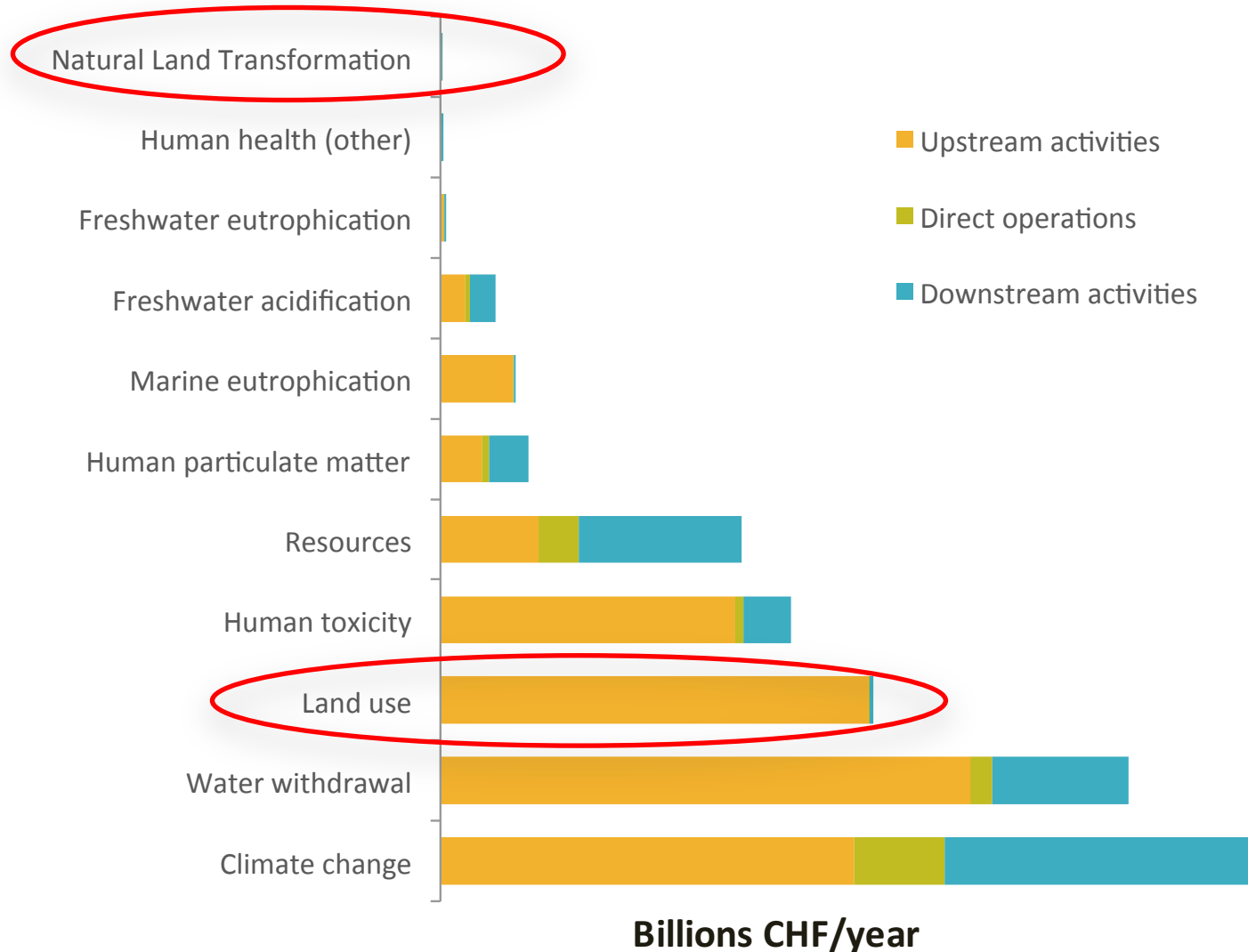
Examples of applications

Biodiversity dependencies – The case of soybean in Santa Cruz, Bolivia

The value of nature conservation and biodiversity, in this case local and regional forests, are supporting soybean farmers in Santa Cruz region for more than 30 millions USD/year.

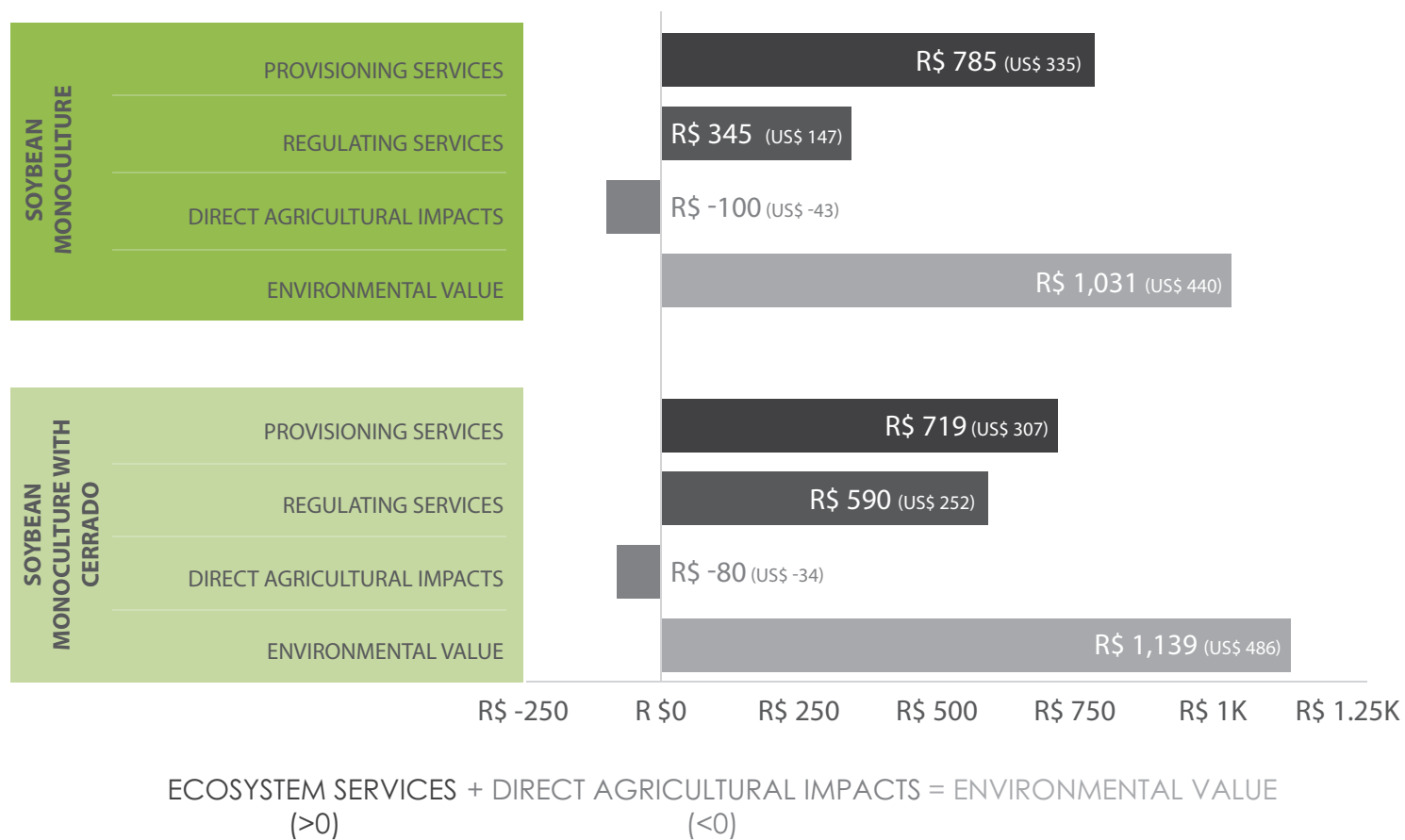


Nestle Corporate Natural Capital Accounting

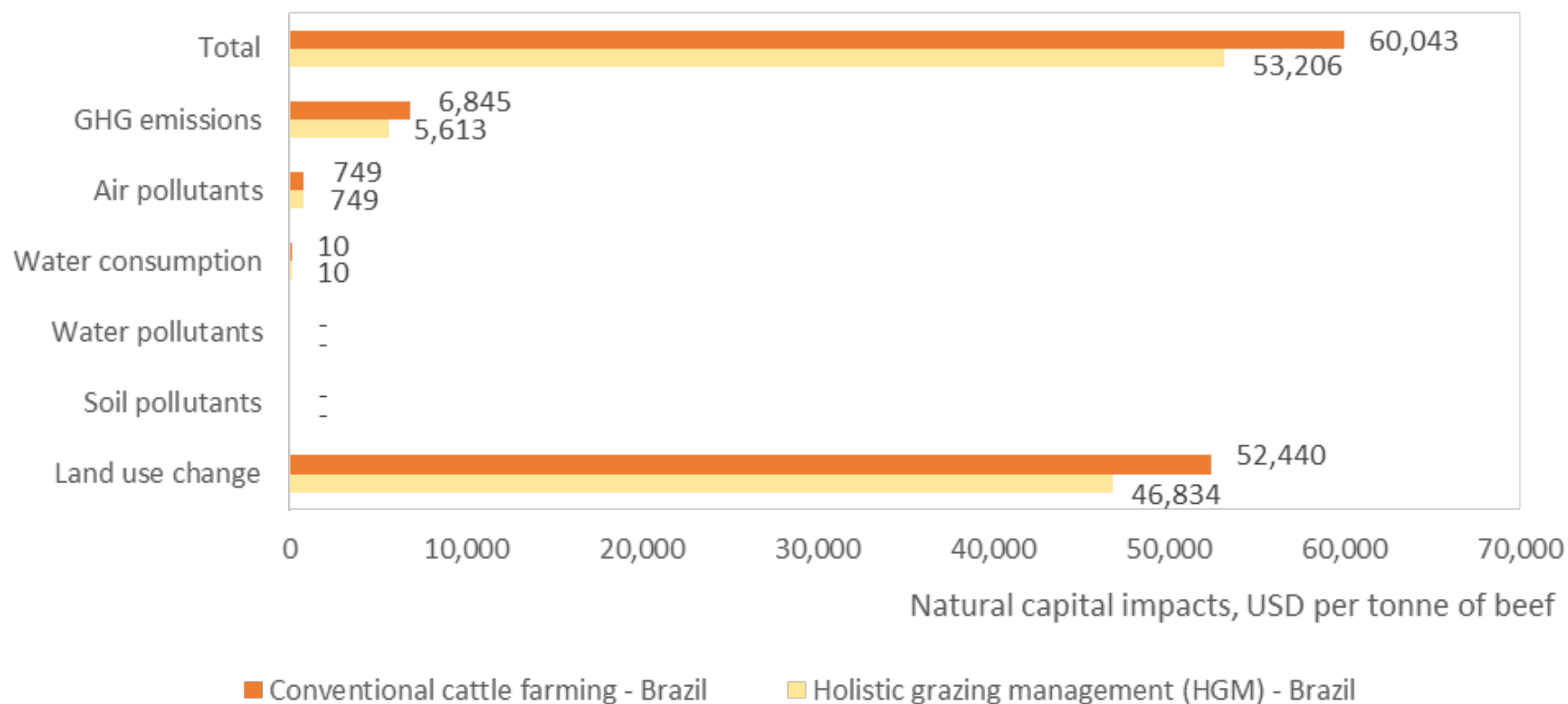


Mansonto mono-culture vs. Cerrado (agro-forestry)

Fig. 2: The total environmental value calculated in the Monsanto case study



Identification of best practices (cattle farming in Brazil)



Thank you!

Questions?



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