

# Assessing Ecosystem Services in Canadian Biosphere Regions

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United Nations  
Educational, Scientific and  
Cultural Organization



Canadian  
Commission  
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# Assessing Ecosystem Services in UNESCO Biosphere Reserves



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Man and  
the Biosphere  
Programme



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Vasseur, L. and R. Siron. 2019

# The framework



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Man and  
the Biosphere  
Programme

A New Roadmap for the  
Man and the Biosphere (MAB) Programme  
and its World Network of Biosphere Reserves

**MAB Strategy (2015-2025)**

**Lima Action Plan (2016-2025)**

**Lima Declaration**



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# Assessing ecosystem services

- Provisioning, Supporting and Regulating, and Cultural



Explain first  
what they are



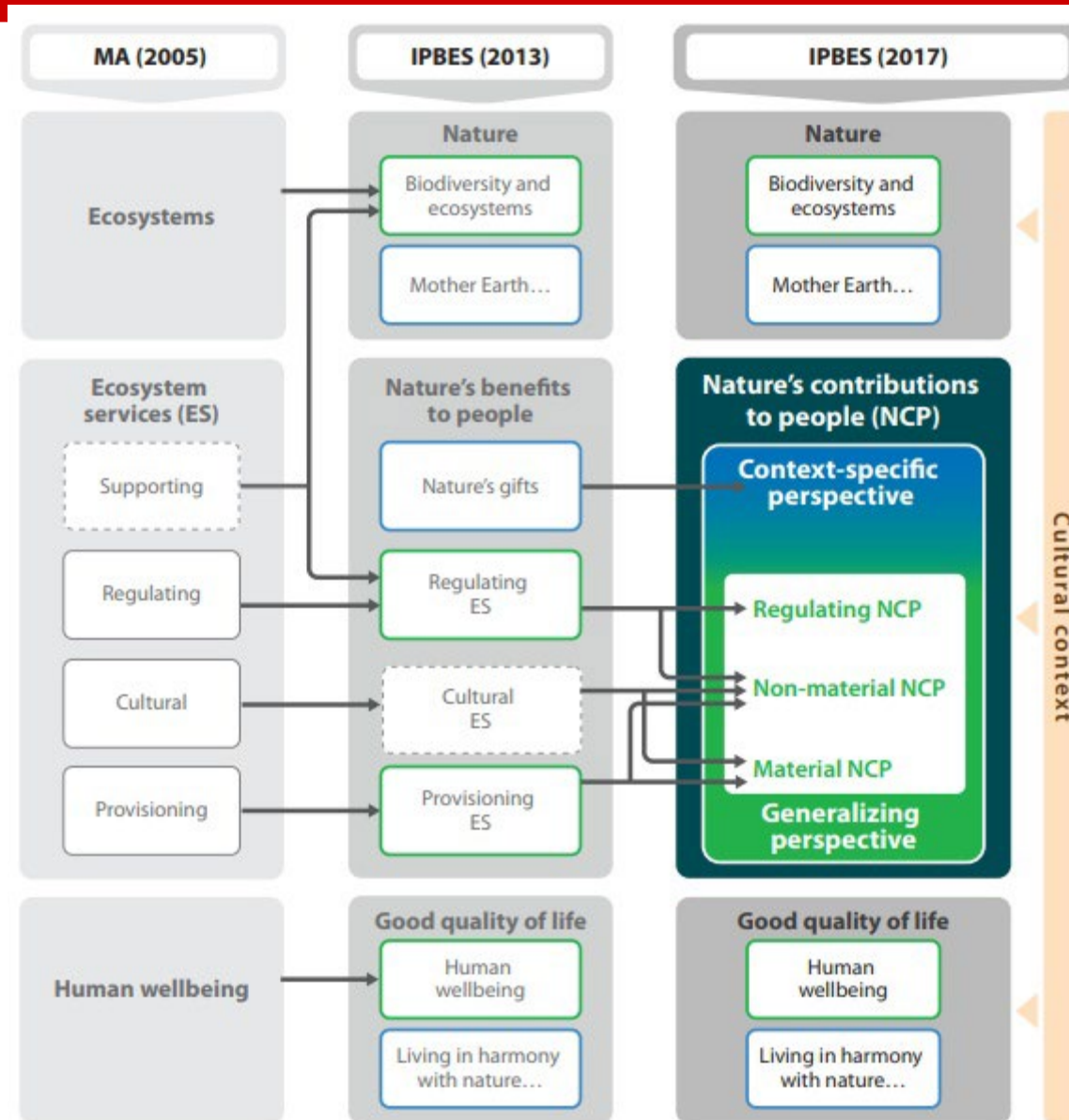


# Periodic reviews

- Or the challenge of assessing them...
- Valuing nature's contributions to people (Diaz et al. 2018)
- ...a tool to connect people and nature

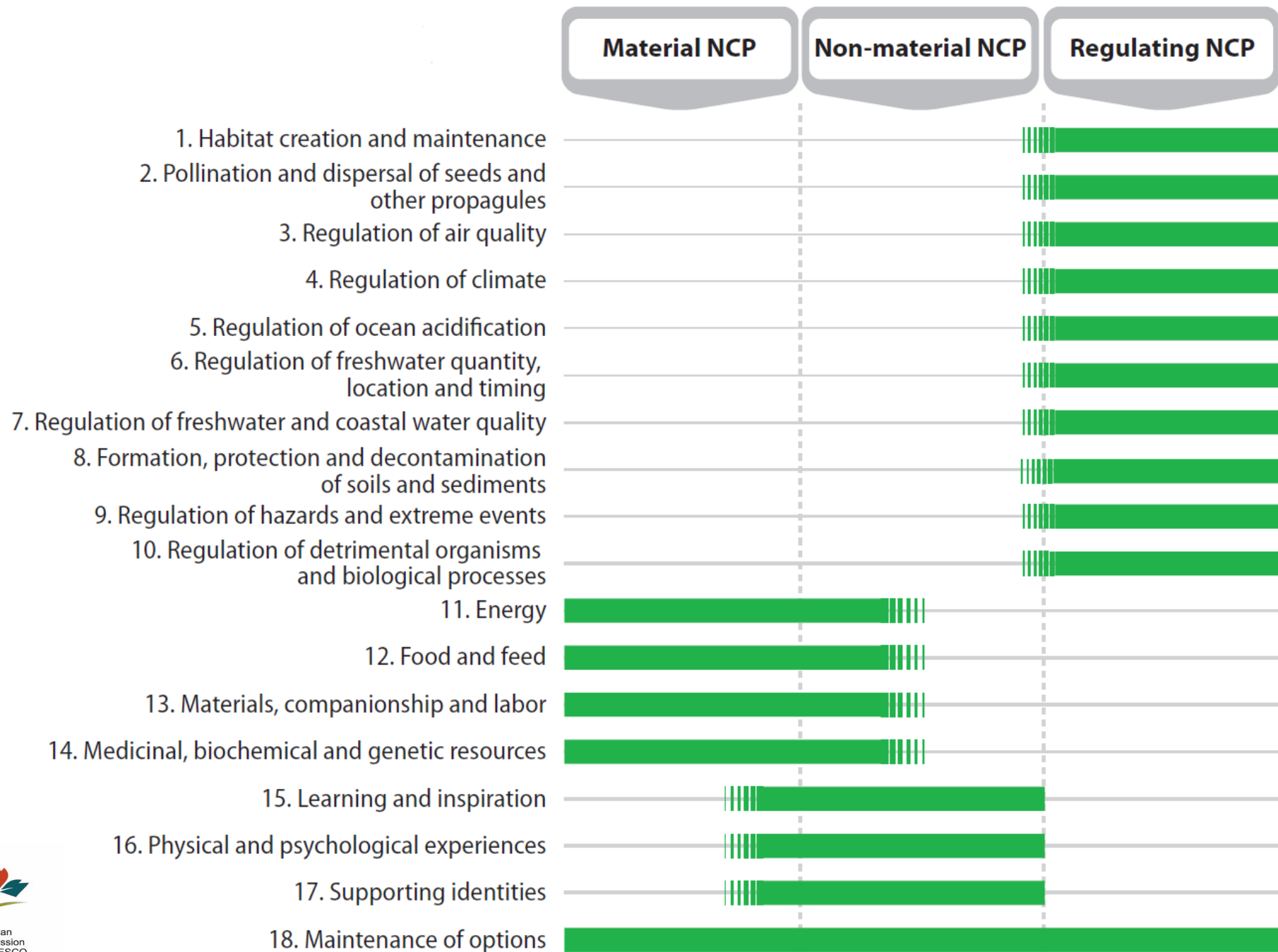


# Nature's contributions to people



(Diaz et al. 2018)

# NCPs and the Sustainable Development Goals

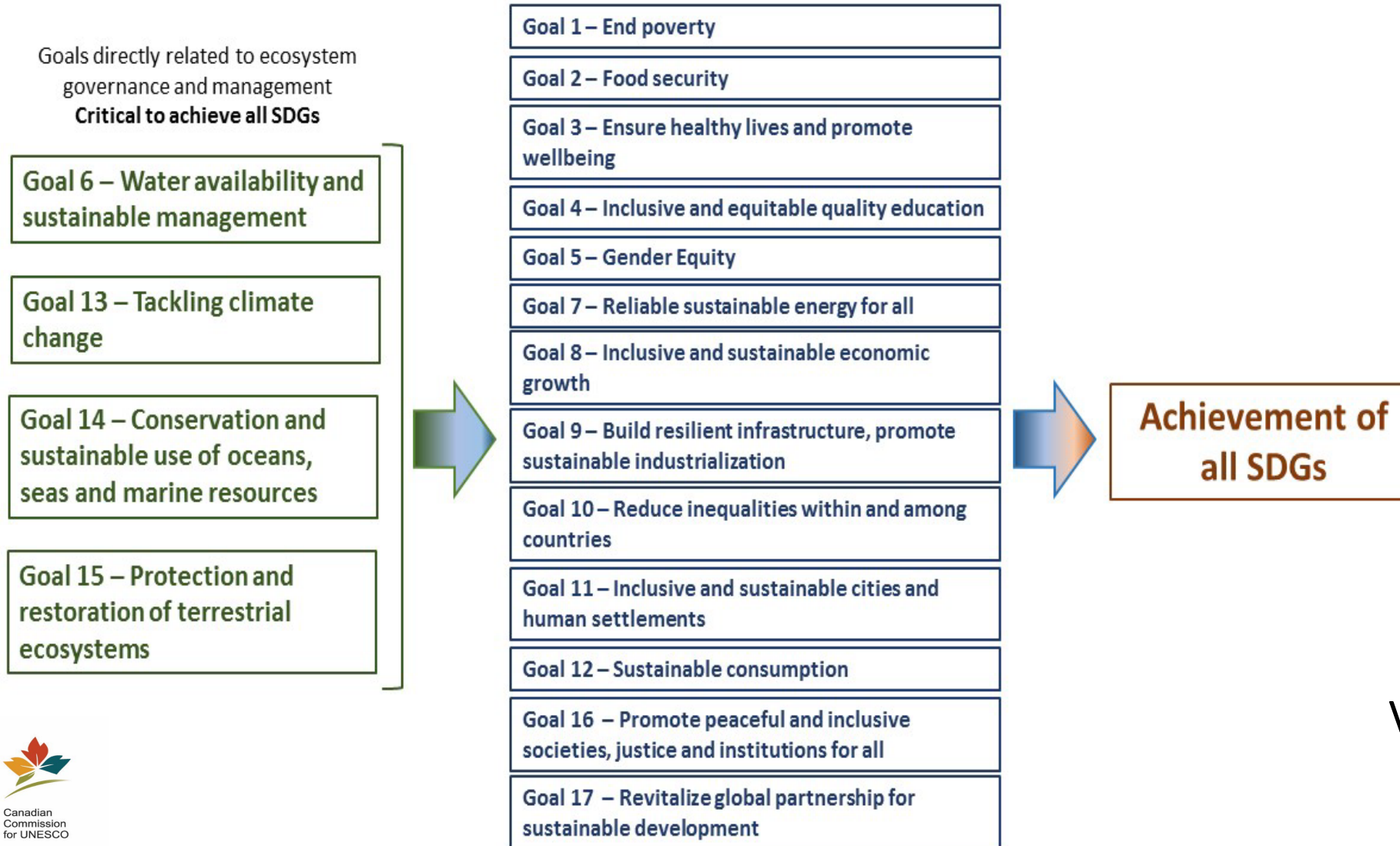


# A tool for decision making

- To improve the connection between humans and nature:
  - To raise awareness of the importance of ecosystems, promote the protection of the natural environment for well-being of communities
  - To offer a positive alternative to alarmist speeches about environmental degradation
  - To propose a positive vision of the territory and the future.



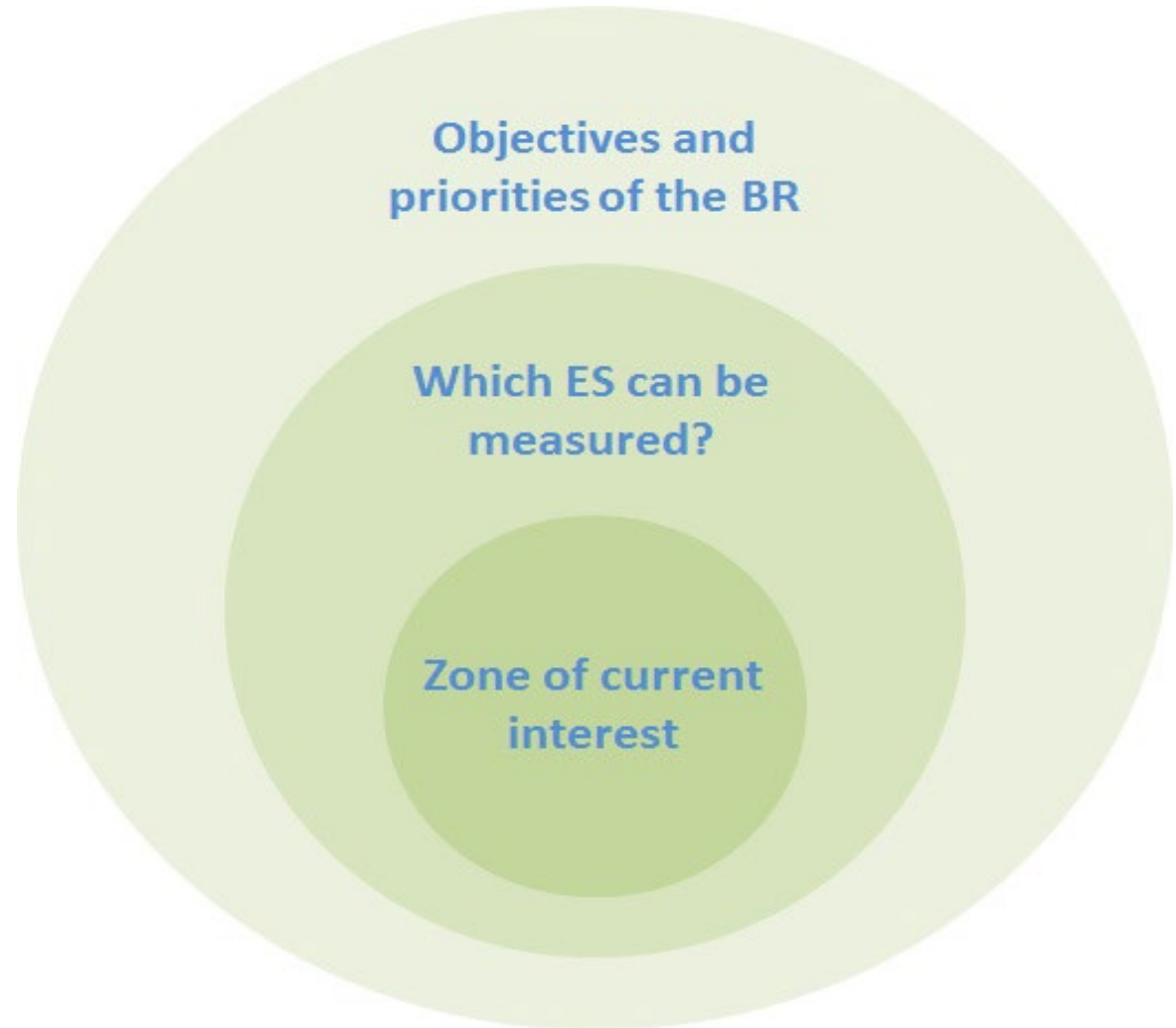
# And reaching SDGs



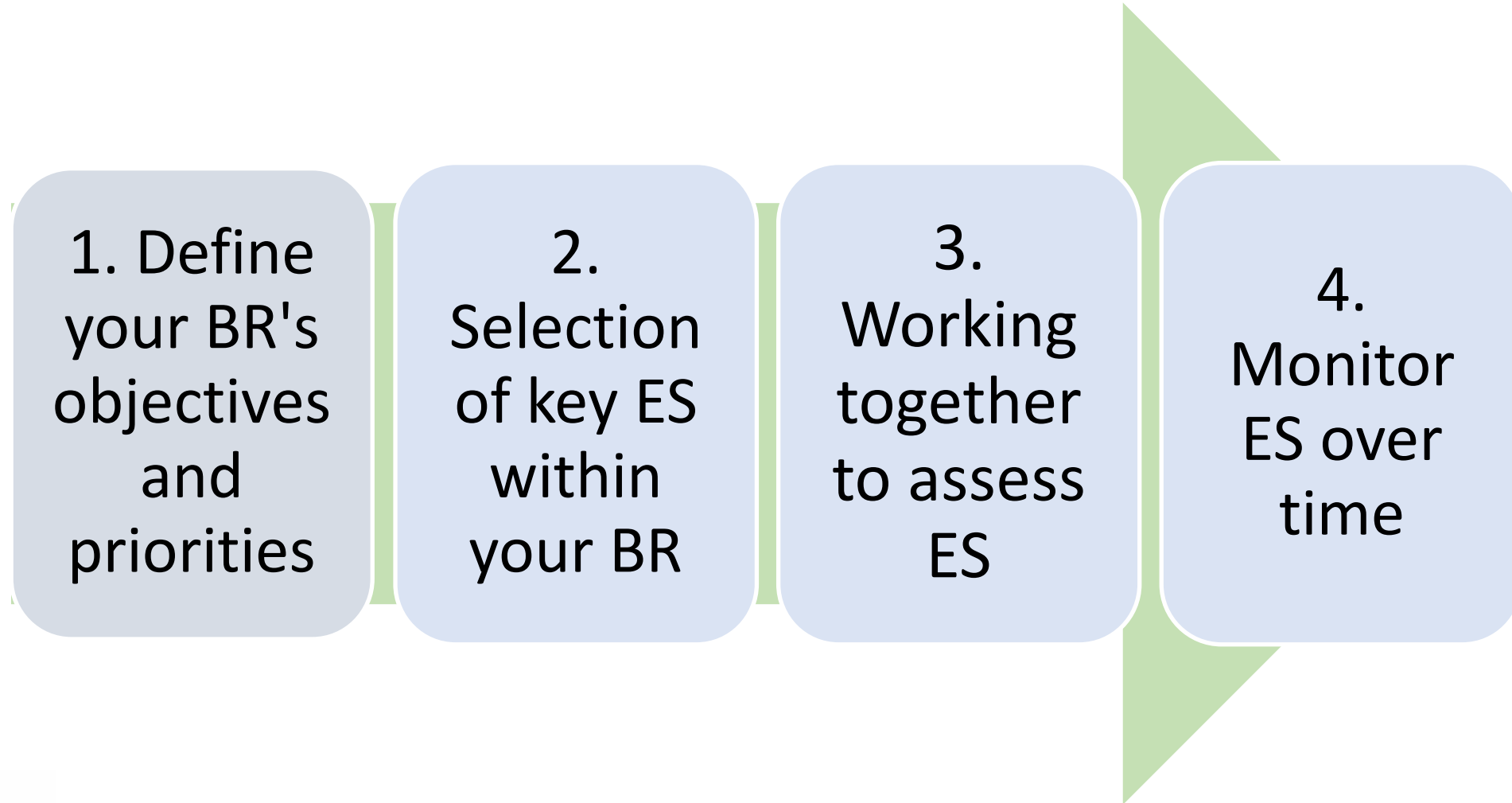
Vasseur et al. 2017

# Starting point

- ES assessed through the lens of the priorities and objectives of the BR, with a realistic view of which ES can be measured, and in which zone



# A proposed step-by-step approach



# 1. Define your BR's objectives and priorities

- Specific to each BR with some placing more importance on conservation measures and others on sustainable development.
- E.g.: priority is habitat creation and maintenance (SDG15), and this is done through various activities such as land acquisition for conservation and promoting nature literacy (SDG4) by engaging with citizen scientists.



## 2. Select key ES within your BR

- Regulating NCP: Habitat creation and maintenance
- Regulating NCP: Regulation of climate
- Material NCP: Medicinal, biochemical and genetic resources
- Non-material NCP: Learning and inspiration



### 3. Work together to assess ES

- Keep the process simple
- First step: acquire data and information from the different partners about ES/NCP and make a summary of what the initial situation is
- Invite as many people as possible



# Assessing together

- Convening people together to assess NCP can be done in formal and informal settings
- Visualization using maps or drawings
- Measuring the status of NCP can be quantitative or as simple as using emoticons or a number scale




OR

1 – 2 – 3 – 4 – 5

NCP categories and names and contributions to SDGs	Main ecosystems producing NCP	Ecosystem Services examples	Examples of related indicators	Biosphere Reserve case studies	
				Clayoquot Sound	Mont-St-Hilaire
Regulating NCP					
<div>1. Habitat creation and maintenance</div> <div></div>	All types of ecosystems	Essential habitat for species' life cycle (e.g., nursery, spawning ground areas)	Identification of habitat types  Habitat quality assessment	Suitable habitat for salmon	Ha of forests Ha of protected areas  Habitat quality (monitoring of species by citizen science) of forest patches in the agricultural milieu.



<p><b>2.</b> Pollination and seed dispersal and propagules</p> 	<p>Forests, wetlands, agroecosy stems</p>	<p>Essential process to plants reproducti on and agriculture (crops)</p>	<p>Number and diversity of pollinators</p> <p>Plant populatio ns pollinated</p>	<p>Number and diversity of pollinators in apple orchards</p> <p>Flower visits by pollinators</p> <p>Seed set in plants that require pollination</p>
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## 4. Monitor ES over time

- Assess ES on a regular basis, providing data to inform local decision making and to describe in the BR's periodic review
- Important to keep the process be transparent, inclusive, iterative and collaborative



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# Ideas to retain

- Simple guide
- Greater collaboration with the various partners
- May lead to new actions
- Help manage sustainably some of the activities
- Importance of using local resources and people



# Huge thanks

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- Contributions: Eleanor Haine Bennett (Canadian Commission for UNESCO), Elena Bennett (McGill University), Shailyn Drukis (Youth Advisory Group), Andreas Link (Ontario Ministry of Natural Resources & Forestry), Laura Loucks (Clayoquot Biosphere Trust), Lenore Swystun (Prairie Wild Consulting), and Geneviève Poirier-Ghys (Mont Saint-Hilaire Biosphere Region)
- <https://en.ccunesco.ca/-/media/Files/Unesco/Resources/2019/03/AssessingEcosystem.pdf>