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Multi-scale Scenarios for Nature Futures

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What is IPBES?

- Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, established in 2012
- Current membership includes 128 governments
- Overall objective is to provide policy relevant knowledge on biodiversity and ecosystem services to inform decision making
- Over a thousand scientists, nominated by governments and organisations, currently contribute to the work of IPBES

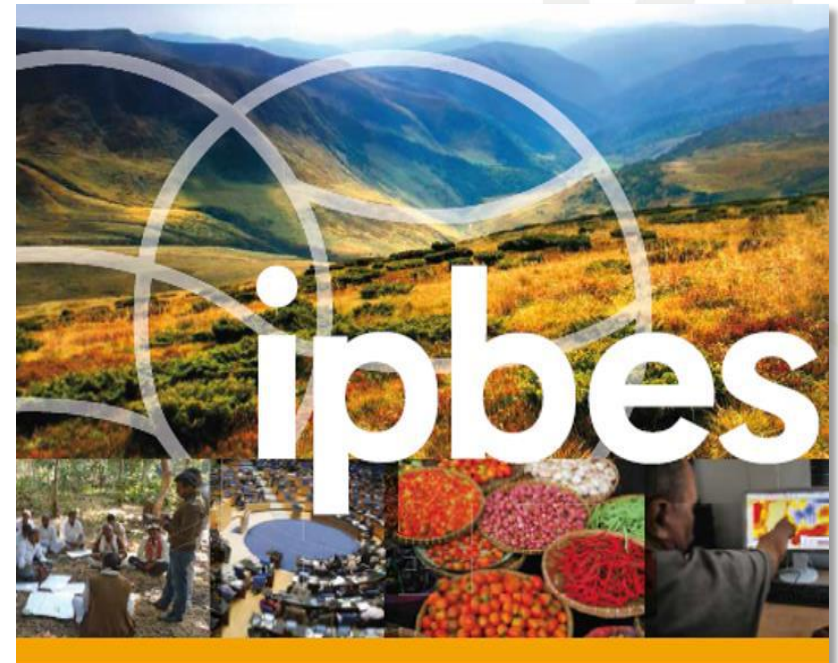


Methodological assessment of scenarios & models of biodiversity & ecosystem services

- One of the first assessments undertaken in the IPBES 2014-2018 work programme
- Rationale for this assessment: *“One of the key objectives in using scenarios and models [of biodiversity and ecosystem services] is to move away from the current reactive mode of decision-making ... to a proactive mode in which society anticipates change and thereby minimizes adverse impacts, and capitalizes on important opportunities”*
(IPBES/2/17, annex VI)
- Report accepted by IPBES Plenary in Feb 2016

Structure of the Summary for Policymakers

- Key findings (15 key findings organized under 3 high-level messages)
- Guidance for science and policy (6 guidance points)
- Guidance for the Platform [IPBES] and its task forces and expert groups (6 guidance points)

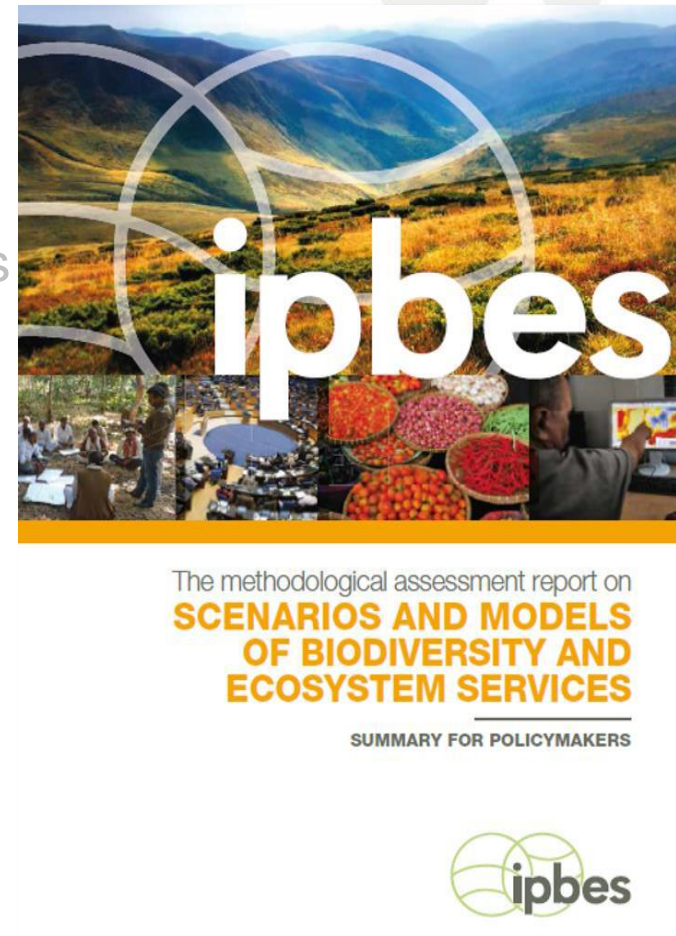


The methodological assessment report on
**SCENARIOS AND MODELS
OF BIODIVERSITY AND
ECOSYSTEM SERVICES**

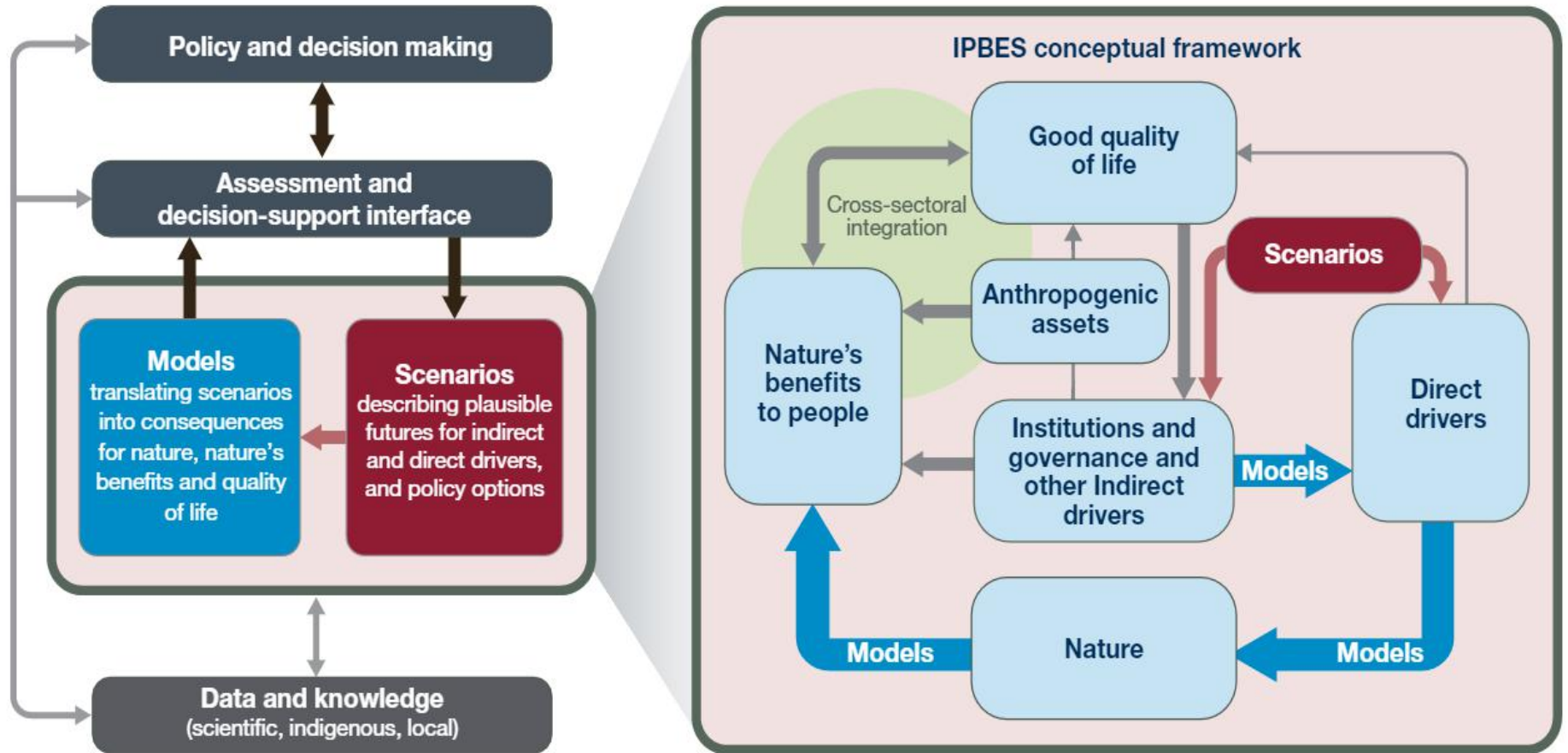
SUMMARY FOR POLICYMAKERS

Summary for Policymakers: high-level messages

- **High-level message 1:** Scenarios and models can contribute significantly to policy support, even though several barriers have impeded their widespread use to date
- **High-level message 2:** Many relevant methods and tools are available, but they should be matched carefully with the needs of any given assessment or decision support activity, and applied with care, taking into account uncertainties and unpredictability associated with model-based projections
- **High-level message 3:** Appropriate planning, investment and capacity-building, among other efforts, could overcome significant remaining challenges in developing and applying scenarios and models

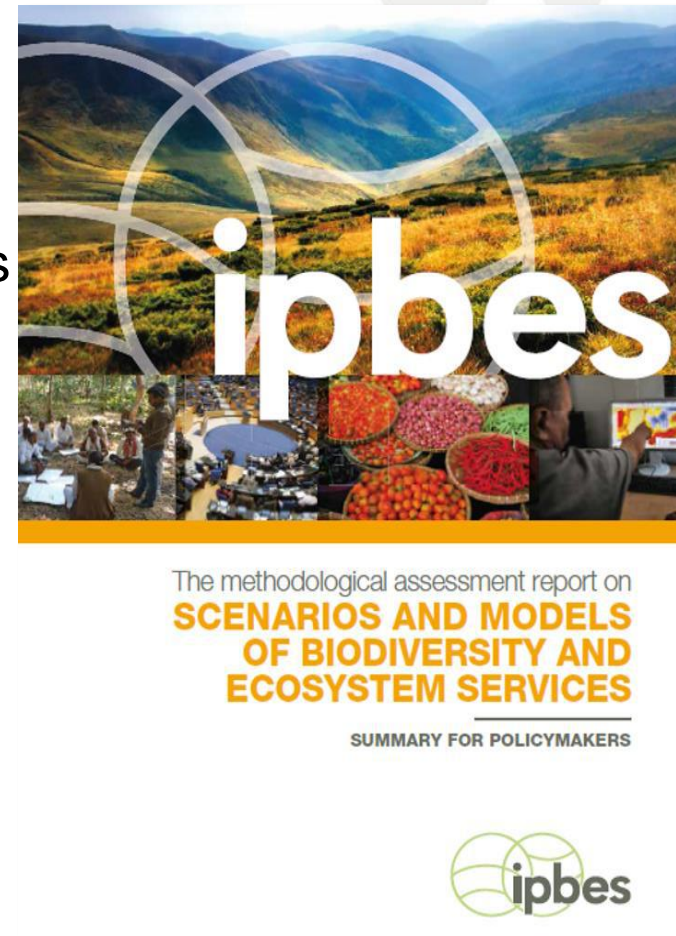


Contribution of scenarios & models to policy and decision making



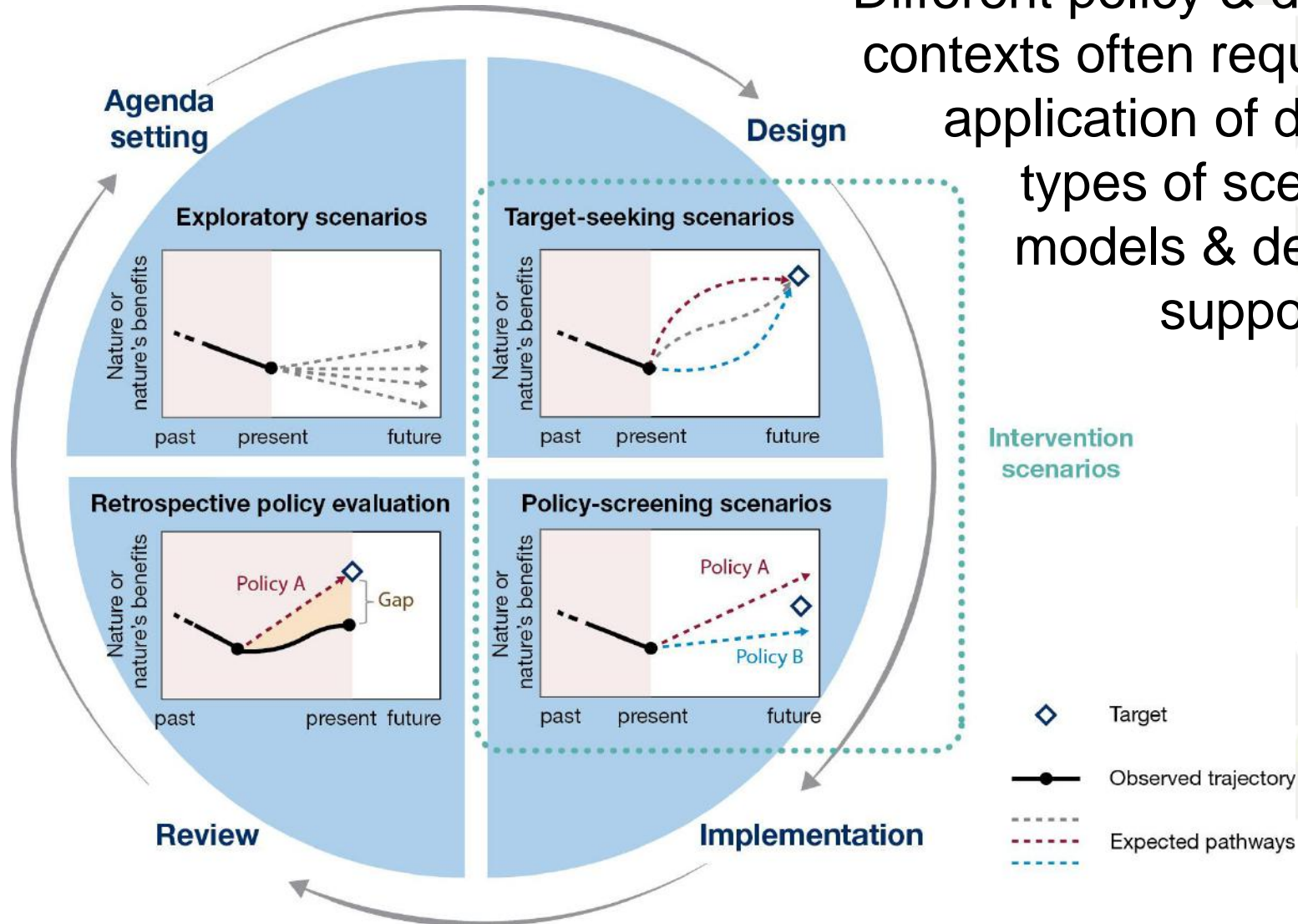
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Importance of policy & decision context

Different policy & decision contexts often require the application of different types of scenarios, models & decision-support tools

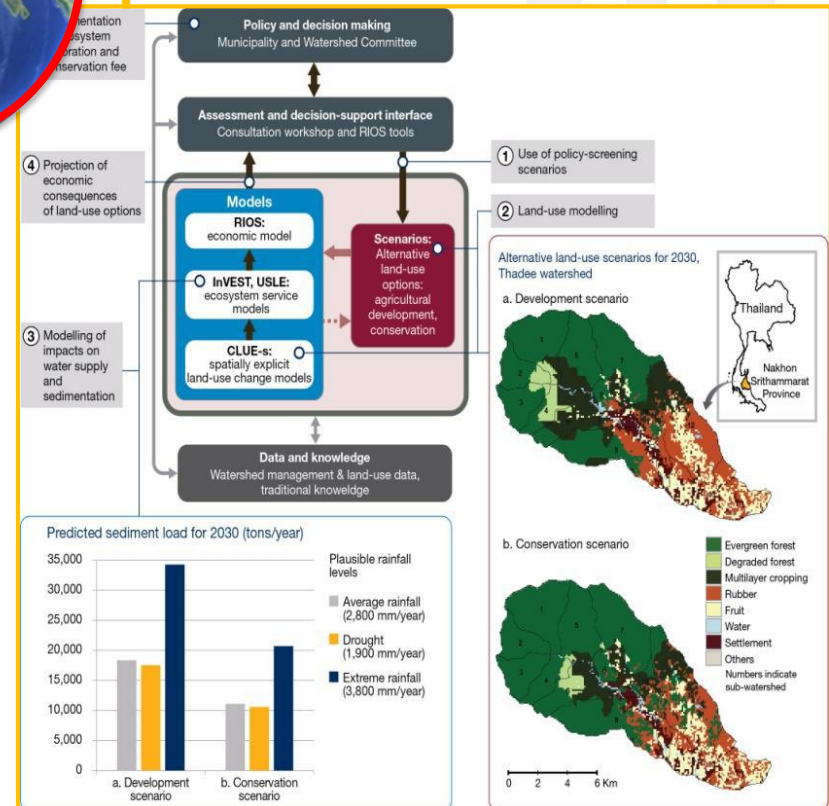
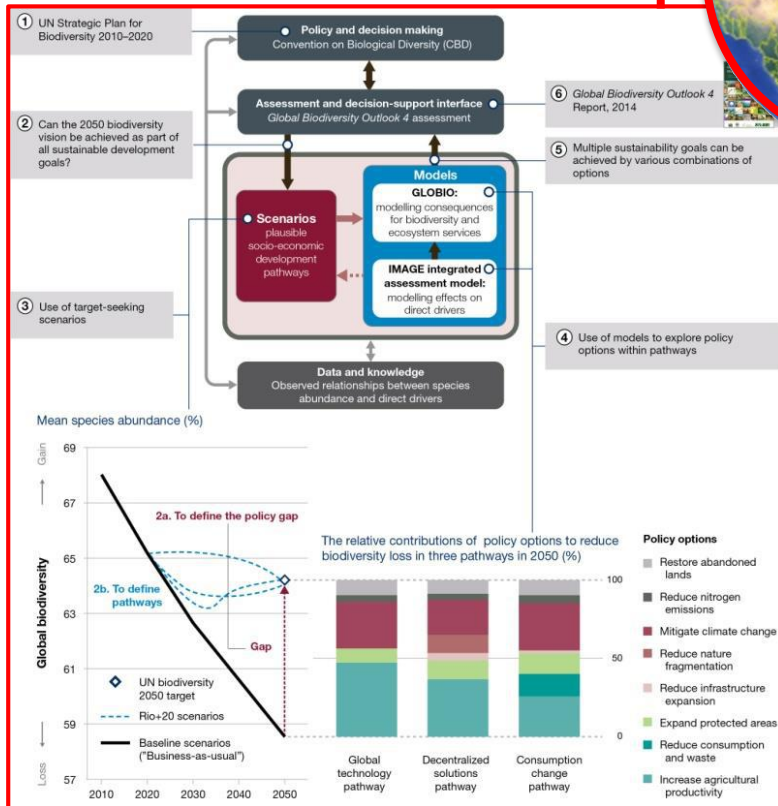


Importance of policy & decision context

e.g. global agenda setting & policy design (Global Biodiversity Outlook 4)

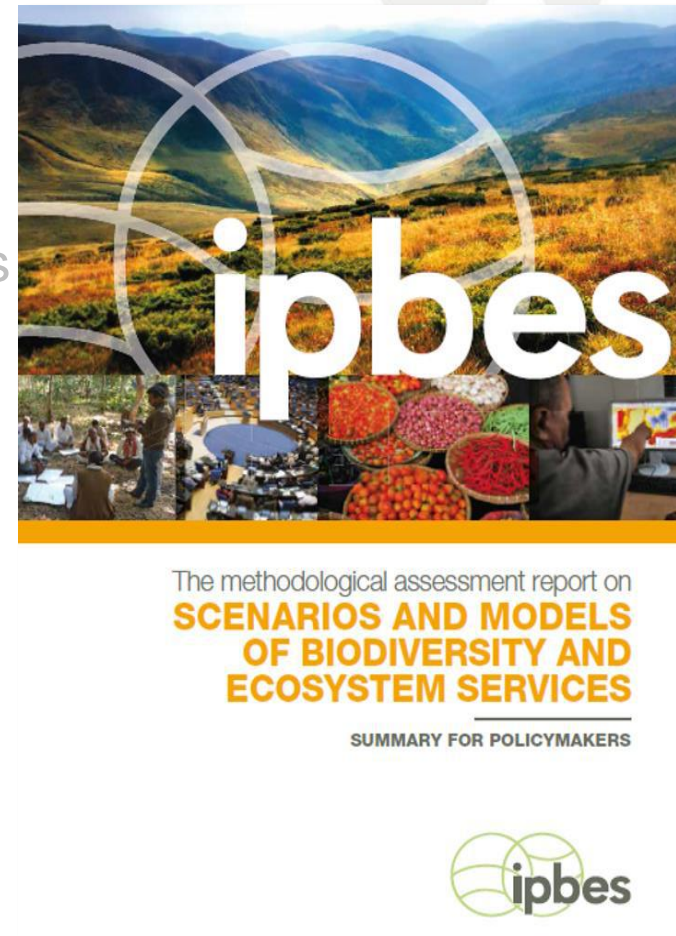


e.g. local policy design & implementation (Thadee watershed, Thailand)



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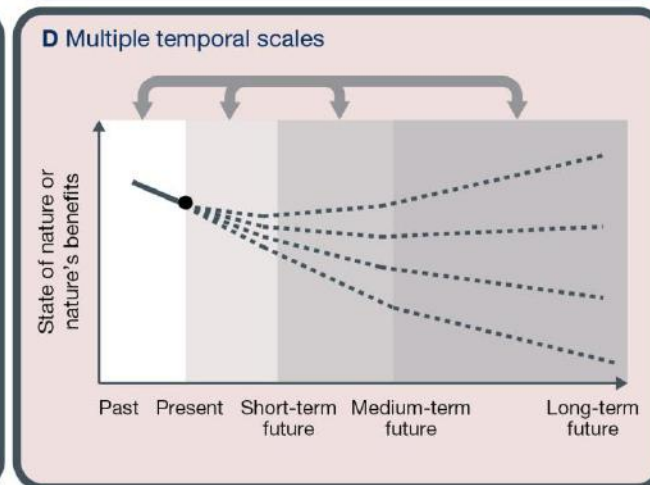
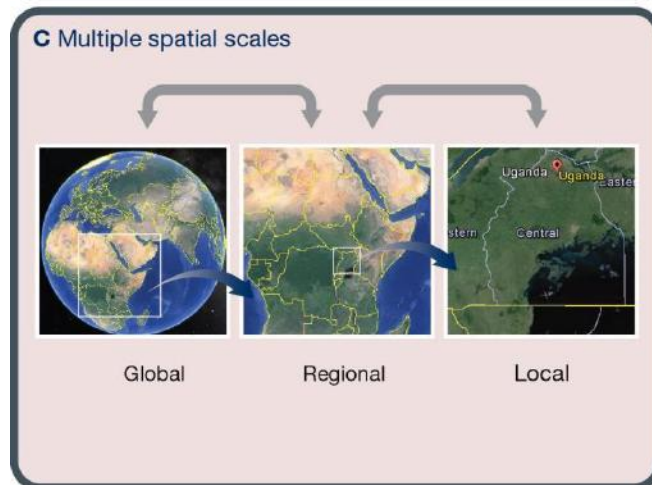
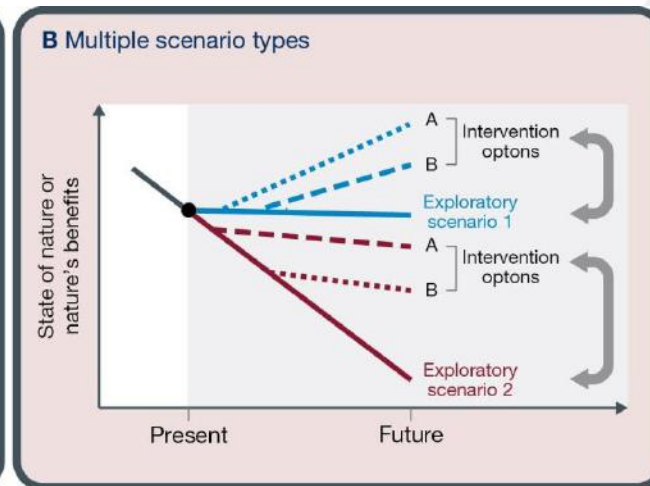
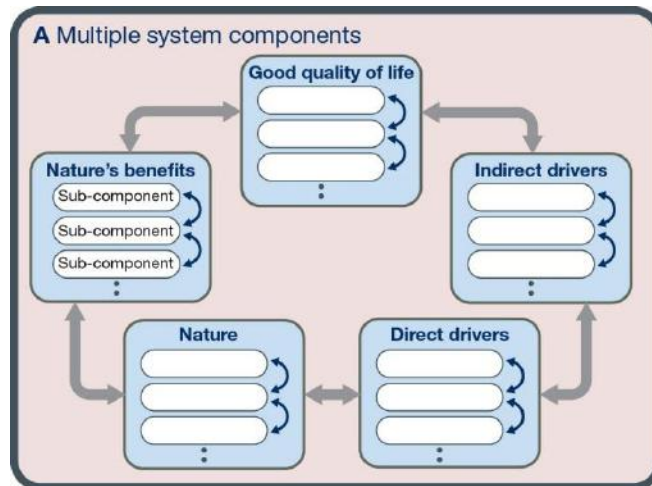


Guidance for the Platform [IPBES] and its task forces and expert groups

1. Experts planning to employ scenarios and models in Platform thematic, regional and global assessments may want to consider maximizing the benefit derived from analysing and synthesizing results from existing applications of policy-relevant scenarios and models.
- 2. The Platform may want to consider encouraging and working closely with the wider scientific community to develop a flexible and adaptable suite of multi-scaled scenarios specifically tailored to its objectives.**
3. In order to overcome barriers to the use of scenarios and models, it is important that the Platform continue to support and facilitate capacity-building within the scientific community and amongst policymaking and decision-making practitioners.
4. Because of the highly technical nature of scenarios and models, it is preferable that all of the Platform deliverables involve experts with knowledge of the utility and limitations of scenarios, models and decision-support tools.
5. The Platform should consider putting in place mechanisms to help experts involved in Platform deliverables utilize scenarios and models and communicate results effectively.
6. Scenarios and models can potentially be promoted through all Platform deliverables, so the implementation plans of those deliverables should be reviewed to ensure they reflect such potential.

Characteristics of a flexible and adaptable suite of “IPBES scenarios”

- Multiple spatial scales
- Multiple temporal scales
- Multiple scenarios types
- Relevant drivers & policy options
- Participatory approach
- Developed closely with other sectors



Participatory approaches

Effective application and uptake of scenarios & models requires close involvement of policy makers, practitioners and other relevant stakeholders ... throughout the entire process



Planning for a new generation of scenarios for IPBES

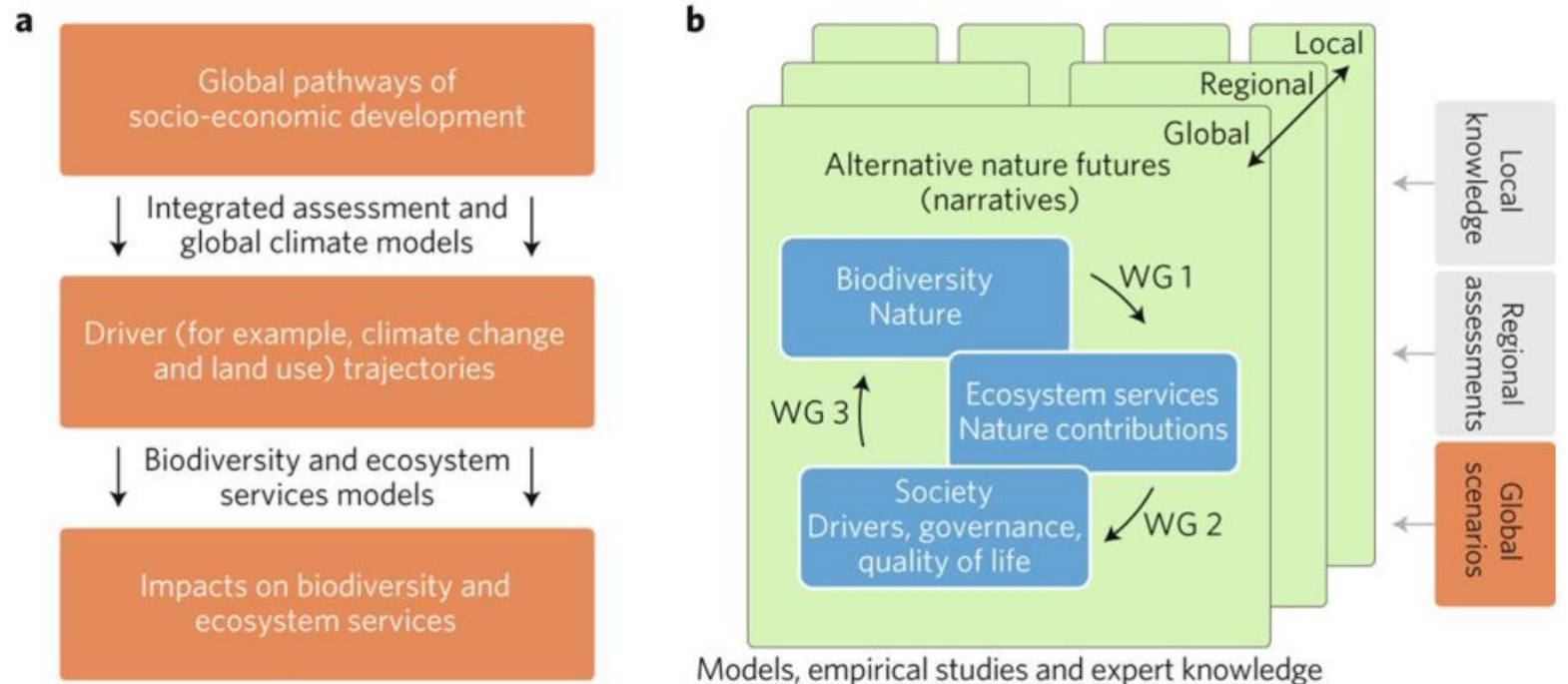
Workshop on the Way Forward for Scenario Development for IPBES

Leipzig 3-6th October 2016



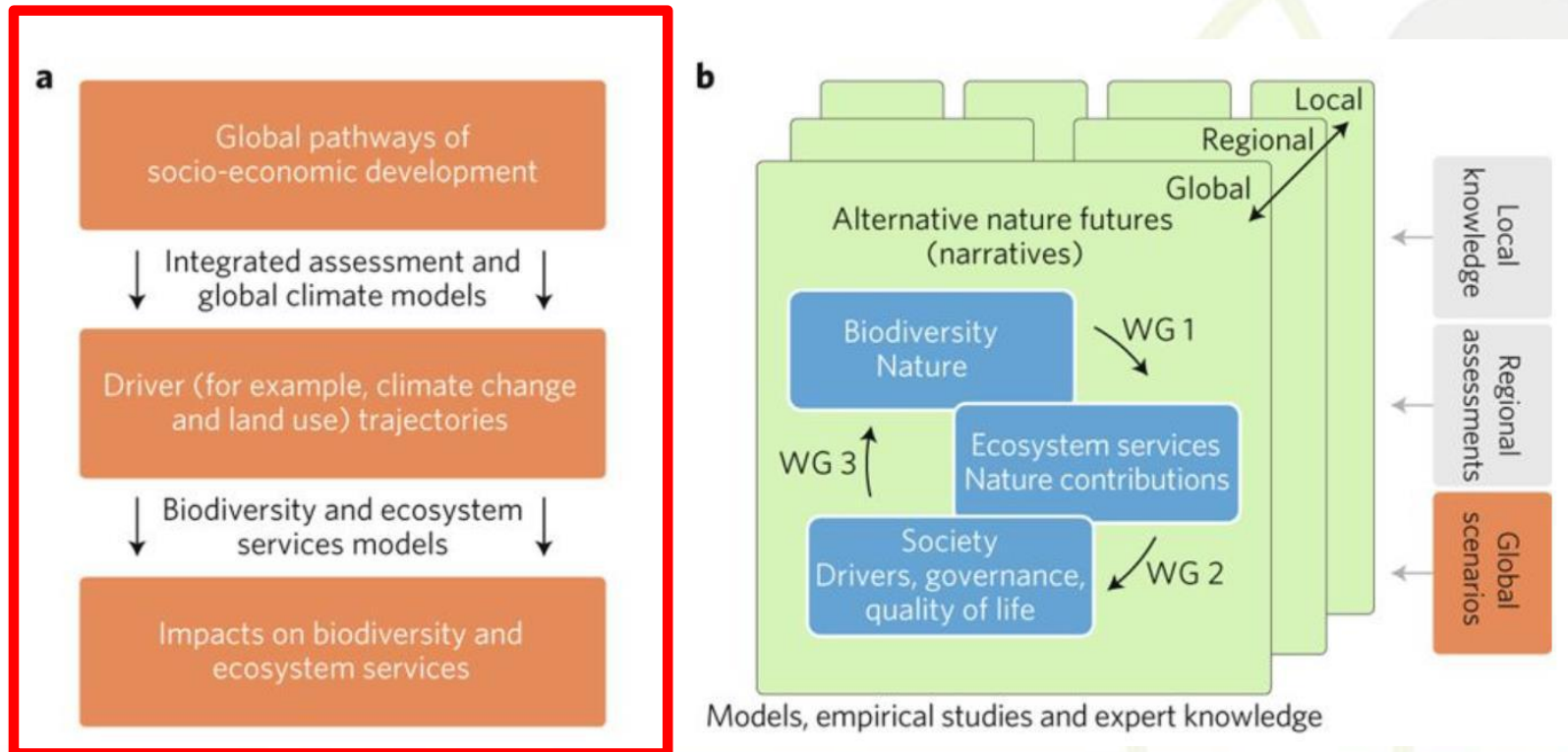
Multiscale scenarios for nature futures

Isabel M. D. Rosa, Henrique M. Pereira, Simon Ferrier, Rob Alkemade, Lilibeth A. Acosta, H. Resit Akcakaya, *et al*

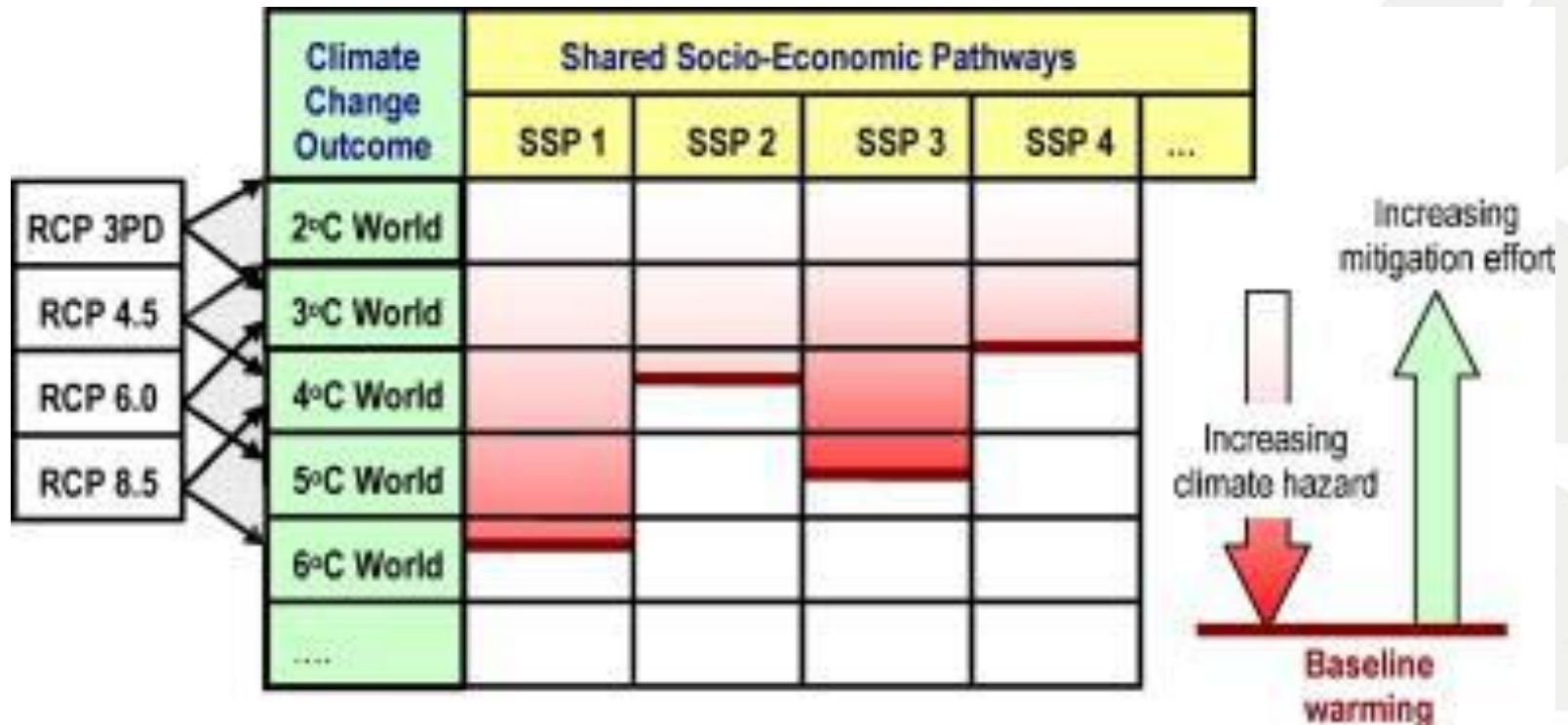


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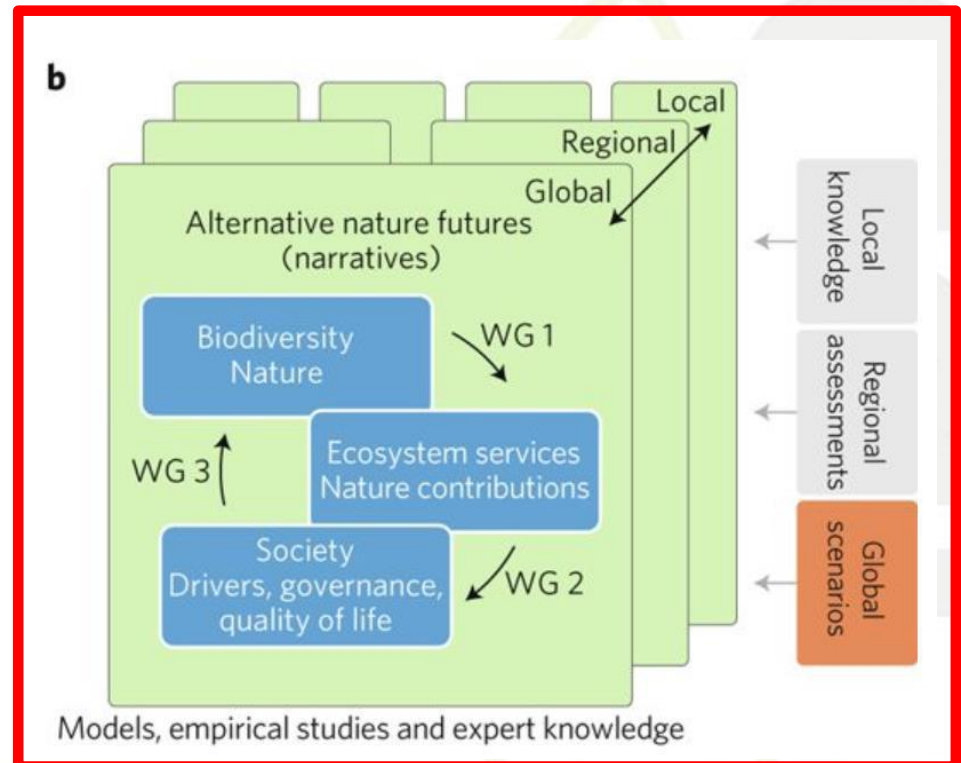
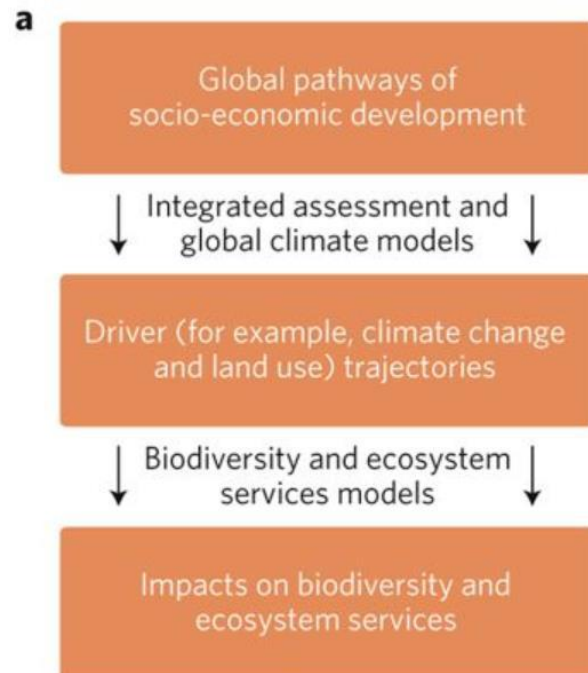


Existing global scenarios from other sectors: e.g. the SSP-RCP framework ...

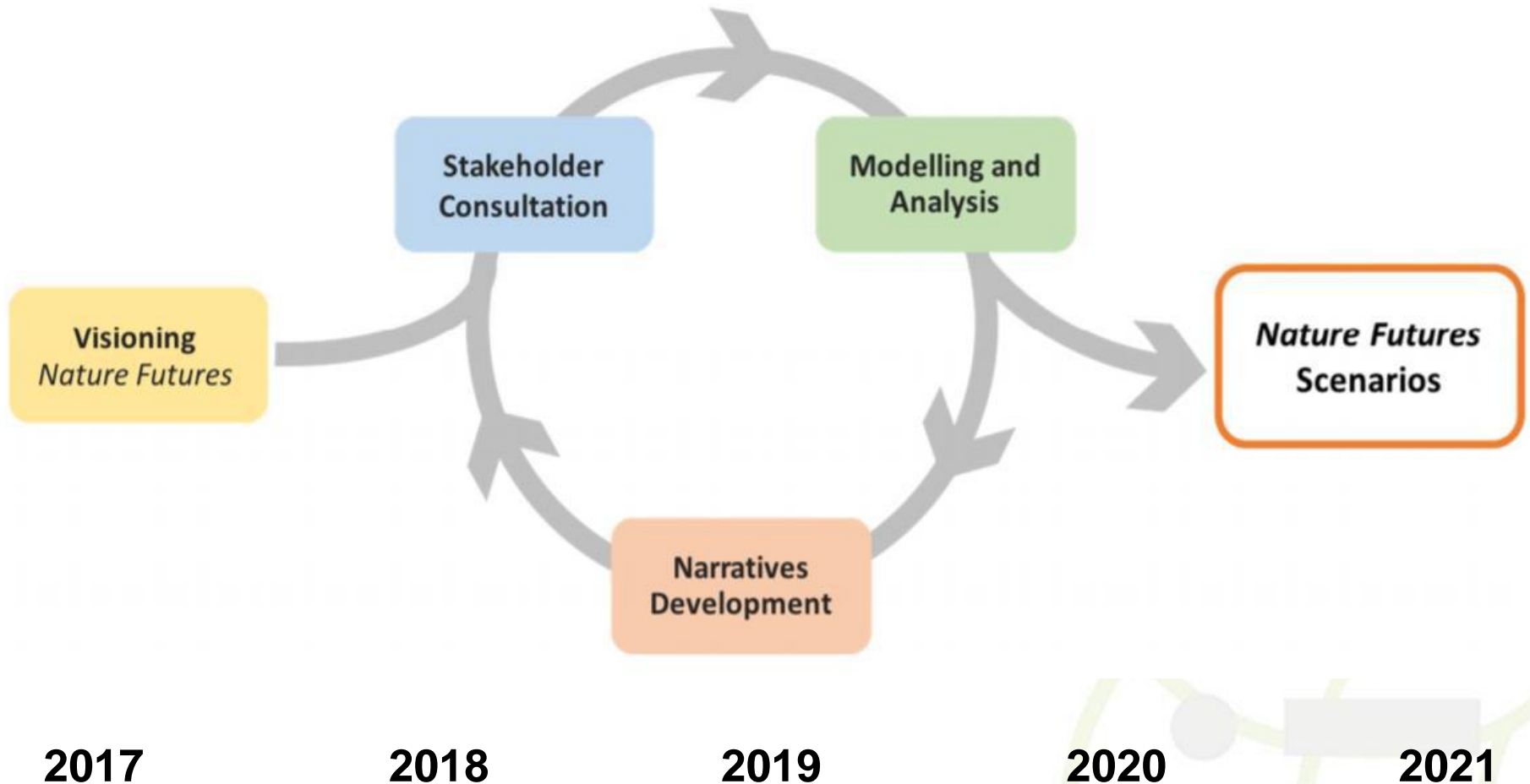


Multiscale scenarios for nature futures

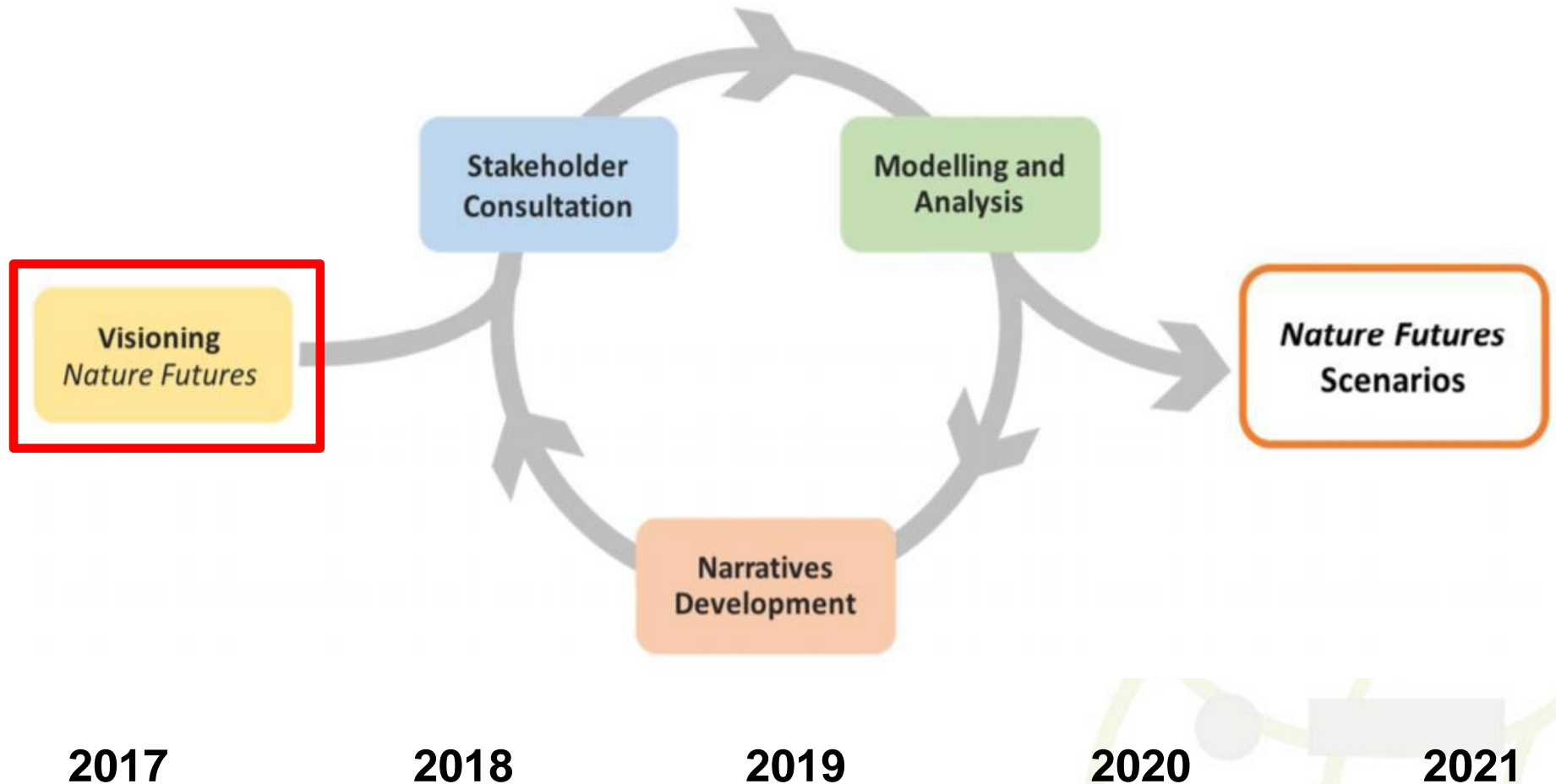
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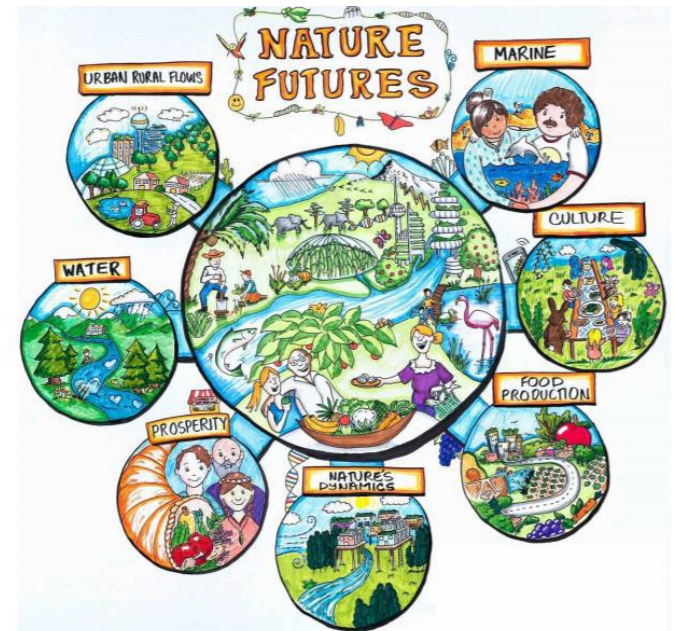


Planning for a new generation of scenarios for IPBES



Visions for nature and nature's contributions to people for the 21st century

Report from an IPBES visioning workshop held on 4-8 September 2017 in Auckland, New Zealand



Setting the scene & Selection of themes

- Photo exercise on participant's relationship with nature
- Expectations of the workshop
- Selection of thematic groups



Constructing scenario skeletons

- Selection of three 'seeds' per theme
- Developing Future Wheels per seed



Fleshing out narratives

- Developing a Three Horizons Framework per theme
- Pathways to achieve each vision

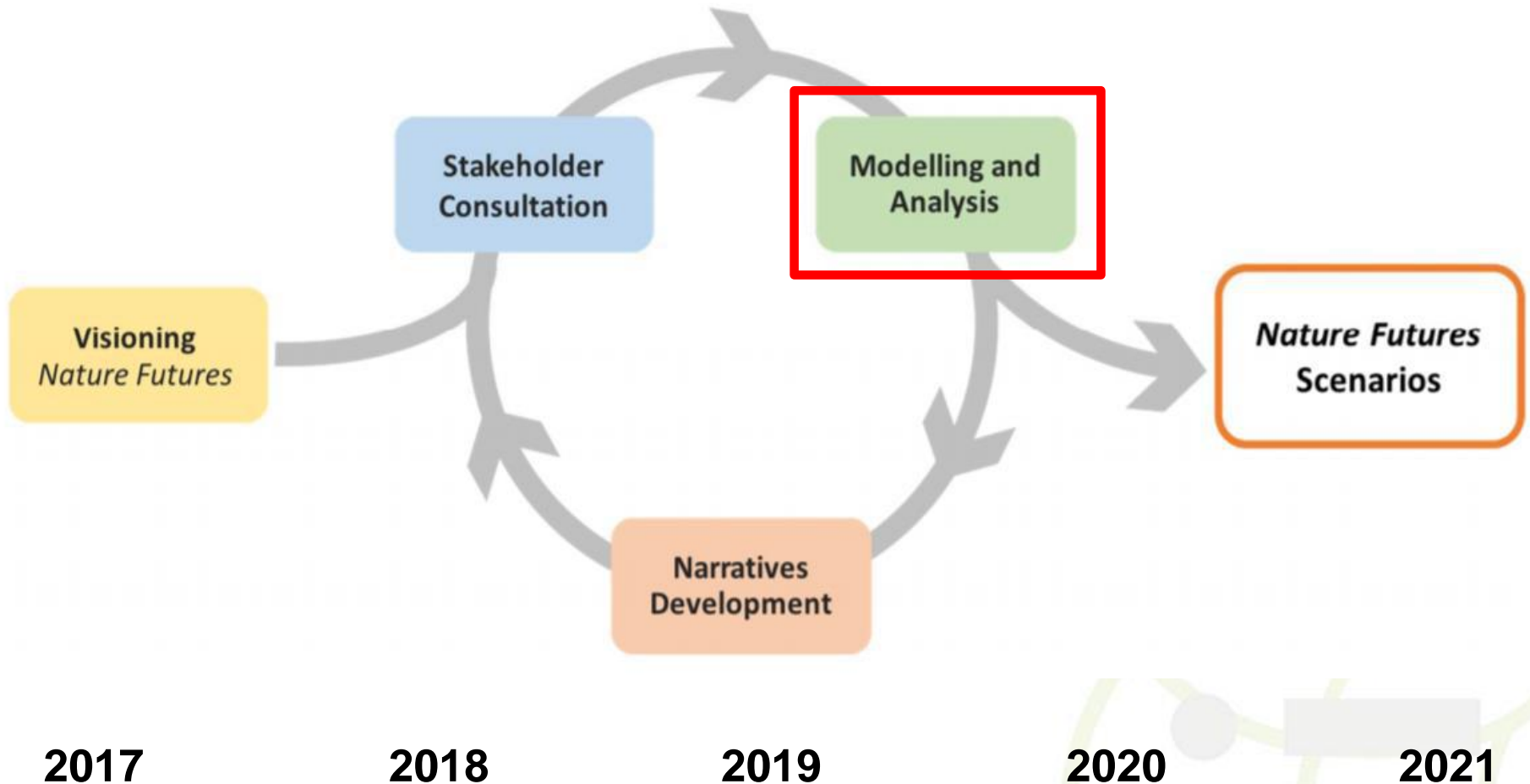


Comparing the visions

- Mapping of the visions across topics
- Mapping of the visions across regions



Planning for a new generation of scenarios for IPBES



Mobilization of international communities of practice around global biodiversity and ecosystem-service modelling

bioRxiv preprint first posted online Apr. 16, 2018; doi: <http://dx.doi.org/10.1101/300632>. The copyright holder for this preprint (which was not peer-reviewed) is the author/funder. It is made available under a [CC-BY-NC-ND 4.0 International license](https://creativecommons.org/licenses/by-nc-nd/4.0/).

A protocol for an intercomparison of biodiversity and ecosystem services models using harmonized land-use and climate scenarios

HyeJin Kim^{1,2}, Isabel M.D. Rosa^{1,2}, Rob Alkemade^{3,4}, Paul Leadley⁵, George Hurtt⁶, Alexander Popp⁷, Detlef P van Vuuren⁸, Peter Anthoni⁹, Almut Arneith⁹, Daniele Baisero¹⁰, Emma Caton¹¹, Rebecca Chaplin-Kramer¹², Louise Chini⁶, Adriana De Palma¹¹, Fulvio Di Fulvio¹³, Moreno Di Marco¹⁴, Felipe Espinoza¹¹, Simon Ferrier¹⁵, Shinichiro Fujimori¹⁶, Ricardo E. Gonzalez¹⁸, Maya Gueguen²⁹, Carlos Guerra^{1,2}, Mike Harfoot¹⁹, Thomas D. Harwood¹⁵, Tomoko Hasegawa¹⁷, Vanessa Haverd²⁰, Petr Havlík¹³, Stefanie Hellweg²¹, Samantha L. L. Hill^{11,19}, Akiko Hirata²², Andrew J. Hoskins¹⁵, Jan H. Janse^{3,23}, Walter Jetz²⁴, Justin A. Johnson²⁵, Andreas Krause⁹, David Leclère¹³, Ines S. Martins^{1,2}, Tetsuya Matsui²², Cory Merow²⁴, Michael Obersteiner¹³, Haruka Ohashi²², Benjamin Poulter²⁶, Andy Purvis^{11,27}, Benjamin Quesada⁹, Carlo Rondinini¹⁰, Aafke Schipper^{3,28}, Richard Sharp¹², Kiyoshi Takahashi¹⁷, Wilfried Thuiller²⁹, Nicolas Titeux^{1,30}, Piero Visconti^{31,32}, Christopher Ware¹⁵, Florian Wolf^{1,2}, Henrique M. Pereira^{1,2,33}



PBL Netherlands Environmental
Assessment Agency



SAPIENZA
UNIVERSITÀ DI ROMA



Yale University



International Institute for
Applied Systems Analysis

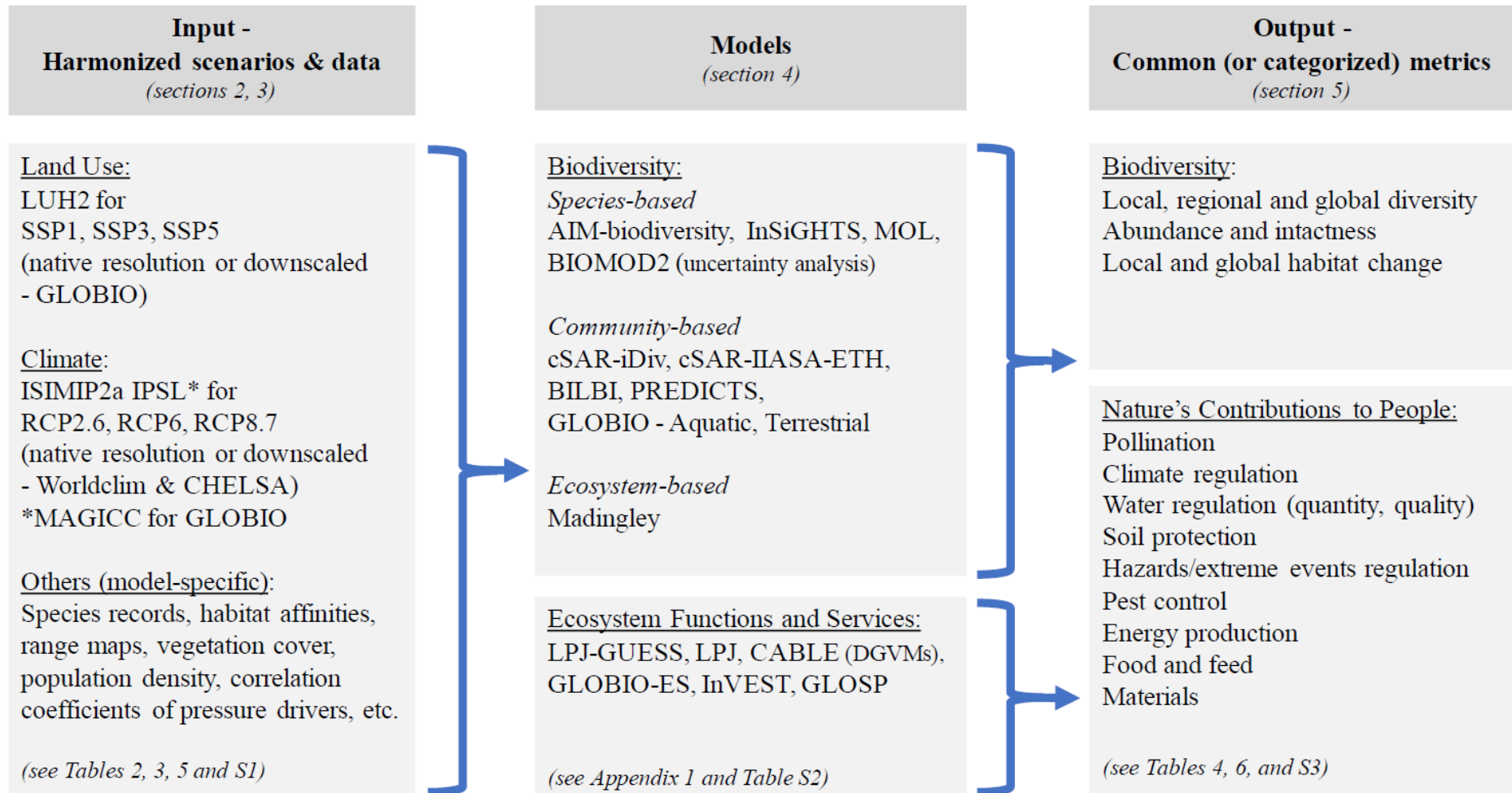


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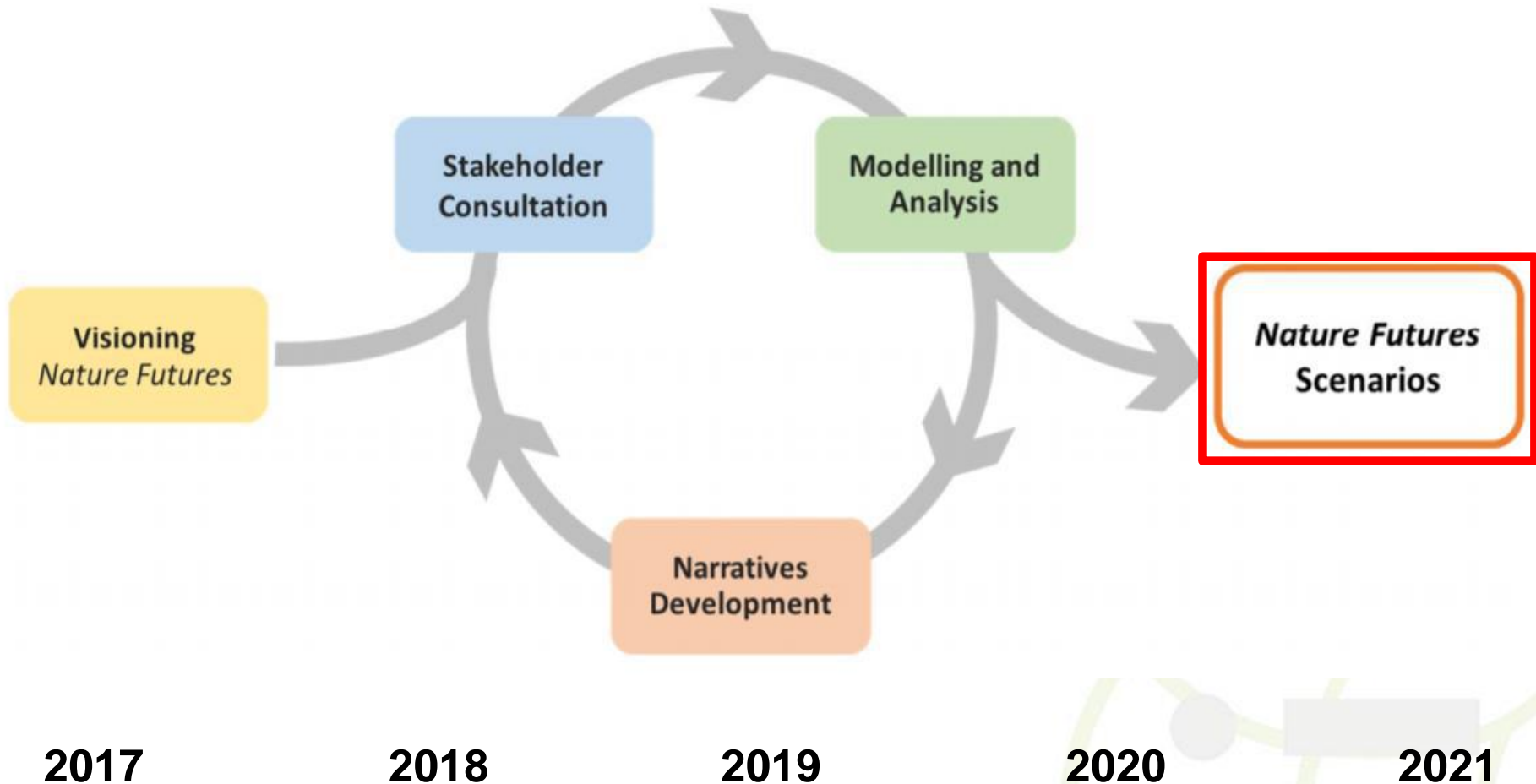
Radboud University



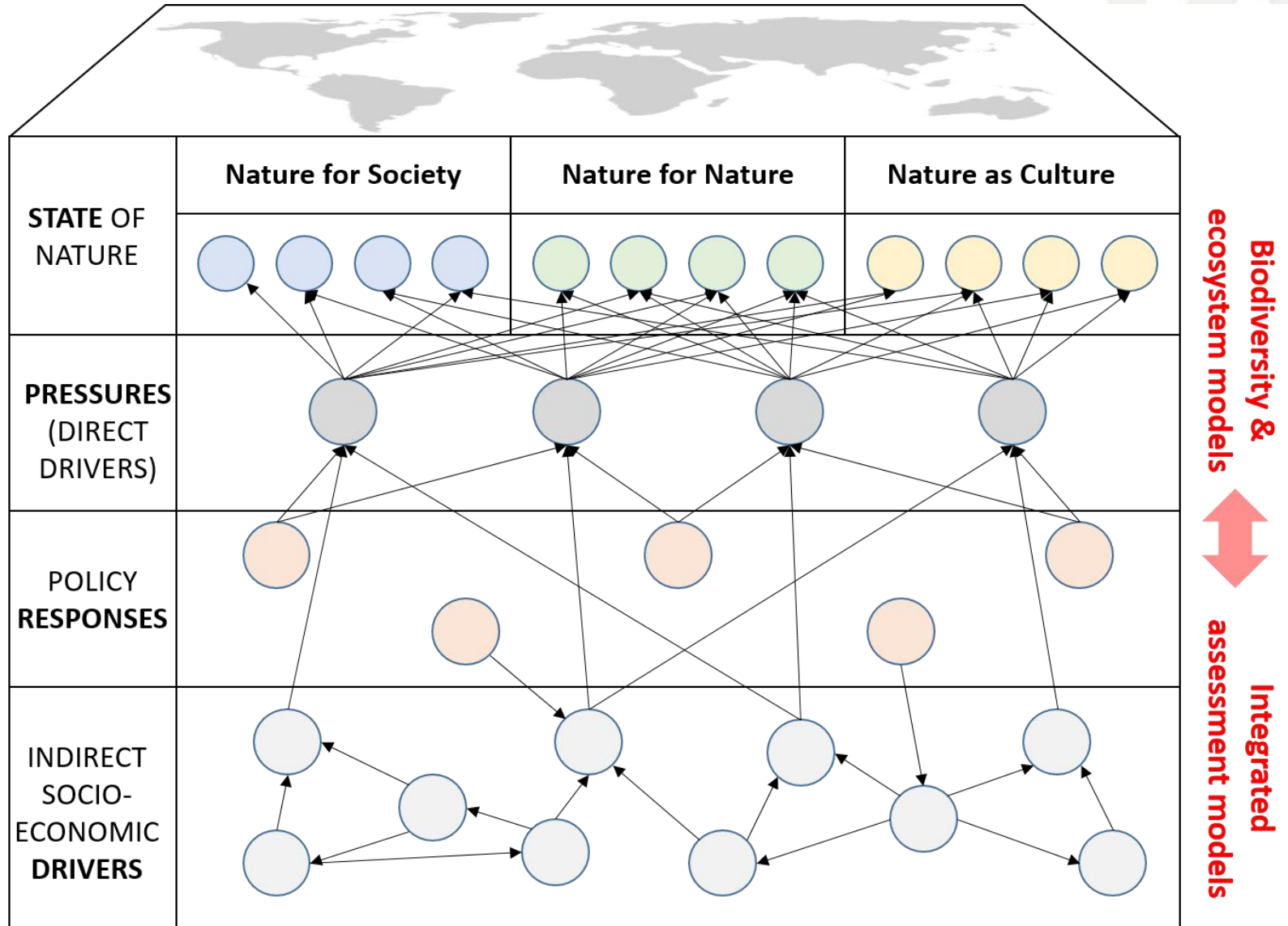
Mobilization of international communities of practice around global biodiversity and ecosystem-service modelling



Planning for a new generation of scenarios for IPBES



A flexible and adaptable framework ...



... interacting with scenario analysis
and modelling efforts addressing
other Sustainable Development Goals



SUSTAINABLE
DEVELOPMENT GOALS





**Thank
you !**

