REGIONAL FLYWAY INITIATIVE TRAINING SERIES:

Workshop on Wetland Ecosystem Services and Nature-based Solutions

THAILAND

27–29 November 2023

Introduction to the Tools for Assessing Ecosystem Services

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Decision tree for tool selection

requires paid software

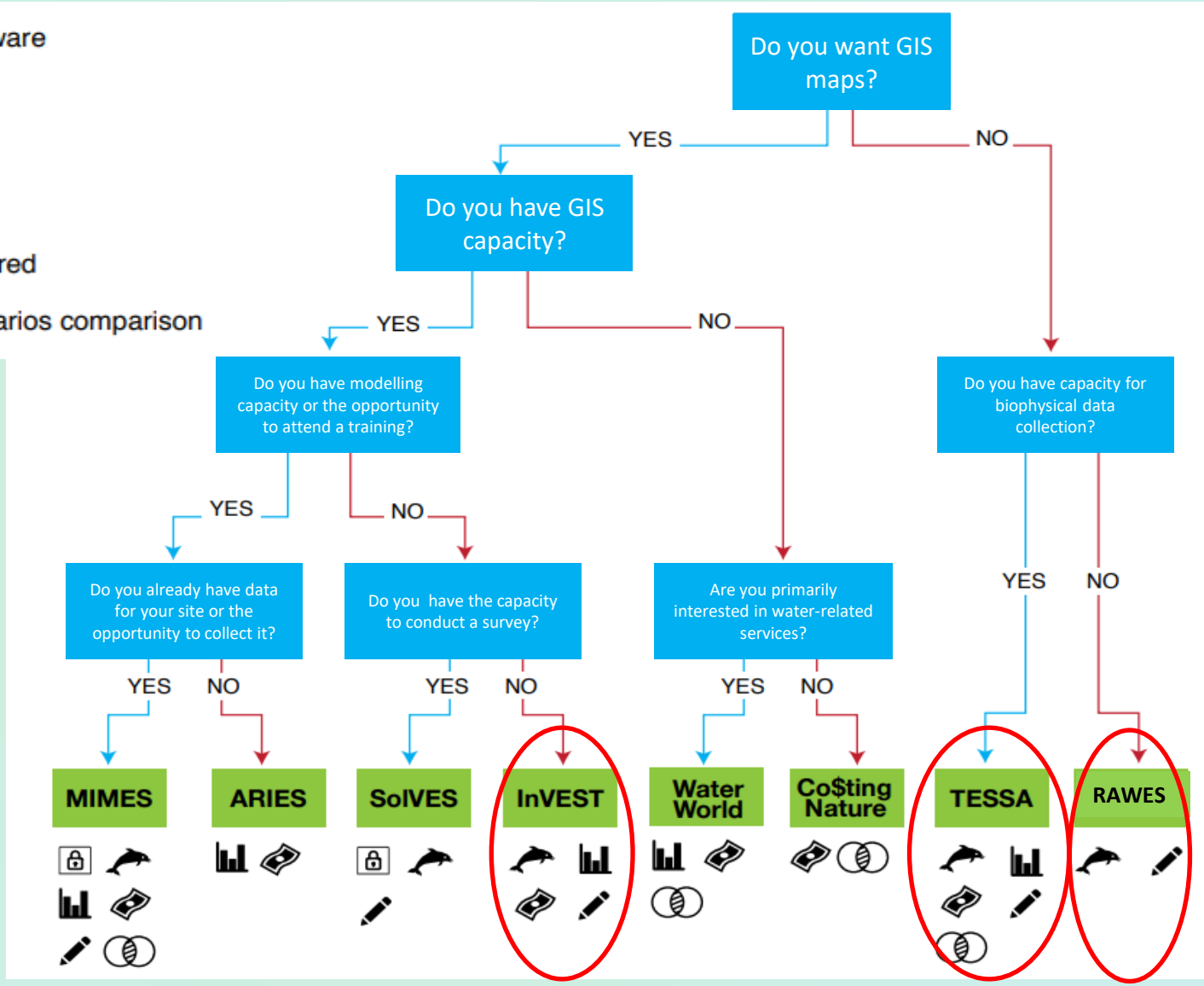
marine (coastal)

quantitative

monetary values

primary data required

designed for scenarios comparison



Adapted from Neugarten et al., 2018.
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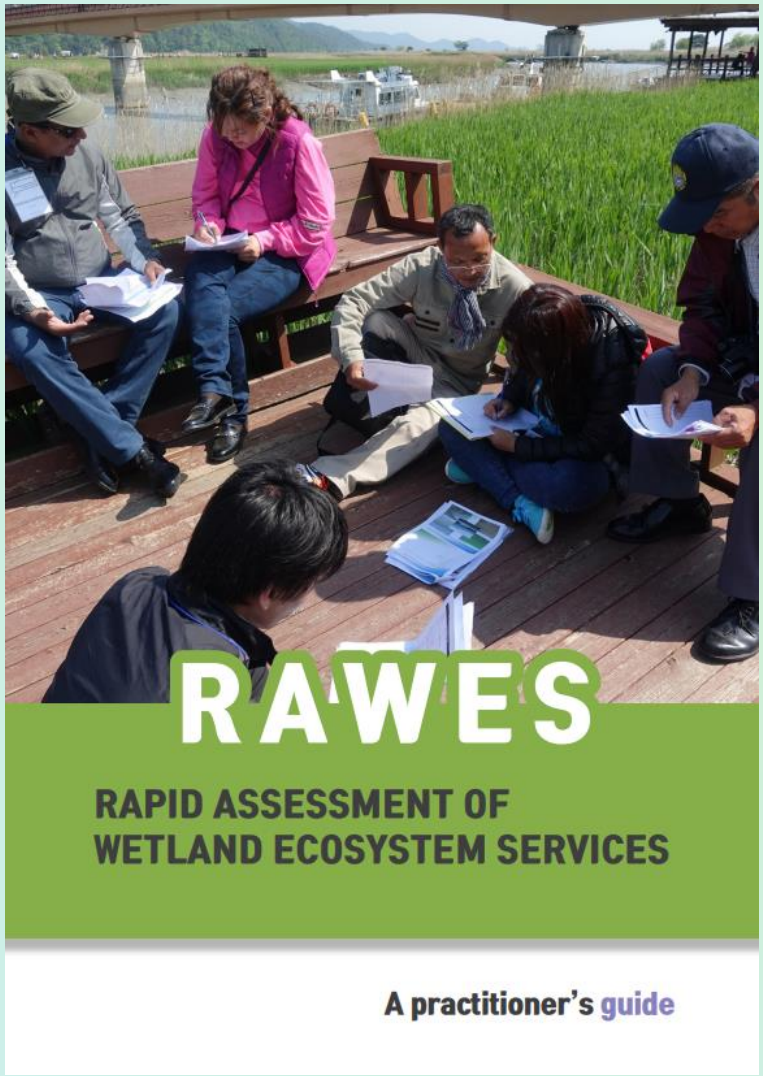
Partnership for nature and people

Rapid Assessment of Wetland Ecosystem Services (RAWES)



13th Meeting of the Conference of the Contracting Parties to the Ramsar Convention on Wetlands

"Wetlands for a Sustainable Urban Future"
Dubai, United Arab Emirates, 21-29 October 2018

Resolution XIII.17

Rapidly assessing wetland ecosystem services

1. RECOGNIZING that, to achieve the Mission of the Ramsar Convention as described in the Strategic Plan 2016-2024, it is essential that vital ecosystem functions and the ecosystem services that wetlands provide to people and nature are fully recognized, maintained, restored and wisely used and that the need to develop approaches for assessing both ecosystem functions and ecosystem services is recognized;

2. RECALLING that Annex A to Resolution IX.1 on *Additional scientific and technical guidance for implementing the Ramsar wise use concept* defines the ecological character of wetlands as "the combination of the ecosystem components, processes and benefits/services that characterize the wetland at a given point in time"; ALSO RECALLING that the *Guidance for valuing the benefits derived from wetland ecosystem services* (Ramsar Technical Report No.3 / Technical Series No.27 of the Convention on Biological Diversity) provides guidance for valuing wetlands and advice on when and why wetland valuation should be undertaken and sets out a framework for the integrated assessment and valuation of wetland services;

3. NOTING that a priority area of focus for the Convention under the Ramsar Strategic Plan 2016-2024 (Resolution XII.2) is to enhance the information about ecosystem functions and the ecosystem services that wetlands provide to people and nature; ALSO RECALLING Target 11 of the Ramsar Strategic Plan 2016-2024, "Wetland functions, services and benefits are widely demonstrated, documented and disseminated", and that the assessment of ecosystem services of Wetlands of International Importance (Ramsar Sites) is a key indicator of progress against this target;

4. FURTHER recognizing that, under Resolution XII. 3[1], on *Enhancing the languages of the Convention and its visibility and stature, and increasing synergies with other multilateral environmental agreements and other international institutions*, Contracting Parties and other stakeholders are encouraged "to increase their efforts to communicate on the values of ecosystem services of wetlands in other sectors' strategies, plans and regulations, and integrate them into a basin approach to land-use plans and other relevant local, national and global decisions";

Rapid Assessment of Wetland Ecosystem Services (RAWES)

- Ramsar-specific
- Systemic
- Rapid (2 person-days)
- Qualitative
- Comprehensive

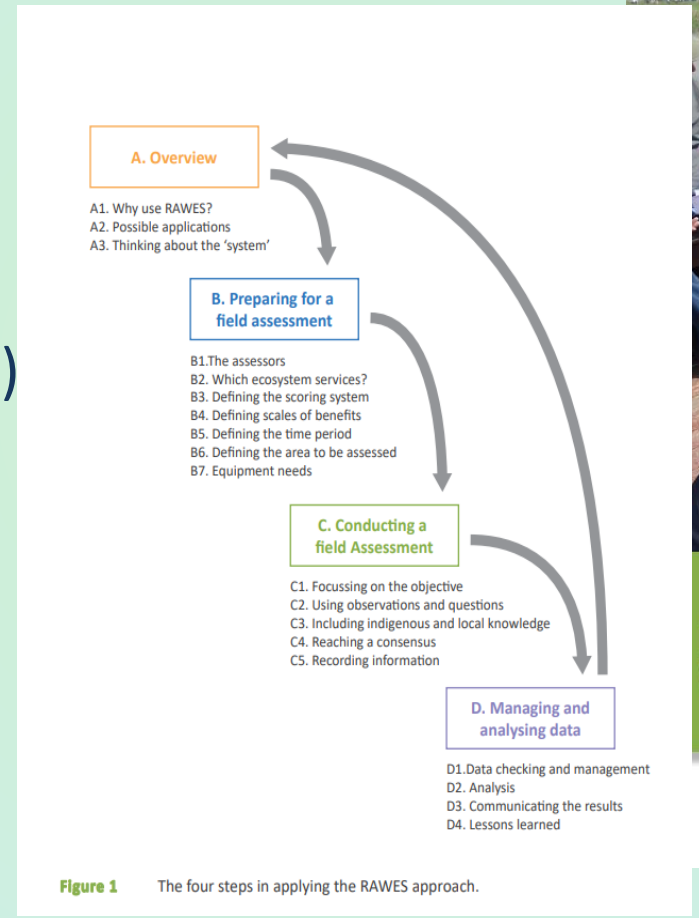
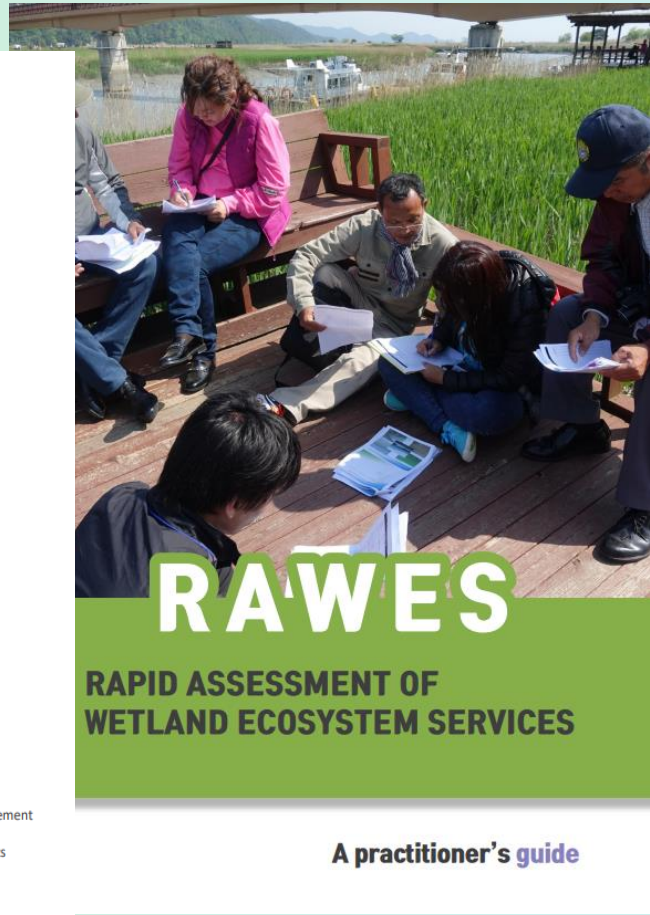


Figure 1 The four steps in applying the RAWES approach.



What is TESSA?

Toolkit for Ecosystem Service Site-based Assessment

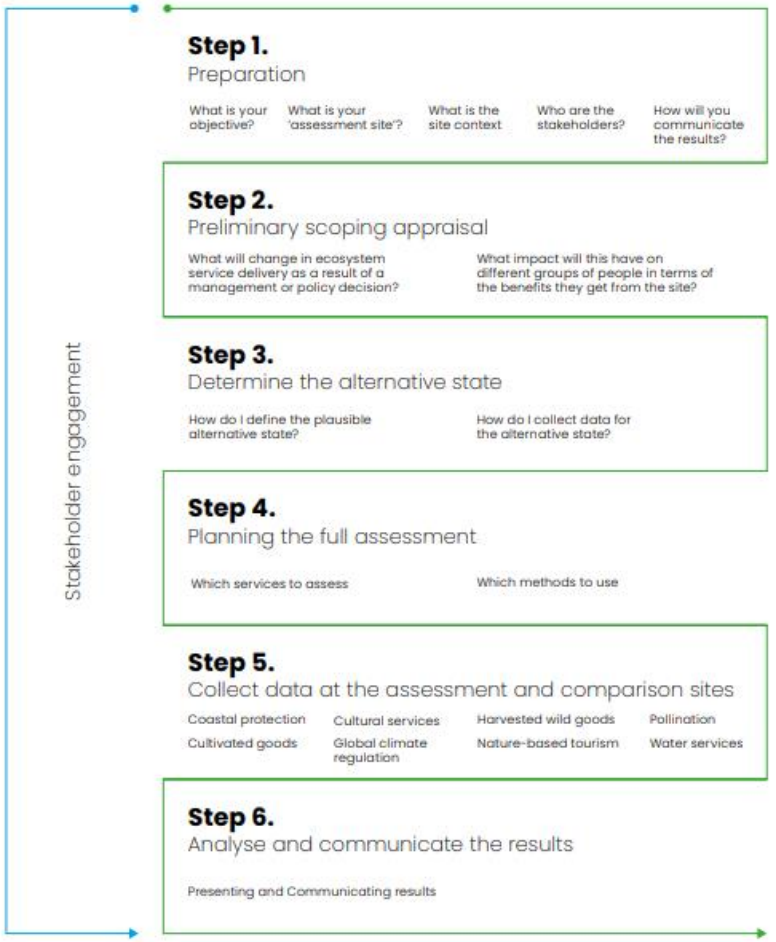
- ✓ Innovative, yet practical
- ✓ For non-experts
- ✓ Low-cost methods
- ✓ Scientifically robust
- ✓ Site to Landscape Scale (100 ha – 10,000 ha)
- ✓ Trade-offs and beneficiaries

https://www.birdlife.org/tessa-tools/

TESSA – A Step by Step Guidance

Allows users to develop an understanding of the benefits people receive from nature, and assess their value in order to generate information for efficient decision-making

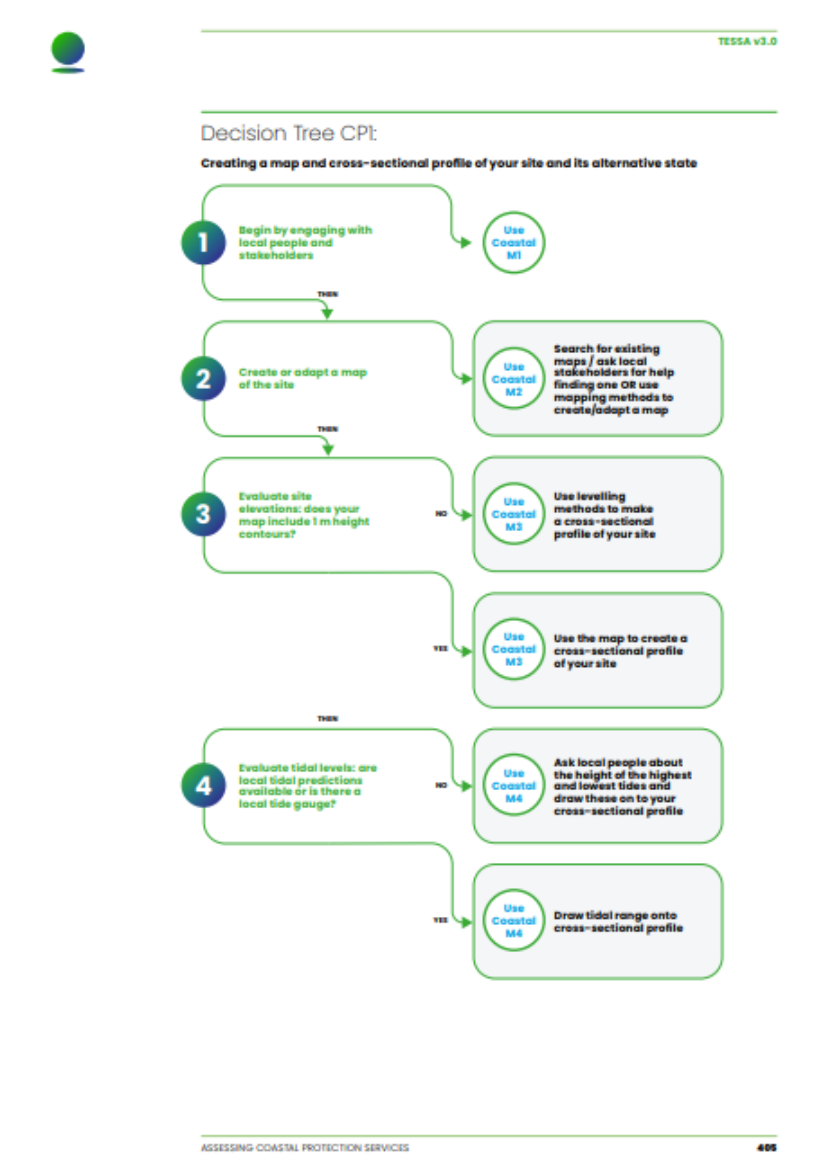
- Set the objectives of the assessment
- Decide on what services to focus
- Methods to measure ecosystem services
- Present and communicate the results



TESSA – A Step by Step Guidance [cont'd]

The toolkit also includes:

- ✓ Decision trees (flow charts)
- ✓ Detailed methods
- ✓ Worked examples
- ✓ Additional Guidance (templates)
- ✓ Section on data synthesis



TESSA – A Step by Step Guidance [cont'd]

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TESSA v3.0

Recreation Method 3

Estimating consumer surplus of nature-based recreation and tourism at the site using travel cost method

If you want to estimate the economic value of nature-based recreation and tourism to a site but cannot get any secondary information, you can estimate this using the Travel Cost Method (TCM).

ALERT

Travel Cost Method is more complex than other methods in this toolkit so using this method requires users to be confident with statistical analysis, especially regression analysis. If you are not confident with regression analysis, use instead Recreation M2 to estimate the economic value based on visitor spend.

You will also need to know the annual number of visitors to the site either from secondary data or by using Recreation M1 and the likely visitation under the alternative state (either from a census at the comparison site or through the questionnaire (Recreation Appendix 1: Template questionnaire for nature-based recreation and tourism).

Step 1: Gathering information from visitors

For this method, you need to ask visitors questions to give you data which you can use to estimate the economic value of visits to the assessment site (for the questions, see Recreation Appendix 1: Template questionnaire for nature-based recreation and tourism). The key pieces of information that you need to gather from respondents are:

The amount of money that they have spent to visit the site. This can include the cost of travel, entry fees, direct associated spend, and even the equivalent wage value for their time.

How often they visit the site, or how often they expect to visit the site. The latter is especially important for first-time visitors, otherwise you will not be able to use their data to estimate visit frequency. This is especially important for the Individual Travel Cost Method (see below).

For sites where you do not have another site to collect data for the alternative state, you also need to ask:

How often they would visit the site if it changed to the alternative state.

In this case, you must explain the characteristics of the alternative state clearly (perhaps even show a photograph that represents the key characteristics of the alternative state). For guidance on estimating visit numbers under alternative state, see Recreation M1.

ALERT

The example questionnaire in Recreation Appendix 1: Template questionnaire for nature-based recreation and tourism is a template for guidance only. You will need to amend the questions according to the context of your site.

The questionnaire can be adapted to gather information about how benefits are distributed across different social groups (e.g., on gender, ethnicity, wealth status, age, marital status and education.). Data of this sort can be helpful if you choose to apply the individual TCM rather than the zonal TCM.

It is also advisable to identify to whom any monetary value is being distributed i.e., package holidays benefit the holiday

TESSA – A Step by Step Guidance [cont'd]

The toolkit also includes:

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TESSA v3.0

Guidance 2. Stakeholder analysis

This section provides guidance on how to identify stakeholders.

Stakeholder analysis is an essential part of engaging with the most relevant people. The easiest way to do this is to complete a stakeholder analysis matrix, seeking input from people who are familiar with the site. This usually uses two axes to define 'importance' of the stakeholder against the 'influence' of the stakeholder.

In filling this in, consider their characteristics (the kind of organisation/person they are) such as:

- Their main interests in the site
- Their main rights in relation to the site (e.g., access)
- Their impact on the site and its services (current and future potential)
- Their dependence on the site and its services (current and future potential)

Example Stakeholder Analysis Matrix

Adapted from: Department for International Development. (1993). Guidance note on how to do stakeholder analysis of aid projects and programmes. London, UK: Department for International Development.

		Importance of Stakeholder			
		Unknown	Little / No importance	Some importance	Significant importance
Influence of Stakeholder	Significant influence	C		A	
	Somewhat influential				
	Little/No influence	D		B	
	Unknown				

Boxes A, B and C are the key stakeholders of the project. The implications of each box are summarised below:

Box A

These are stakeholders with a high degree of influence on the project, who are also of high importance for its success. This implies that the implementing organisation will need to construct good working relationships with these stakeholders, to ensure an effective coalition of support for the project. Examples might be senior officials and politicians.

Box B

These are stakeholders of high importance to the success of the project, but with low influence. This implies that they will require special initiatives if their interests are to be protected. An example may be traditionally marginalised groups (e.g., indigenous people, youth, women), who might be dependent on a site, but who have little 'voice' in its management.

GUIDANCES 527

TESSA – A Step by Step Guidance [cont'd]

The toolkit also includes:

- ✓ Decision trees (flow charts)
- ✓ Detailed methods
- ✓ Worked examples
- ✓ Additional Guidance (templates)
- ✓ Section on data synthesis

A collaborative contribution

The Toolkit for Ecosystem Service Site-based Assessment has been developed by

tessa

a.r.u.

BirdLife INTERNATIONAL

UNIVERSITY OF CAMBRIDGE

rspb giving nature a home

TROPICAL BIOLOGY ASSOCIATION

UN environment WCMC

University of Southampton

Piloting, feedback, development and improvement of TESSA

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ROYAL BOTANIC GARDEN EDINBURGH

iied

fera

The University Of Sheffield.

CEH Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL

UEA University of East Anglia

STAFFORDSHIRE UNIVERSITY

Implementation

Nature Fiji MareqetiViti

Nature Uganda

Grupo Jaragua, Inc.

Bird Conservation Nepal

blue ventures beyond conservation

WWT

A ROCHA International Conservation and Hope

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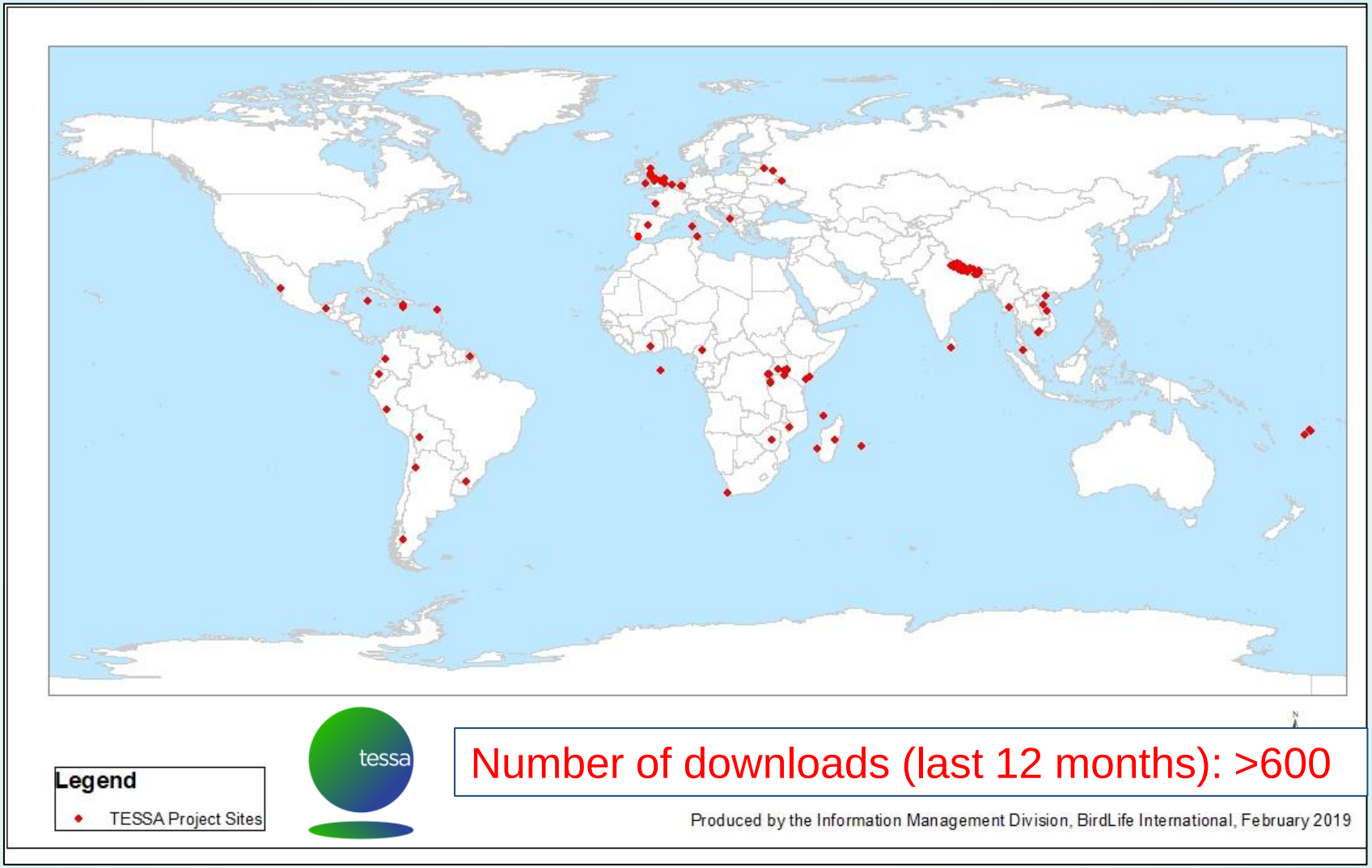
TESSA applications worldwide



TESSA Publications and Case Studies: https://www.birdlife.org/tessa-tools/

TESSA users

- Int'l NGOs / NGOs / GOs
- **Conservation practitioners (first target)**
- **Forestry, fisheries, water managers, land use planners, development organizations, researchers, etc.**
- Expanding to **corporate users**


How to use TESSA?

Key Concepts in TESSA

- Assessing the impacts of change – The Alternative State
- Comparative valuation of multiple ecosystem services
- Importance of beneficiaries and trade-offs
- Step-by-step framework

Assessing the impact of change

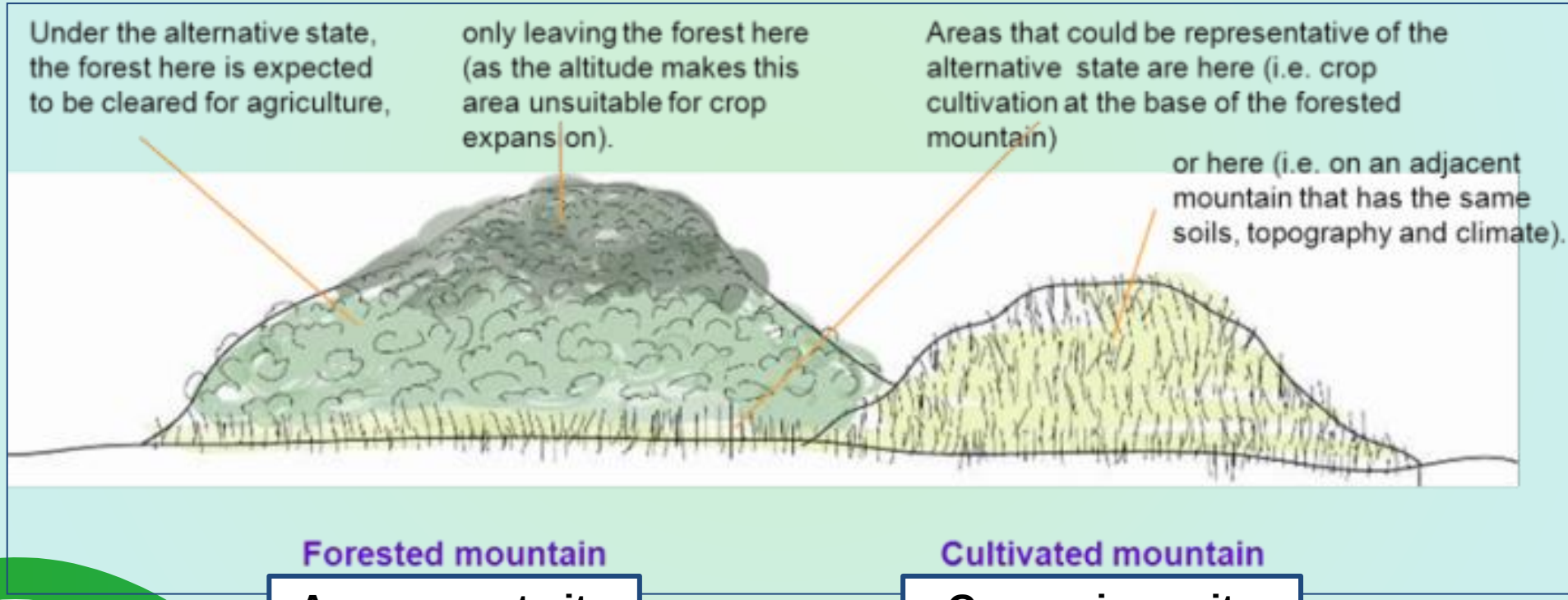
CHANGE

Site assessment (current state)
100% Native forest

Alternative state
95% Subsistence agriculture
5% Secondary Forest

How to measure ES in the Alternative State conditions?

- As much as possible, measurements should be taken from a real place to represent the alternative condition of your **assessment site** = the **comparison site(s)**



Why comparative valuation of multiple ES?

- ✓ Simple assessment of the gross values of a particular service is less useful - Relative values give decision-makers an idea of the net consequences of decisions
- ✓ Understand the impacts of management or land-use change on ES delivery
- ✓ Influence decision-making and promote efficient planning
- ✓ Preserve ES & their associated benefits people rely on
- ✓ Inform on human well-being & biodiversity conservation objectives

Beneficiaries

An ecosystem service only exists if someone derives benefits from it.

Social, political, economic and ecological factors play a role in the **distribution of benefits**, and the **impacts of change.** These may not be equitable.

It is essential to **understand who the beneficiaries are** so that the full consequences of changes in ES can be assessed.




TESSA v3.0

https://www.birdlife.org/tessa-tools/

6 Steps of TESSA

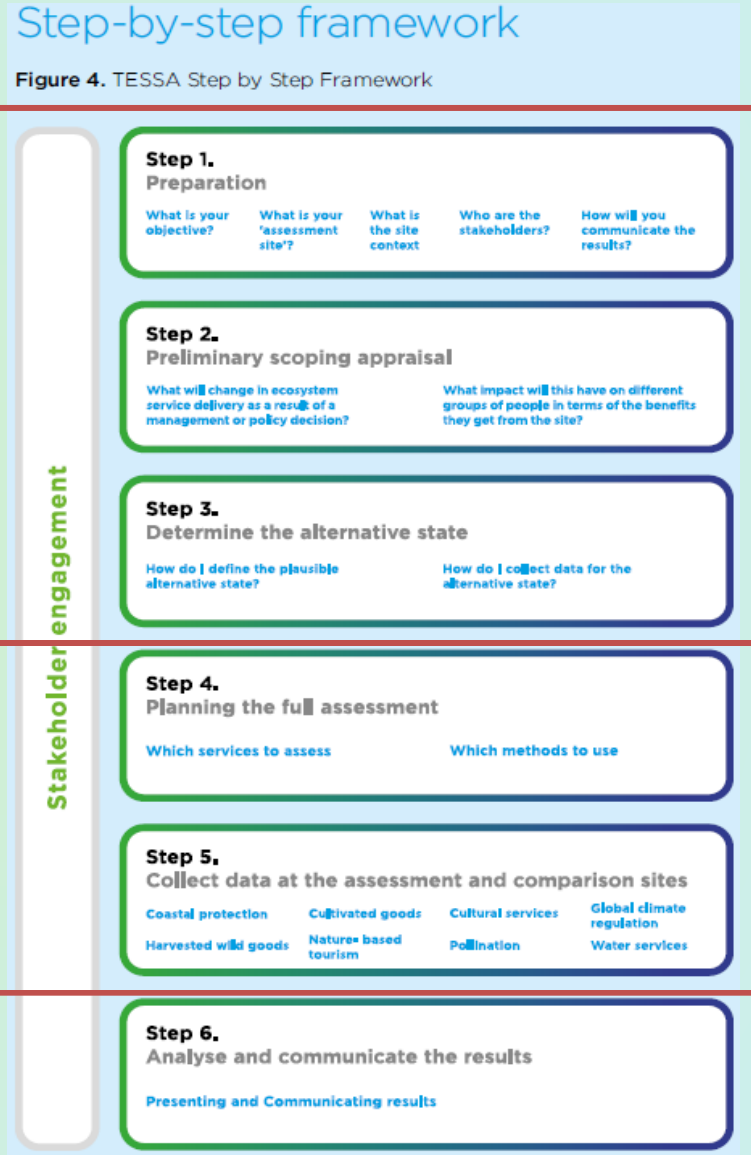
Qualitative assessment
Create/gather LULC of the site
Identify Key Stakeholders

Workshops/Meetings – Scoping appraisal

Identify the foreseeable change of the site

Select methods for the ES assessment
Field collection / Secondary data

Analysis of biophysical and economic values
Communication of results



Importance of stakeholder engagement

- TESSA encourages stakeholder engagement throughout the process from Step 1 through 6

- Guidance on how to identify and engage the appropriate people.

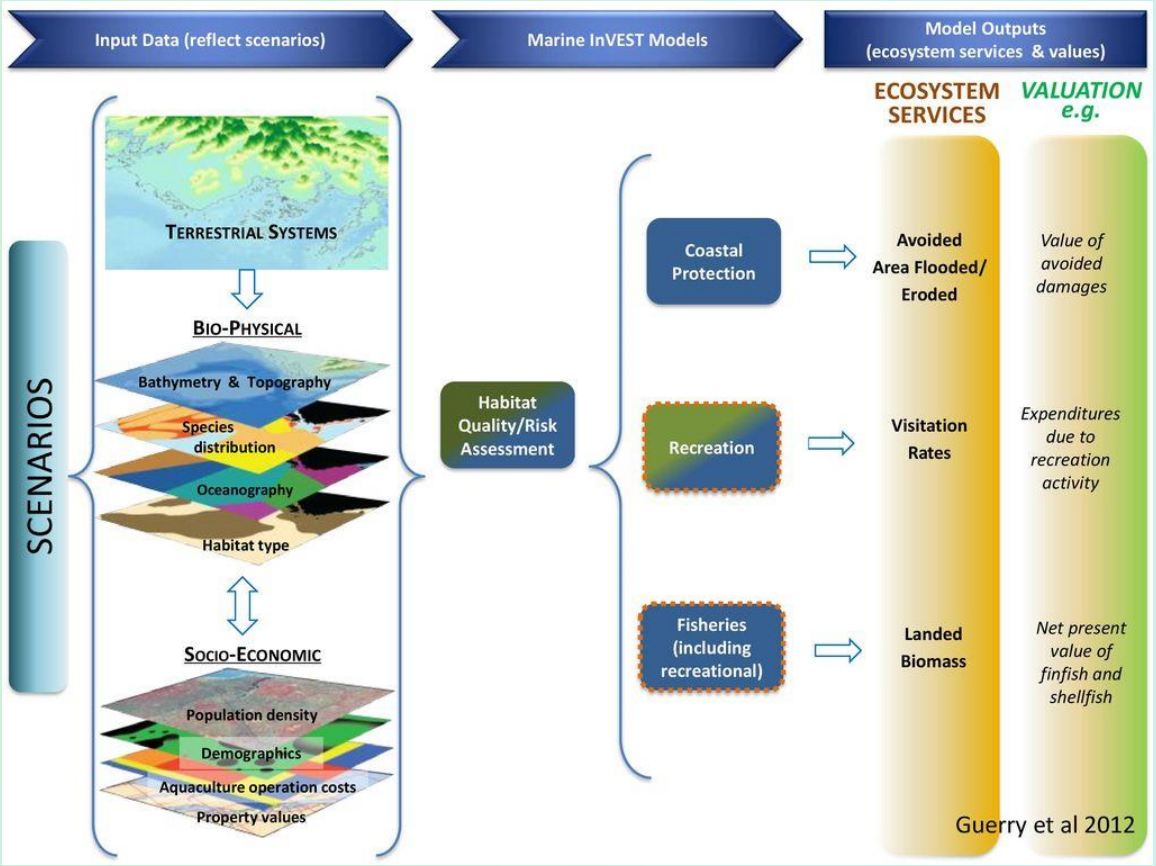
- Engagement throughout the process built strong relationships invaluable for the project(s), improves information flow, and fosters ownership.

TESSA is a flexible framework

- ✓As simple as possible without losing science
- ✓Use to level of own capacity and knowledge
- ✓Designed to be adapted to suit context
- ✓Welcome “add-ons” and other complementary methods
- ✓ Encourage feedback and further improvements through new projects

Integrated Valuation of Ecosystem Services and Tradeoffs (InVEST)

- Modular
- Based on complex equations
- Maps in, maps out
- Stand-alone app but GIS software still needed



https://naturalcapitalproject.stanford.edu/software/invest

Integrated Valuation of Ecosystem Services and Tradeoffs (InVEST)

InVEST models

Carbon | Read more »

Coastal Blue Carbon | Read more »

Coastal Vulnerability | Read more »

Crop Pollination | Read more »

Crop Production | Read more »

Habitat Quality | Read more »

Habitat Risk Assessment | Read more »

Offshore Wind Energy | Read more »

Recreation | Read more »

Reservoir Hydropower Production (Water Yield) | Read more »

Scenic Quality | Read more »

Seasonal Water Yield | Read more »

Sediment Retention | Read more »

Urban Cooling | Read more »

Urban Flood Risk Mitigation | Read more »

Urban Stormwater Retention | Read more »

Water Purification | Read more »

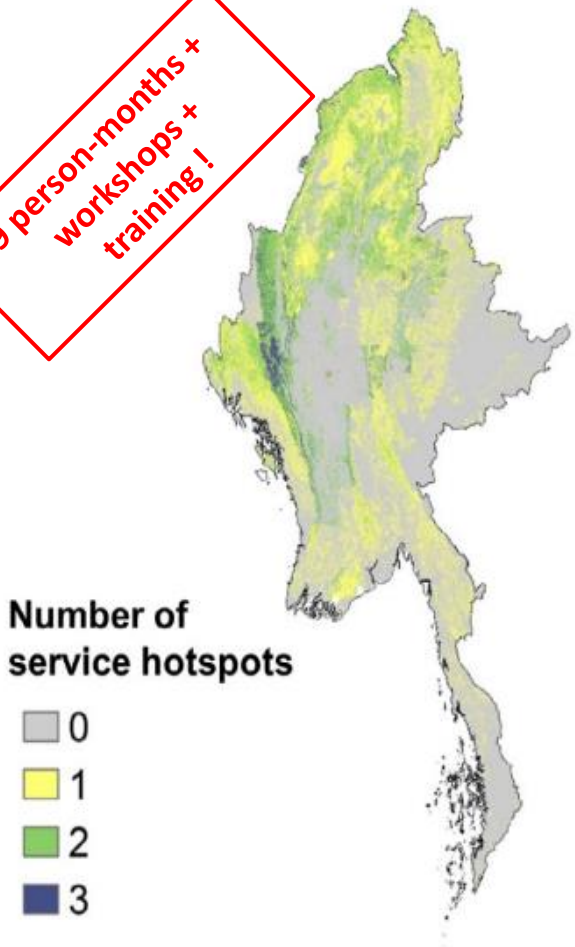
Wave Energy | Read more »

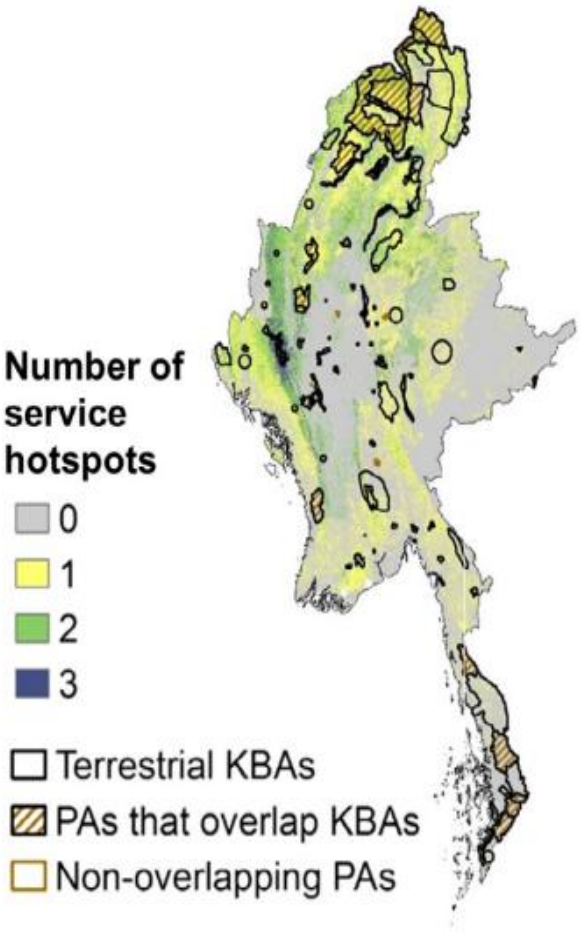
natural capital PROJECT

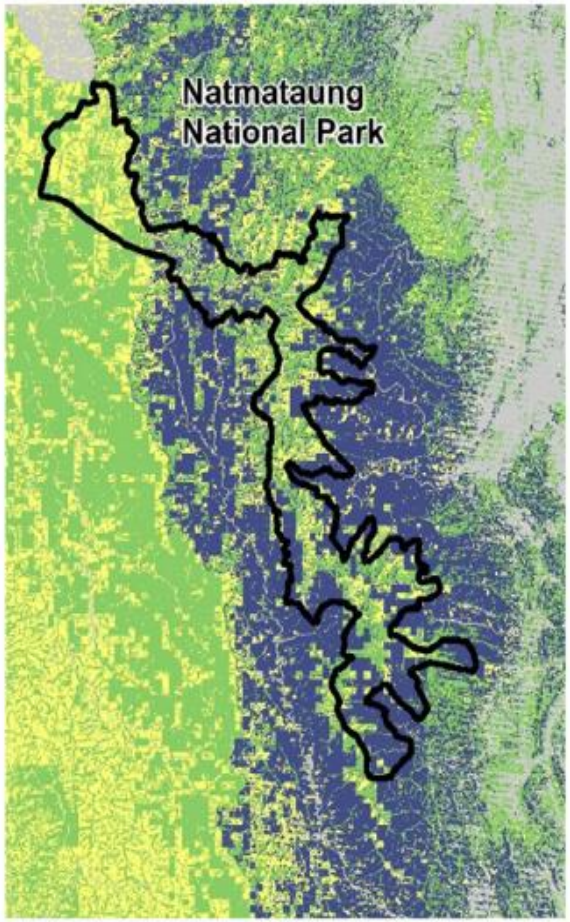
https://naturalcapitalproject.stanford.edu/software/invest

InVEST application: Overlap of ES hotspots and KBAs/PAs

9 person-months + workshops + training !







Mandle et al., 2017 in Neugarten et al., 2018.
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ANY QUESTIONS?

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