Overview

TESSA - Toolkit for Ecosystem Service Site-based Assessment - provides **accessible** guidance on **low-cost** methods for how to evaluate the benefits people receive from nature at protected areas (or other **sites**) in order to generate information that can be used to influence **decision making.**

tessa

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

Anglia Ruskin University · BirdLife International · rspb giving nature a home · Tropical Biology Association · UNEP WCMC · University of Cambridge

Who this toolkit is for

This toolkit has been designed to allow users to develop an understanding of the benefits we receive from nature, and assess their value, in order to generate information for decision making.

- **Conservation practitioners** and those with an interest in supporting biodiversity conservation through ecosystem service arguments
- Methodology is applicable to a wide range of users: forestry, fisheries, water **managers**, land use **planners**, **development organisations**, the **private sector** and many others

Who this toolkit is for

SKILLS

- Some scientific training to understand basic sampling methods, statistics, production of graphs and presentation of data
- Some training in, or understanding of, socio-economic methods
- Competent computer skills and numeracy

RESOURCES

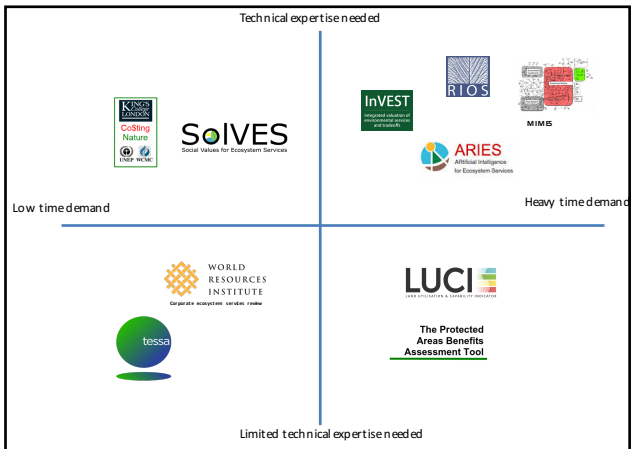
- Computer
- Internet (LAN connection)
- Field equipment
- Staff/volunteers to conduct the work

TIME

- Review of sample sites gave mean of 44 person-days per site for field work = 2-3 months of person time per site (exc. data analysis/write up)

Characteristics of the toolkit

- Low cost
- Participatory
- Rapid
- Robust
- Scientific methods
- Site-scale
- Accessible
- Comparative approach
- Relevant for decision-making



Purpose and scope

An ecosystem service only exists if someone derives benefits from it. Social, political and ecological factors all play a role. The distribution of benefits, and the impacts of change, may not be equitable. It is essential to understand who the beneficiaries are so that the full consequences of changes in ecosystem services can be assessed.

Purpose and scope

Understanding the impacts on ecosystem services of actual and potential changes at sites is important for promoting better planning decisions to support both biodiversity conservation and ecosystem service delivery.

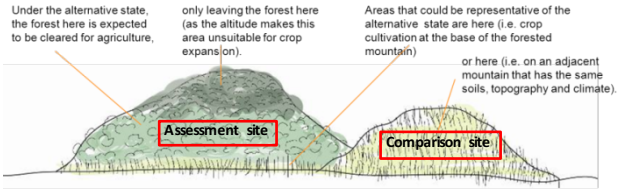
TESSA compares estimates for **alternative states** of a site (for example, before and after conversion to agriculture) so that **decision-makers** can assess the net consequences on ES of such a change, and hence the costs or benefits for human **well-being.**

Example

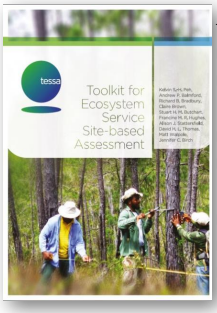
Current state – native forest

Alternative state – subsistence agriculture

Example

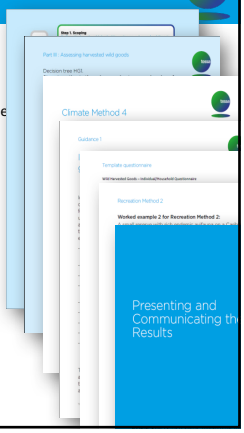


The Toolkit

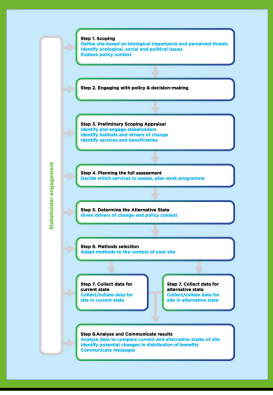


The toolkit includes:

- Step by Step guidance
- Decision trees (flow charts)
- Detailed methods
- Additional guidance and tips
- Templates
- Worked examples
- Guidance on data synthesis



A multi-stakeholder process

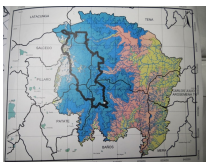


TESSA encourages stakeholder engagement throughout the process through various steps and provides guidance on how to identify and engage the appropriate people.

Engagement throughout the process improves information flow and fosters ownership

A multi-stakeholder process

Step 1. Scoping
Define site based on biological importance and perceived threats
Identify ecological, social and political issues
Explore policy context



Define objective
Identify and engage with stakeholders
Explore social, political and ecological context
Identify social, political and ecological issues

A multi-stakeholder process

Step 2. Engaging with policy & decision-making

Identify local, national and international policies driving the decisions and processes leading to land or resource use change at the site

A meeting with the Department of Forestry, Nepal

A multi-stakeholder process

Step 3. Preliminary Scoping Appraisal
Identify and engage stakeholders
Identify habitats and drivers of change
Identify services and beneficiaries

Get an overview of the site and its services from the people living and working there

Stakeholders are able to:
Identify important ecosystem services
Identify and map land use drivers
Provide information about past trends

A multi-stakeholder process

engagement

Step 4. Planning the full assessment
Decide which services to assess, plan work programme

Ecosystem services (prioritised)
- Cultivated goods
- Harvested wild goods (honey)
- Global climate regulation
- Water quality
- Nature-based tourism

Services

Step 4. Planning

Work plan

Having conducted a **Preliminary Scoping Appraisal** of ecosystem services at an assessment site, it is important to plan your work for the full assessment. Each site is unique and so you will need to use your own knowledge to determine which of the services and which of the methods provided in this toolkit will be suitable. By following the steps in **Using the toolkit**, complete this planning matrix to help plan the work.

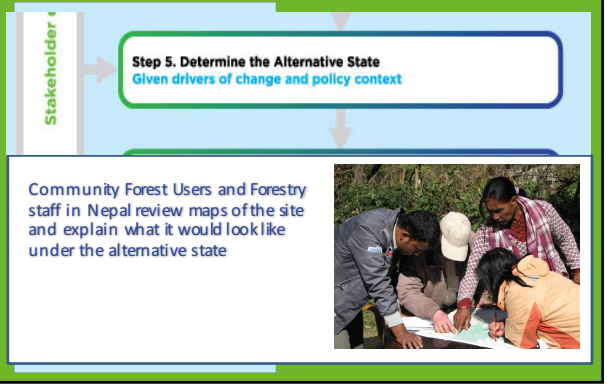
Collect all the information required with the minimum of effort in order to keep the work practical, manageable and cost-effective.

Specify the policy change or management issue being addressed		Select appropriate survey methods (refer to Methods)						
Describe the alternative state	Note the location(s) for taking measurements of the alternative state	Secondary data	Stakeholder workshop	Household questionnaire	Focus group interviews	Key informant interviews	Field work	Modelling tool
Ecosystem services to measure								
1								
2								
3								
4								
5								

Work plan

Activity timeline	1	2	3	4	5	6	7	8	9	10	11	12	

A multi-stakeholder process



A multi-stakeholder process

Step 7. Collect data for current state
Collect/collate data for site in current state

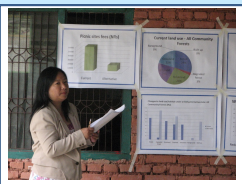
Step 7. Collect data for alternative state
Collect/collate data for site in alternative state

Community members and NGO staff help to collect data on above-ground biomass in Dominican Republic

Local women provide data on harvested wild goods in Ecuador

A multi-stakeholder process

Step 8.Analyse and Communicate results
Analyse data to compare current and alternative states of site
Identify potential changes in distribution of benefits
Communicate messages



An important step is to continue stakeholder engagement through to the end of the project (and beyond e.g. monitoring).

Invite stakeholders to provide feedback on preliminary results

Present results in a suitable format for the target audience

Cultural Ecosystem Services

Quick discussion...

What *are* CES?

What are Cultural Ecosystem Services?

"Environmental settings that give rise to the cultural goods and benefits that people obtain from ecosystems." (UK NEA 2011)

Service vs. Benefit – e.g. Carbon storage vs. climate regulation

Cultural benefits	Description	Examples
Spiritual and religious	Benefits derived from specific places, features or species within a natural landscape creating sacred, religious or spiritual inspiration, feelings and value Sites important for spiritual or religious reasons, rituals and ceremonies Religious rules and taboos Links to ancestors, gods or spirit world	Holy places Holy springs Sacred forests 'Wish-fulfilling lakes' Places where ancestral spirits are believed to reside Sacred sites used in rainmaking ceremonies Species considered sacred.
Cultural heritage	Benefits derived from or associated with natural, semi-natural or culturally important landscapes, sites or features, that provide reminders of and retain historic roots Connections to the past providing a sense of continuity and understanding of place "Memories" from ties to landscapes Values associated with physical objects, places, practices, traditions, or languages passed on from generation to generation, linked to landscapes, settings, places or culturally significant species	Special old trees Remains of traditional cultivation systems Historic artefacts e.g. historic records preserved in water bodies and soils Settings (locations or landscape features) related to traditional story-telling Historic gardens and landscapes
Aesthetic	Benefits derived from scenery, sights, sounds, smells and touch Pleasures associated with appreciation of landscape aesthetics, in particular, scenic beauty Values attributed to sense of open space, wilderness, water features and landforms Benefits associated with the 'beauty of nature' including natural, semi-natural and managed landscapes	Opportunities for aesthetic enjoyment of nature and scenic views Beautiful trees or flowers The sound of trees in the wind or birds calling The smell of fresh air, tree blossom or grown fruits The feeling of walking through tall grasses
Inspiration, creative or artistic	Benefits derived from nature as a source of inspiration for paintings, sculpture, poetry, music, weaving architecture, advertising etc. or as the basis of myth, folklore and national symbols Inspiration characterized as enrichment, experience, solace, enlightenment, fulfilment, renewal, and reflection	Artistic representations of nature Use of natural motifs or artefacts in art and folklore Aboriginal rock art National emblems inspired by plants and animals Music inspired by the sound of water babbling in a stream or bird song

Sense of place	Benefits derived from "sense of place" associated with environmental setting or feature of the natural environment that provides a sense of belonging relations, or connectedness Feeling "at home" creating a sense of fulfilment, meaning, ownership, empowerment and commitment and contributing to the need for protection and affection	Seeing a familiar landmark or feature - a mountain, savannah, a spedal tree, an endemic animal or plant Experiencing a sound or smell associated with a particular natural or semi-natural setting or feature Unique features in the landscape that represent 'home'
Identity	Benefits derived from cultural linkages between humans and the environment A sense of identity achieved through interactions with nature that give a sense of who and what someone is, within family, community, universe A sense of self experienced through interactions with environmental settings and species Interactions with nature that shape identity and vice versa	A fisherman's sense of self or identity gained from the act of fishing and being a 'fisherma Cultural identity associated with the presence of certain habitats or species The opportunity to conduct cultural practices activities important to sense of identity
Social relations / community benefits	Benefits derived from types and quality of social relations and interactions in environmental settings Settings, features or species that facilitate positive social interactions between individuals, communities and groups Places for social groups to gather Opportunities for group hunting or collecting activities which create family or social cohesion and group sharing Contributions to wellbeing from social interaction Promoting social networks Fostering social capital and enhance social wellbeing	A large tree providing shade for community meetings Festivals held to celebrate an ecosystem or landscape feature 'Greenery' that leads to greater use of common spaces for face to face social contact Certain plants or animals that have specific roles in social and activities Social relations in fishing communities differ in many respects from those nomadic herding or agricultural societies
Existence / bequest values	Some people value knowing that particular natural areas, wild species, special natural feature exist irrespective of their own use, or the use of others - they just value knowing they exist and / or are protected or preserved for the enjoyment of future generations.	Value placed on knowing that tigers exist in the wild irrespective of any plans to visit them. Benefits received from knowing that a species is protected for the next generation to enjoy.

Education and ecological knowledge	Benefits derived from formal and informal knowledge systems developed by different cultures Subject matter for education, knowledge and research Meeting the need for understanding Opportunities for outdoor learning where observation, experience and experimentation leads to increased ecological knowledge and enhanced connectedness to nature Positive relationships with nature based on experience and knowledge Motivating more sustainable ecosystem management Enhanced knowledge for other disciplines through improved cognitive outcomes, increased enjoyment of education, better behaviour and improved working conditions	Ecosystems that provide information for cognitive development Increased understanding about species and ecosystem through visits to nature areas Direct observation and experience of nature, deepening understanding Traditional ecological knowledge gained through interactions with nature Traditional knowledge of biodiversity which lies in the memory of local and indigenous communities and is transmitted through daily practices, stories, songs and dance
Health - mental and physical	Benefits derived from environmental settings that have positive impacts on a wide range of health outcomes Places where people can undertake physical activity and interact with nature enabling the restoration, maintenance, and / or development of emotional, mental and physical health and well-being Viewing or being in an environmental setting that contributes to physical, emotional and mental health and wellbeing	Contact with nature that improves health by providing a sense of calm and tranquillity Positive changes in mood experienced through walking in natural environments The presence of attractive nature, that stimulates increased levels of physical activity leading to improved physical health Cultural ties to a landscape that strengthen self-esteem Viewing nature improves emotional wellbeing
Leisure, recreation and eco-tourism	Although TESSA considers nature-based recreation in an earlier module, there is a focus on economic valuation which may not be appropriate – for example, if visitors are not charged to use the site. Therefore it may be appropriate to apply this module.	Hiking Bird watching Dog walking Football fields Boating Diving Viewing iconic / rare species
NB: Leisure, recreation and eco-tourism services are dealt with in another module in TESSA		

Cultural Ecosystem Services

Quick discussion…

What *are* CES?

What are some of the considerations & challenges in defining and assessing CES…

…particularly with stakeholder engagement in mind?

What are some of the considerations & challenges in defining and assessing CES?

- *Differentiation between beneficiaries*
- *Sustainability of use*
- *Issues of trust and understanding*
- *Bundling ecosystem services*
- *Working with people*

- *Defining the alternative state…*

TESSA Cultural Ecosystem Services Module:

- Developed under OPERAs project
- Assessing benefits derived from cultural ecosystem services
- Note: nature-based tourism/recreation dealt with in separate module (where economic value can be assigned)

OPERAs

Purpose of the CES module

1. To identify and characterise cultural ecosystem services benefits provided by the assessment site
2. To map cultural ecosystem services benefits provided by the assessment site (where appropriate)
3. To assess cultural ecosystem services benefits provided by the assessment site
4. To assess potential changes in cultural ecosystem services benefits due to changes between current and alternative states of the site

Overview

Key Tasks

1. Identify, characterise and describe cultural ecosystem services benefits
2. Specify the location of cultural ecosystem services benefits
3. Assess the change in cultural ecosystem services benefits between current state and alternative state

Overview

Outputs

- A list of the cultural ecosystem services benefits that the site provides.
- Descriptions of these benefits.
- A map of the physical location of important cultural ecosystem services giving rise to these benefits (where appropriate and possible).
- Assessment of the importance of these benefits.
- An assessment of how the cultural ecosystem services benefits will change under an 'alternative land use'

Overview

Skills the assessor needs:

- Good understanding of cultural ecosystem services
- The ability to interpret evidence of cultural ecosystem services benefits,
- The ability to translate relevant core concepts into local language
- Good workshop/focus group facilitation skills
- Good awareness of cultural and ethical issues
- The ability to be responsive and flexible
- A commitment to and interest in understanding the benefits provided by cultural ecosystem services and their relation to well-being

Approach

1. Preparation
2. Identify, characterise and describe cultural ecosystem services benefits
3. Map cultural ecosystem services benefits
4. Assess cultural ecosystem services benefits
5. Compare the importance of cultural ecosystem services benefits between the current state and the alternative state

CES Assessment Methods

Exercise (30 mins):

- Work in pairs (6 pairs in total)
- Each pair takes one method
  - Read through the method
  - Have you used/would you use this method?
  - When would it/would it not be appropriate?
  - Any special considerations for stakeholder engagement?
- Discuss with the rest of your table. Summarise the method, and your thoughts. Have they got anything to add?
- Report back to the group – summary of each method, pros, cons and considerations…

Communicating the results

1. Why communicate the results to stakeholders?
2. What considerations might there be in this?

More information and next steps

More information at
www.tinyurl.com/tessatoolkit
- Webinar: http://youtu.be/Dn2Vd0HCprc
- E-poster (Touch screen 1)
- TESSA Sessions (Protected Planet Pavilion)

Tue 11.30 Water services
Wed 09.30 Africa case studies

- Stream 4 Presentation : Tues 18th 08:30-10:00 Hall 3B2

TESSA is an evolving resource (subject to funding)

- Training workshops
- Content development (V.2.0 in 2016)
- Data-banking
- New partnerships
- New audiences (e.g. 'TESSA for Business')

Version 1.2 available to download: http://tessa.tools