Social-Ecological Assessments – examples of processes, tools, indicators and metrics

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1. Resilience thinking and Resilience Assessments

Biodiversity and its governance can provide resilience to ecosystems and the flow of ecosystem services. Resilience is here defined as the capacity of a system, be it an individual, a forest, a city or an economy, to deal with change and continue to develop. When working with resilience it is important to understand the concept of social-ecological systems. There are no natural systems without people, nor social systems without nature. Social and ecological systems are truly interdependent and constantly co-evolving. Recently, resilience scholars have identified seven principles for building resilience, for more information see Box 1. Below.

Box 1. Applying resilience thinking (From Biggs et al., 2012; Biggs et al., 2015)

**Principle one: Maintain diversity and redundancy**
 Systems are made up by many different components (they can be species, land use patches or sources of knowledge), and systems with many components are generally more resilient than those with few components. Diversity makes redundancy more likely, i.e. that the system contains components that can compensate for the loss or failure of others.

**Principle two: Manage connectivity**
 Connectivity between components is a double-edged. While well-connected systems can recover from disturbances more quickly, overly connected systems facilitate rapid spread of disturbances. Intermediate connectivity with semi-autonomous but internally well-connected subsystems may be a workable compromise.

**Principle three: Manage slow variables and feedbacks**
 Environmental quality, e.g. drinking water of good quality, is often linked to slowly changing variables. Although the variables themselves change slowly, the system response to change can be sudden and difficult to reverse. The connections between variables are called feedbacks and should be understood as the two-way ‘connectors either reinforcing (positive feedback) or dampen (negative feedback) system change.

**Principle four: Foster complex adaptive systems thinking**
 A complex adaptive systems (CAS) approach means accepting unpredictability and uncertainty, and acknowledging a multitude of perspectives. In practice this could for example mean keeping things dynamically fluctuating within specified boundaries rather than at fixed levels.

**Principle five: Encourage learning**
 Coping with change or navigating transitions rely on constant learning and re-evaluation of existing knowledge. Encouraging learning has to do both with knowledge itself and its distribution.

**Principle six: Broaden participation**
 Broad and well-functioning participation is beneficial for several reasons. An informed and well-functioning group have the potential to create a shared understanding and build trust – both fundamentally important for collective action.

**Principle seven: Promote polycentric governance**
 Polycentricity, or when multiple governing bodies interact to make and enforce rules within a specific policy arena or location, is considered to be one of the best ways to achieve collective action. However, involving a wide range of actors means striking a balance between openness, accountability and mandates for decision-making.

Resilience assessment workbook

The Resilience alliance has developed a Resilience assessment workbook. In the Resilience assessment workbook, there are five main stages of the assessment framework: 1. Describing
the system, assessing resilience of what to what, identifying key issues, and scales above and below; 2. Understanding system dynamics such as thresholds and transitions; 3. Probing system interactions, such as cross-scale interactions; and 4. Assessing system governance, such as institutions, and social networks; and finally 5. Acting on the assessment. The process is iterative.

Literature:

- Social-ecological Inventory Workbook - Supplement to the workbook for Practitioners

2. Community and Participatory Assessments

Bio-cultural Resilience Tool https://bioculturalresilience.wordpress.com/about/founding-partners/


Participatory mapping and management partnership with links to many initiatives on mapping, www.pmmpartnership.com

Eco-cultural mapping, ABN website and GAIA etc. http://www.gaiafoundation.org/

Maps for traditional knowledge - Technical Centre for Agricultural and Rural Development (CTA)

Multiple Evidence Base approach for equity across knowledge systems http://swed.bio/stories/a-multiple-evidence-base-approach-for-equity-across-knowledge-systems/

3. The Millennium Ecosystem Assessment (MA), and Sub-global Assessments

The Millennium Ecosystem Assessment was a report ordered by UN and involved more than 1,360 experts worldwide. Their findings provide a state-of-the-art scientific appraisal of the condition and trends in the world’s ecosystems and the services they provide and options for sustaining ecosystem services.

The Millennium Ecosystem Assessment or MA (2005) defined an ecosystem assessment as: "A social process through which the findings of science concerning the causes of ecosystem change, their consequences for human well-being, and management and policy options are brought to bear on the needs of decision-makers”. See fig 1. regarding the Ecosystem Assessment Conceptual Framework.

Conceptual frameworks can provide focus on key issues and relationships in the social-ecological system in assessments, and has to be adapted to local circumstances. Fig 2. Show a local adaptation of the MA conceptual framework for the Peru sub-global assessment.

Fig 2. Local adaptation of the MA Conceptual Framework for the Peru sub-global assessment. Source: MA, 2005
The 'Manual for Assessment Practitioners' (Ash et al., 2010)¹, a how-to-do-guide for undertaking ecosystem assessments, made the methods used in the MA and its associated sub-global assessments accessible. According to the manual an ecosystem assessment provides the connection between environmental issues and people, and an assessment of ecosystem services needs to consider both the ecosystems from which the services are derived and also the people who depend on and are affected by changes in the supply of services, thereby connecting environmental and development sectors. The Manual describes that getting the process right, from the early stages of design through to the communication of findings, is essential in order to have an impact, and that when describing and valuing the benefits of ecosystem services, decision makers can better understand how their actions might change these services, consider the trade-offs among options, and choose policies that sustain the appropriate mix of services. The Manual presents a framework and assessment process that has three key stages that are generally sequential but usually overlapping and iterative:

1. The exploratory stage,

2. The design stage – organizers need to consider governance of the process, conceptual frameworks, how to link the different scales to be addressed, how to bridge different knowledge systems, capacity-building needs, and how to evaluate the process, and

3. The implementation of the assessment workplan – that assesses conditions and trends in ecosystems and their services, scenarios for the future, and past and current responses taken to enhance the contribution of ecosystems to human well-being.

**Sub-Global Assessment Network**²

In 2007, the United Nations Environment Programme (UNEP), in collaboration with a consortium of partners, convened a network of sub-global assessments (SGAs) in an effort to provide ongoing support to SGAs catalysed either during the course of the Millennium Ecosystem Assessment. Since 2007, there has been a significant increase in the number of sub-global assessment initiatives emerging around the world, and the need for greater emphasis to be placed on building the capacity of ecosystem assessment practitioners to undertake SGAs has been made clear. The SGA Network, currently hosted by a Secretariat which operates through a joint arrangement between the UNEP World Conservation Monitoring Centre (UNEP-WCMC) and The Cropper Foundation (TCF). The SGA Network also aims to support global processes such as the (IPBES), by providing a network of assessment practitioners and carrying out a range of capacity building activities.

The Sub-Global Assessment Network seeks to create a common platform for practitioners (individuals and organizations) involved in ecosystem assessments at the sub-global levels (regional, sub-regional, national, sub-national) with the intention of:

1. Building capacity to undertake and use assessments. This will be achieved by:

   - Offering opportunities for training in specific tools and approaches related to ecosystem assessments (e.g. training workshops on valuation, scenarios, mainstreaming etc.);
   - Capturing, synthesizing and disseminating examples of best practices and lessons learnt in undertaking ecosystem assessments;
   - Developing e-learning tools which are of interest to ecosystem assessment practitioners;
   - Encouraging and supporting ongoing exchanges between and amongst SGAs, either through virtual or face-to-face means (e.g. sharing of expertise);
   - Establishing and maintaining a website devoted to the SGA Network which will allow access to relevant materials and information;

² [http://www.ecosystemassessments.net/](http://www.ecosystemassessments.net/)
• Linking SGAs to the scientific community and to relevant information and data sources which are useful for undertaking ecosystem assessment work.

2. Supporting relevant global processes such as IPBES and MEA frameworks/conventions through achievement of the objective listed above.

Literature:
• Ash et al. 2010, taken from Undertaking Ecosystem Assessment workbooks from the SGA Network, 2012, http://www.ecosystemassessments.net/about/ecosystem-assessments.html
• Sub-Global Assessment Network http://www.ecosystemassessments.net/

4. Ecosystem Services Assessment

_Ecosystem and landscape diversity_ provide the basis for a high variety of habitats for species and livelihoods for people, and opportunities for different livelihood strategies in time and space (that can be gender, age and income specific). The ecosystem diversity supplies important ecosystem services to people. These services include plant pollination, pest control by natural predators, watershed protection and erosion control, maintenance of soil fertility and pasture regeneration, breakdown of waste and pollutants³. Figure 4 illustrates how multi-functional ecosystems provide bundles of services. These “flower-bundles-figures” can also be used to illustrate trade-offs between different assets or ecosystem services, a practical tool that can be used also in workshops with actors in the landscape.

![Fig 8. Multifunctional landscapes and bundles of ecosystem services.](image-url)

_World Resources Institute WRI_

WRI has developed tools for ecosystem services assessment, such as the ones described below. _The Ecosystem Services Review for Impact Assessment (ESR for IA)_⁴ can be used for two purposes. First, it identifies measures to mitigate project impacts on the benefits provided by ecosystems. Second, it identifies measures to manage operational dependencies on ecosystems. These goals are reflected in the ESR for IA’s four outputs:

³ CBD Biodiversity for Poverty Alleviation and Development
The Six Steps of the Ecosystem Services Review for Impact Assessment are:

Scoping stage
Step 1 – Identify ecosystem services relevant to project impact
Baseline and impact analysis stage
Step 2 – Prioritize relevant ecosystem services according to project impact
Step 3 – Define the scope and information needs of the ecosystem service impact assessment
Step 4 – Establish the baseline for priority ecosystem services
Step 5 – Assess project impacts on priority ecosystem services
Mitigation stage
Step 6 – Mitigate project impacts on priority ecosystem services.

Other tools related to Environmental assessment and Ecosystem services Assessment are the OECD DAC SEA and Ecosystem Services Advisory Note6. This Advisory Note focuses on how to integrate the consideration of ecosystem services into Strategic Environmental Assessment SEAs. SEA approaches can help to prevent overlooking ecosystems services in the formulation and implementation of a policy, plan, or programme.

The Corporate Ecosystem Services Review (ESR)7 - Guidelines for Identifying Business Risks & Opportunities Arising from Ecosystem Change. This report is a structured methodology that helps companies understand how they impact ecosystems and the services they provide and also depend on them. Businesses can either conduct an Ecosystem Services Review as a stand-alone process or integrate it into their existing environmental management systems. It concludes by highlighting a number of resources managers can use when conducting an ESR, including a “dependence and impact assessment” spreadsheet, scientific reports, economic valuation approaches, and other issue-specific tools. Complementary tools and guidance now exist to help companies more fully assess business risks and opportunities emerging from ecosystem change. For example, in 2011 the World Business Council for Sustainable Development released the Guide to Corporate Ecosystem Valuation (CEV).

The ESR methodology consists of five steps (Figure 8):

1. Select the scope. Choose the “scope” or boundary within which to conduct the ESR. Candidates include a business unit, product, market, corporate landholdings, infrastructure project, major supplier, or major customer segment, among others.

2. Identify priority ecosystem services. Systematically evaluate the company’s dependence and impact on more than 20 ecosystem services. Determine which of these are “priority” services—the ones most relevant to corporate performance.

3. Analyse trends in priority services. Research and evaluate the condition and trends in the priority ecosystem services, as well as the drivers of these trends.

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5 http://www.wri.org/publication/weaving-ecosystem-services-into-impact-assessment
6 http://www.seataskteam.net/guidance.php
4. Identify business risks and opportunities. Identify and evaluate the business risks and opportunities that might arise due to trends in the priority ecosystem services.

5. Develop strategies. Outline strategies for managing the risks and opportunities. As Figure 1 illustrates, the ESR bridges ecosystem and business considerations by starting with an evaluation of a company’s interaction with ecosystems and finishing with an assessment of implications for business performance.

The Ecosystem Services Guide For Decision Makers. WRI and its partners have produced a guide for the public sector on how to take ecosystem services into account in economic and social strategies. The guide provides examples of how the success of projects, plans and policies can benefit from incorporating ecosystem services. It introduces various methods to link ecosystems and development, including an ecosystem services framework, ecosystem service prioritization, trends analyses, ecosystem service mapping, economic valuation, scenario planning, and a portfolio of policy options targeted at sustaining ecosystem services, see fig 9.

The guide can help answer the following questions:

- How can an ecosystem services framework be used to organize a decision-making process?
- What ecosystem services are supplied by nature?
- Which ecosystem services are most important for a particular development goal?
- What is known about the condition and trends of these services?
- How can their value be communicated?
- What risks and opportunities emerge as a result of changes to ecosystem services?
- Which services should a city, county, province, or country invest in restoring or sustaining?
- What policies can help sustain ecosystem services?

![Fig 9. Overview of Steps in Assessing Risks and Opportunities Related to Ecosystem Service. Source: The Ecosystem Services Guide For Decision Makers, WRI.](image)

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9 [http://www.wri.org/publication/ecosystem-services](http://www.wri.org/publication/ecosystem-services);
INVEST

Another tool for Ecosystem services assessment is InVEST (Integrated Valuation of Ecosystem Services & Tradeoffs)

Literature:

- The Ecosystem Services Guide For Decision Makers http://www.wri.org/publication/ecosystem-services
- For InVEST, See http://ncp-dev.stanford.edu/~dataportal/invest-releases/documentation/2_2_0/

5. MAES and ESMERALDA

DG Environment has set up a Working Group for Mapping and Assessment of Ecosystems and their Services (MAES) to implement especially EU Biodiversity Strategy to 2020 Target 2, Action 5. Action 5 on Mapping and Assessment of Ecosystems and their Services (MAES) under target two of the EU 2020 Biodiversity Strategy foresees that: "Member States, with the assistance of the Commission, will map and assess the state of ecosystems and their services in their national territory by 2014, assess the economic value of such services, and promote the integration of these values into accounting and reporting systems at EU and national level by 2020".

ESMERALDA project (funded by Horizon 2020) is aimed to support EU Member States in MAES process. "ESMERALDA (Enhancing ecoSysteM sERvices mApping for poLicy and Decision mAking) project (2015-2018) aims to deliver a flexible methodology to provide the building blocks for pan-European and regional assessments. The work will ensure the timely delivery to EU member states in relation to Action 5 of the BD Strategy, supporting the needs of assessments in relation to the requirements for planning, agriculture, climate, water and nature policy. This methodology will build on existing ES projects and databases (e.g. MAES, OpenNESS, OPERAs, national studies), the Millennium Assessment (MA) and TEEB. ESMERALDA will identify relevant stakeholders and take stock of their requirements at EU, national and regional levels."

Literature:

- EEA: MAES http://biodiversity.europa.eu/maes
- ESMERALDA project: http://www.esmeralda-project.eu/

6. TEEB - The Economics of Ecosystems and Biodiversity

The Economics of Ecosystems and Biodiversity (TEEB) is a global initiative focused on drawing attention to the economic benefits of biodiversity. Its objective is to highlight the growing cost of
biodiversity loss and ecosystem degradation. TEEB presents an approach that can help decision-makers recognize, demonstrate and capture the values of ecosystems & biodiversity, including how to incorporate these values into decision-making.

The TEEB Approach - The TEEB study follows a tiered approach in analysing and structuring valuation guided by three core principles:

1. Recognizing value in ecosystems, landscapes, species and other aspects of biodiversity is a feature of all human societies and communities and is sometimes sufficient to ensure conservation and sustainable use. For example the existence of sacred groves in some cultures has helped to protect natural areas and the biodiversity they contain.

2. Demonstrating value in economic terms can be useful for policy makers and others such as business in reaching decisions that consider the full costs and benefits of an ecosystem rather than just those costs or values that enter the markets in the form of private goods. An example would include calculating the costs and benefits of conserving the ecosystem services provided by wetlands in controlling floods compared to building flood defences.

3. Capturing value involves the introduction of mechanisms that incorporate the values of ecosystems into decision-making through incentives and price signals. This can include payments for ecosystem services, reforming environmentally harmful subsidies or introducing tax breaks for conservation.

The TEEB methodology - The TEEB project has produced several reports targeted to different context. Several of the reports include a step-wise approach for integrating the value of ecosystem services into decision-making, such as the examples below.

TEEB methodology includes six steps that can be summarized by the following questions:

• What does nature provide us at, what ecosystem services are most important?
• How valuable is this?
• How do we evaluate ecosystem services or value them in monetary terms?
• What ecosystem services are threatened and who is affected by changes in services?
• How might those affected by these changes alter their behaviour?
• What policy actions do we have?

**TEEB for countries**\(^{11}\). This TEEB Manual provides both technical and operational guidance on how countries may conduct a TEEB Country Study. It outlines the various steps that may be taken to initiate and implement a country study, communicate its findings, and implement the recommendations of the study.

**STEP 1:** Refine the objectives of a TEEB country study by specifying and agreeing on the key policy issues with stakeholders

**STEP 2:** Identify the most relevant ecosystem services

**STEP 3:** Define information needs and select appropriate methods

**STEP 4:** Assess and value ecosystem services

**STEP 5:** Identify and outline the pros and cons of policy options, including distributional impacts

**STEP 6:** Review, refine and report

**TEEB for cities**\(^{12}\). This builds upon the TEEB for local and regional decision makers but with an urban focus. This is a good report to start with as it is freely available and quite short. (The final version of the TEEB for local and regional decision makers is not freely available but the draft version is. Both can be found here.)

Briefly, the steps are as follows:

**Step 1:** Specify and agree on the problem or policy issue with stakeholders

**Step 2:** Identify which ecosystem services are most relevant

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Step 3: Determine what information is needed and select assessment methods
Step 4: Assess (future changes in) ecosystem services
Step 5: Identify and assess management/policy options
Step 6: Assess the impact of the policy options on the range of stakeholders

Literature:
- TEEB - The Economics of Ecosystems and Biodiversity http://www.teebweb.org

Case of ecosystem valuation for decision makers
The Swedish Government made an inquiry "Making the value of ecosystem services visible"\textsuperscript{13}, Swedish Government Official Report 2013:68. The Inquiry was instructed to analyse actions and suggest methods and measures to increase the visibility of the value ecosystem services and to improve the knowledge base of the societal value of ecosystem services, as well as to propose ways that will increase the level of importance of biodiversity and to clarify the values of ecosystem services so that they become generally well known and thus can become integrated in economic positions and other decisions in the community where this is relevant and reasonable.

Below is the conceptual framework from the inquiry, based on the TEEB study and earlier work from World Resources Institute and other approaches.

\textsuperscript{13} http://www.government.se/content/1/c6/22/61/92/7987db30.pdf
Fig 8. Making the value of ecosystem services visible in decision-making with the help of ecosystem service assessments. As ecosystem services are produced in interaction between humans and nature, actors that use and affect (and often have knowledge of) the ecosystem services should participate. Illustration: J Lokrantz/Azote. From: Making the value of ecosystem services visible, Summary of SOU 2013:68, Stockholm 2013

Literature:
- Making the value of ecosystem services visible, Summary of SOU 2013:68, Stockholm 2013

7. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, IPBES

Out of Millennium Ecosystem Assessment and other international processes the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services IPBES\(^{14}\) was developed, established in April 2012, as an independent intergovernmental body open to all member countries of the United Nations. IPBES goal is strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development. IPBES functional approach is to strengthen the science-policy interface at all levels through:

- identifying scientific information needs and catalysing knowledge generation
- implementing and promoting assessments of various geographic and thematic scope
- promoting the accessibility and further development of identified policy support tools
- addressing identified capacity building needs through integration and by catalysing financial support.

Also IPBES has developed a conceptual framework see fig 9.

\(^{14}\) http://www.ipbes.net/about-ipbes.html
Under IPBES tools will be developed such as Policy support tools and methodologies for scenario analysis and modelling of biodiversity and ecosystem services based on a fast-track assessment and a guide and also Policy support tools and methodologies regarding the diverse conceptualization of values of biodiversity and nature’s benefits to people including ecosystem services based on an assessment and a guide.

Literature:
- Intergovernmental Science - Policy Platform on Biodiversity and Ecosystem Services, IPBES http://ipbes.net/

8. Programme on Ecosystem Change and Society (PECS) and SAPECS (South African PECS)

The Program on Ecosystem Change and Society (PECS) is a new 10-year initiative jointly sponsored by ICSU and UNESCO. PECS aims to integrate research on the stewardship of social-ecological systems, the services they generate, and the relationships among natural capital, human wellbeing, livelihoods, inequality and poverty. The PECS secretariat is located at SRC, who were a key actor in the development of PECS, as a response to the aftermath of the MA.

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15 Report of the second session of the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, IPBES/2/17, 9 January 2014
PECS research will be explicitly transdisciplinary and intersectoral, and will thereby break down barriers that have impeded understanding of social-ecological transformations. PECS aims to understand interactions across scales, such as fast and slow drivers of social and ecological change, thresholds, traps and time lags, in order to identify appropriate operational scales. A comparative, place-based approach, international in scope, is at the core of PECS research. Currently, SRC are leading PECS case study areas, such as: Southern African PECS (www.sapecs.org), and Norrström basin around Stockholm, Sweden (SEEN project).

SAPECS consists of a network of researchers, both from within the region and abroad, actively engaged in researching social-ecological systems in a range of case studies at various scales in the southern African region. This research is conducted within a shared conceptual framework and focuses on a common set of core themes.

![SAPECS conceptual framework](http://www.sapecs.org/)

**Fig 10. SAPECS conceptual framework. Source: http://www.sapecs.org/**

**Literature:**
- http://www.stockholmresilience.org/21/research/research-programmes/pecs.html
- http://www.sapecs.org/about/

**9. Related tools and approaches**

**Ecosystem Approach**

Under the CBD there are some crucial decisions that support a land- and seascape perspective on ecosystem management. The most important one being maybe the Ecosystem approach, see box 2. The ecosystem approach requires adaptive management to deal with the complex and dynamic nature of ecosystems. As discussed before, ecosystem processes are often non-linear, and the outcome of such processes often shows time-lags. The implementation of the Ecosystem Approach could demand new arrangements for organizing institutions who should take part in decision making to be able to make compromises. It operates under the land- or seascape perspective. The human rural landscape contain a mixture of agricultural fields, forest and grazing areas, where also forest patches contain wild foods and provides the fields with pollinators.
Box 2. The ecosystem approach

In applying the 12 principles of the ecosystem approach below, the following five points are proposed as operational guidance:
1. Focus on the functional relationships and processes within ecosystems
2. Enhance benefit-sharing
3. Use adaptive management practices
4. Carry out management actions at the scale appropriate for the issue being addressed, with decentralization to lowest level, as appropriate
5. Ensure intersectoral cooperation

The 12 principles of the ecosystem approach
Principle 1: The objectives of management of land, water and living resources are a matter of societal choice.
Principle 2: Management should be decentralized to the lowest appropriate level.
Principle 3: Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.
Principle 4: Recognizing potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context. Any such ecosystem-management programme should:
(a) Reduce those market distortions that adversely affect biological diversity;
(b) Align incentives to promote biodiversity conservation and sustainable use;
(c) Internalize costs and benefits in the given ecosystem to the extent feasible.
Principle 5: Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.
Principle 6: Ecosystems must be managed within the limits of their functioning.
Principle 7: The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.
Principle 8: Recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the long term.
Principle 9: Management must recognize that change is inevitable.
Principle 10: The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.
Principle 11: The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.
Principle 12: The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

Ref: http://www.cbd.int/ecosystem/

Rapid Rural Appraisal (RRA) Participatory rural appraisal (PRA)(Chambers, 1997)16

Rapid Rural Appraisal consists of a series of techniques included:

- Review of secondary sources, including aerial photos, even brief aerial observation
- Direct observation, foot transects, familiarization, participation in activities
- Interviews with key informants, group interviews, workshops
- Mapping, diagramming
- Biographies, local histories, case studies
- Ranking and scoring
- Time lines
- Short simple questionnaires, towards end of process
- Rapid report writing in the field.

Participatory rural appraisal is an approach used by non-governmental organizations (NGOs) and other agencies involved in international development. The approach aims to incorporate the knowledge and opinions of rural people in the planning and management of development projects and programmes. Hundreds of participatory techniques and tools have been described in a variety of books and newsletters, or taught at training courses around the world. These techniques can be divided into four categories:

• Group dynamics, e.g. learning contracts, role reversals, feedback sessions
• Sampling, e.g. transect walks, wealth ranking, social mapping
• Interviewing, e.g. focus group discussions, semi-structured interviews, triangulation
• Visualization e.g. Venn diagrams, matrix scoring, timelines.

The Sustainable Livelihoods Approach (SLA)\textsuperscript{17}. The sustainable livelihoods approach is a way to improve understanding of the livelihoods of poor people. It draws on the main factors that affect poor people’s livelihoods and the typical relationships between these factors. It can be used in planning new development activities and in assessing the contribution that existing activities have made to sustaining livelihoods. The two key components of the SLA are:

- a framework that helps in understanding the complexities of poverty
- a set of principles to guide action to address and overcome poverty

The guiding principles are:

- Be people-centred. SLA begins by analysing people’s livelihoods and how they change over time. The people themselves actively participate throughout the project cycle.
- Be holistic. SLA acknowledges that people adopt many strategies to secure their livelihoods, and that many actors are involved; for example the private sector, ministries, community-based organizations and international organizations.
- Be dynamic. SLA seeks to understand the dynamic nature of livelihoods and what influences them.
- Build on strengths. SLA builds on people’s perceived strengths and opportunities rather than focusing on their problems and needs. It supports existing livelihood strategies.
- Promote micro-macro links. SLA examines the influence of policies and institutions on livelihood options and highlights the need for policies to be informed by insights from the local level and by the priorities of the poor.
- Encourage broad partnerships. SLA counts on broad partnerships drawing on both the public and private sectors.
- Aim for sustainability. Sustainability is important if poverty reduction is to be lasting.

\textsuperscript{17} http://www.ifad.org/sla/
Fig 11. Main components of Sustainable Livelihoods Approach and how they are linked. It does not work in a linear manner and does not attempt to provide an exact representation of reality. Rather, it seeks to provide a way of thinking about the livelihoods of poor people that will stimulate debate and reflection about the many factors that affect livelihoods, the way they interact and their relative importance within a particular setting. Source: IFAD, http://www.ifad.org/sla/

Power Analysis. Power analysis can help understand underlying structural factors impeding poverty reduction as well as incentives and disincentives for pro-poor development.

Checklist for doing Power Analysis:
Review existing power and political economy studies
Define purpose of power analysis:
- involve others in deciding the purpose
- what are your needs and entry points?
- what do you need to know about context?
- what are the core issues and questions?
- what actors and relationships do you need to understand?
- what forms of power need to be considered?
- what can be learned from previous power studies and ToRs?
Define the scope (country analysis/sector/region/issue)
Identify concepts and methods for power analysis
Define TORs, involving others
Procure consultants
Clarify links to cooperation strategy/policy dialogue
Decide on single study or multiple reports/issue briefs
Clarify publication and dissemination of outputs
Identify actors and clarify roles of those involved
(order of steps can be adapted)

Litterature:

10. Indicators and metrics

Aichi Targets Passport - 2013 Edition

The Aichi Targets Passport - a publication of the Biodiversity Indicators Partnership, BIP, provides annual updates for the global biodiversity indicators brought together by the BIP to monitor progress towards the Convention on biodiversity’s Strategic Plan for Biodiversity 2011-2020 and the underlying Aichi Biodiversity Targets. The passport is available as an App for your smartphone, see http://www.bipindicators.net/resource/aichipassport For further information see The Biodiversity Indicators Partnership (BIP) http://www.bipindicators.net/; http://www.bipindicators.net/2010bippublications and The UNEP World Conservation Monitoring Centre (UNEP-WCMC) UNEP-WCMC http://www.unep-wcmc.org

CBD Technical Series No. 58, Developing Ecosystem Service Indicators: Experiences and lessons leaned from sub-global assessments and other initiatives - This report synthesises experiences

and approaches to measuring, mapping and monitoring ecosystem services worldwide. It draws on the experiences of a range of sub-global assessments, which have been conducted during and subsequent to the Millennium Ecosystem Assessment. The report is based on discussion and recommendations arising from international workshops held in 2009 and 2010, and its findings have contributed to the process of developing an indicator framework for the Aichi targets adopted by Parties to the CBD in Nagoya. It includes an annex of fact sheets describing examples of ecosystem service indicators taken from a range of assessments.


CBD Technical Series No. 53, Biodiversity Indicators & The 2010 Biodiversity Target: Outputs, experiences and lessons learnt from the 2010 Biodiversity Indicators Partnership,


The Ecosystem Service Indicators Database (ESID) was created by the World Resources Institute to make ecosystem service metrics and indicators readily available for use in policy dialogues and decisions, in ecosystem assessments, and in natural resource management decisions. ESID is an online searchable database where users can find—and contribute—indicators that have been used to apply ecosystem services approaches or hold promise for doing so. Indicator descriptions and other supporting information about how the indicator has been or could be applied are also provided. To begin using ESID, visit the Indicators Overview page where you can browse, search and filter the entire collection of indicators. For further information see WRI

http://www.wri.org/

Toolkit for the Indicators of Resilience in Socio-ecological Production Landscapes and Seascapes


UNU-IAS, Bioversity International, IGES and UNDP (2014) Toolkit for the Indicators of Resilience in Socio-ecological Production Landscapes and Seascapes (SEPLS)

UNU-IAS Policy Report Indicators of Resilience in Socio-ecological Production Landscapes (SEPLS)


Indicators Relevant for Indigenous Peoples: A resource Book


Community based monitoring and information system:


Ecosystem Service Indicators: A social-ecological systems approach for generating relevant indicators for the CBD 2020 targets


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Happy Planet Index. The HPI measures what matters: the extent to which countries deliver long, happy, sustainable lives for the people that live in them. The Index uses global data on life expectancy, experienced well-being and Ecological Footprint to calculate this.
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