

Guidelines for sub global assessments

A detailed outline of the local level methodology is presented below. The methodology focuses on ecosystem goods and services. It follows the conditions- scenarios- response options framework. It also proposes ways and means of organising effective cross-scale interactions.

Step No	Activity	Purpose	Function/ Principle	Inputs	Outputs	Results expected	Generic key questions	Best Practices
1	Identification of study sites – Extending over local government unit jurisdictions;	Focus investigations	Arrive at maximum insights for effort put in assessment	Information on potential sites:	Ranking of potential choices	Optimal choice of sites within logistic constraints	What universe of conditions should be represented by the sites selected for assessment?	Involve a wide cross-section of stakeholders in arriving at the choice
2	Establishment of rapport with local citizens, explaining purpose and methodology of ecosystem assessment, obtaining endorsement of local government, obtaining co-operation of local organisations such as youth club, women’s club, farmers’ union, fishermen’s co-op, forest labourers’ society and of local educational institutions.	Ensure full involvement of the stakeholders in the assessment	Assessment should be a response to user demands; its product should fuel further action	Dissemination of information on assessment through printed media, pamphlets, public hearings, group discussions, orientation programmes;	Appreciation of people’s ecological concerns,	Building of a network for participatory assessment	What is the extent of stakeholder commitment for the assessment exercise?	Solicit participation from a broad range of stakeholders in a very transparent fashion
3	Collection of maps, satellite imagery, census data, data with government departments such as cropping pattern, fish landings, data with local government units such as primary health centres.	Build up a data base of all available information as a back-up for the investigation	Take maximum advantage of information already available	Contacting potential sources, copying and computerization of data	Data base about study sites	Full background understanding of the setting of the study site	What are the sources of pertinent information? What is the extent of their reliability? How much of the information is accessible?	Build a rapport with the various agencies holding information. Involve them actively in the assessment.
4	Preparation of checklists of biodiversity elements of interest likely to be encountered in the study sites along with their local names	Preparing the assessment team to collect biodiversity related information in an efficient manner	Invest in building the capacity of the assessment team	Review of literature, group discussions and interviews of local knowledgeable individuals	Checklists, networking with technical experts and local knowledgeable individuals	Full appreciation of the available background information on the biodiversity elements of human significance from the	What is the extent of the biodiversity elements of potential human significance likely to be present in the study sites?	Carefully survey published as well as gray literature; get to know and build rapport with local knowledgeable individuals

						study site		
5	Delineation of study sites on toposheets, identification of major landscape elements, visual interpretation of satellite imagery, location of training sites, supervised classification of satellite imagery.	Build the background information for the creation of a spatially referenced data base; delineate the mosaic of ecological habitats	Facilitate interpretation of ecological processes and ecological planning	Maps, satellite imagery, familiarisation with the study landscape	Maps delineating ecological habitats, computerised spatial data base to serve as an input for a GIS	Fuller understanding of the ecological setting by the assessment team; tools to communicate with various stake-holders	What is the nature of the study landscape?	Use the entire mapping exercise to build the capacity of the assessment team and its interaction with outside experts as well as the local community
6	Basic survey (by NGO volunteers) of all households focussing on links to ecosystem goods and services such as use of streams for irrigation, free range grazing of cattle, fishing, use of medicinal herbs, collection and sale of non-timber forest produce, use of pesticides, setting of forest fires. Main and subsidiary occupations, ownership of land-water resources, level of education, indicators of purchasing power such as TV sets, motorbikes. Delineation of major user groups of local people on the basis of this survey. Identification of individual with special expertise e.g. medicine-men, seed sorters, basket weavers, honey collectors.	Develop a data base on the local community and their links to the ecosystem, keeping in view the issues identified by the assessment groups working at other scales; identify main user groups to guide sampling; create a roster of local knowledgeable individuals	Identify local stakeholders and potential collaborators for the assessment	Household level rapid survey by local volunteers	Data base on the local human community	An understanding of the local human ecological scenario; establishment of rapport with the local community	How does the local human community relate to the local ecosystem goods and services, and bads and disservices? What kind of practical ecological expertise resides with the local people?	Work with properly trained local volunteers to administer a brief, but to the point questionnaire; share ideas with assessment groups working at other scales
7	Listing activities of outsiders impinging on ecosystem goods and services of locality with the help of	Develop a data base on the outsiders with links to the ecosystem under investigation, keeping in view the issues identified by the assessment groups	Identify outside stakeholders and potential collaborators for the assessment	Interviews of local knowledgeable individuals, officials and political office-bearers by local volunteers	Data base on outsiders with links to the ecosystem under assessment	An understanding of the overall ecological scenario prevailing at the site under assessment;	How do outsiders relate to the local ecosystem goods and services, and bads and disservices? What kind of	Work with properly trained local volunteers to administer a brief, but to the point questionnaire; share ideas with

	<p>knowledgeable individuals of locality, government officials, political office-bearers. Such activities will include use or pollution of water upstream, sale of agrochemicals to farmers, ecotourism, pilgrimage, poaching, control over reserved forest or agricultural development programmes. Identification of outside experts with an understanding of outside influences on local ecosystem goods and services.</p>	<p>working at other scales; identify main outsider user groups to guide the assessment; create a roster of knowledgeable outsiders</p>					<p>practical or technical ecological expertise resides with the outsiders linked to the ecosystem under assessment?</p>	<p>assessment groups working at other scales</p>
8	<p>Prepare three lists of people to be selected for further help in the assessment by conducting (a) in-depth interviews, (b) Collaborative field observations. The three lists will include (a) Local Experts (b) Outside Experts (c) Representative members of different user groups</p>	<p>To identify collaborators for the participatory assessment exercise</p>	<p>Identify the most effective set of collaborators for the participatory assessment</p>	<p>Interviews of local people, officials, political office bearers; household surveys</p>	<p>Data base on potential collaborators</p>	<p>An effective assessment</p>	<p>How to identify representative members of user groups and local and outside experts to constitute a team of collaborators for the assessment</p>	<p>Create the data base through an open, transparent and participatory exercise</p>
9	<p>On the basis of toposheets, supervised classification of satellite imagery, household surveys</p>	<p>To create a spatial data base of the current status and historical changes in the ecological setting and access regime</p>	<p>Assessment would greatly benefit from proper spatial referencing</p>	<p>Survey maps, classified satellite imagery, interviews</p>	<p>Map overlays, GIS data base</p>	<p>Ability to set the assessment in a spatial framework</p>	<p>How is the mosaic of ecological habitats and access regimes organised in space? How has this been</p>	<p>Ground truthing should be attempted with care; the mapping exercise should be used to build</p>

<p>and information from local experts develop following set of map overlays:</p> <p>(a) Landscape elements on basis of biophysical features.</p> <p>(b) Access regimes such as reserve forest, revenue forests, community forest, temple land, privately owned land.</p> <p>(c) Landscape elements as they existed twenty five years ago,</p> <p>(d) Access regimes as it existed twenty five years ago.</p> <p>(e) Distribution of houses of people belonging to major user groups (as in Step V)</p> <p>(f) Locally prevalent names of landscape elements, often denoting traditional land</p>						<p>changing over time?</p>	<p>rapport with the various stake-holders</p>
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	use pattern. (g) Location of spots of special aesthetic, cultural, religious significance, as well as special nuisance value or ugliness.							
10	Overlaying access regime map on landscape elements map create a composite landscape/ access elements map. Select representative patches of landscape/ access elements and spots of special significance for field observation of current condition and in - depth discussion of ongoing changes and forces driving such changes.	Patterns of human impacts on the ecological resource base are governed jointly by the biophysical conditions and human access. This constitutes the framework for the assessment.	To provide an appropriate, spatially referenced framework and select representative locales for field observations	Landscape and access regime maps	Composite maps, GIS layers, identification of sampling points	Ability to set the assessment in a spatial framework, To organise sampling effectively	How is the mosaic of ecological habitats and access regimes organised in space?	Mapping exercise should be used to build rapport with the stakeholders.
11	Identification of ecosystem goods and services (ESGS), as well as bads and disservices (ESBD) and of related processes of significance from the perspectives of local and outside experts (as identified in Steps V and VI). These may be viewed under five categories: (1) Imbalances in the fluxes of materials, energy into and out of the study locality; e.g.	Identifying an appropriate focus for the local assessments, keeping in view the issues identified by groups working at other scales	Assessment exercise should focus on the most significant ecological concerns of local stakeholders and relate these to the issues identified at basin/ national/ global scales	Interviews, group discussions	Identification of the focus for the local assessments	Careful identification of local concerns would lead to active involvement of local stakeholders, not only in the assessment , but also in follow up actions	What ecosystem goods and services and bads and disservices constitute key ecological concerns of the local stakeholders? How do these concerns compare with those raised at basin, province, nation, global scales?	Identify the key ecological concerns through an open, transparent and participatory process. Take advantage of the exercise to build rapport with local stakeholders, Develop channels of continuous interaction with experts working on assessment at other scales

<p>polluted water from an upstream source of pollution, or export of soil nutrients without replenishment through sale of dung from cattle grazing in forest.</p> <p>(2) Land and water- scape transformations , e.g. conversion of common lands used for grazing into cultivated land.</p> <p>(3) Identification of a subset of those soil and water resource related ESGs that are eroding (either overall, or in terms of access to some user groups), and those ESBs that are growing (either overall, or in terms of impact on some user groups). This may lead to a subset such as underground</p>							
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<p>aquifer and granite being quarried. The concerns may also focus on government restrictions on use of water for agricultural purposes to divert it to industry.</p> <p>(4) Identification of a subset of those living resource related ESGs that are eroding (either overall, or in terms of access to some user groups), and those ESBs that are growing (either overall, or in terms of impact on some user groups). This may lead to a subset such as grasslands, freshwater fish, trees on which rock bees build hives, paddy cultivars, etc. The concerns may also relate to restrictions on collection of</p>							
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	<p>rock bee honey from National Park areas.</p> <p>(5) Identification of a subset of human health related ESGs that are eroding (either overall, or in terms of access to some user groups), and those ESDs that are growing (either overall, or in terms of impact on some user groups). This may lead to a subset such as medicinal plants or drinking water sources polluted by coliform bacteria. These key, ecological concerns will provide the focus of the ecosystem assessment.</p>							
12	<p>For such issues of key ecological concern information is needed on current status, changes over time (~ one</p>	<p>To generate good information on condition, trends, and driving forces relating to key ecological concerns in a participatory fashion</p>	<p>To generate the core information for the assessment</p>	<p>Collaborative field work and in-depth interviews by technical personnel, local volunteers and knowledgeable</p>	<p>Information on the core concerns of the assessment</p>	<p>A sound understanding of the ecosystem under assessment</p>	<p>How are natural and societal forces moulding ecosystems?</p>	<p>Generate the required understanding through an open, transparent and participatory process. Involve local</p>

<p>generation or 25 yrs), and forces driving change with respect to: (a) Biophysical attributes (b) Institutions governing human influences; formal and informal, de jure and de facto (c) Legal framework (d) Economic forces (e) Technologies.</p> <p>Information on all these aspects for the identified key issues should be collected as follows:</p> <p>(a) Secondary data collected with help of local and outside experts.</p> <p>(b) Field observations at selected representative patches as a collaborative activity of local experts and technical experts employed in the assessment project, as well as outside experts where available.</p>			<p>e individuals</p>				<p>stakeholders in analysing and interpreting the information collected. Take advantage of the exercise to build rapport with and capacity of local stakeholders, Share the understanding with experts working on assessment at other scales</p>
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	(c) In-depth interviews of local and outside experts by technical experts working on the project.							
13	This understanding of key ecological concerns from the local perspective should be compared with the perspectives from national/global levels. These other perspectives, for instance, value of carbon sequestration from a climate change viewpoint, or likely new developments such as use of GMO's in agriculture may be shared with local experts and local people at large through special expositions and group discussions.	Ongoing and likely future changes at the local scale are embedded in changes at higher scales; planning at local level requires co-ordination with and co-operation from higher levels; so stakeholders at local level must be familiar with perspectives from other levels; the purpose of this activity is to do so.	To facilitate appropriate cross-scale interactions	Global, national perspectives gleaned from literature; through interactions with relevant experts	Understanding by local stakeholders generated through group discussions and expositions	Well informed local collaborators for the assessment	What ecological, societal, economic, technological changes taking place at other levels will significantly impact local ecosystems and local people's interrelations with it	Maintain a process of regular dialogue with local stakeholders to share with them an understanding of relevant developments at other scales; create a network of people interested in issues at different scales to share understanding on a regular basis
14	Long term in-depth interviews of households representing the various user groups to explore the key ecological concerns relevant to particular user groups. These would cover all the points mentioned	To understand the complex social dynamics operative in any human community as it interacts with its ecological matrix; to appreciate the diversity of human interests and the alliances and	To ensure that the perspectives of all stakeholders are understood and taken on board in the assessment process and in facilitating	Interviews preferably involving local volunteers or students of representative s of all the variety of user groups	An appreciation of social-ecological linkages	A balanced perception of the situation and ability to promote follow up action involving all stake-holders	In how many different ways do the different local stakeholders relate to the ecological resource base and how does this affect the ways in which they relate to	Generate the required understanding through an open, transparent and participatory process. Involve local stakeholders in analysing

	under step XI. Additionally discussion would focus on who the gainers and losers of ongoing changes are, what conflicts these engender, what alliances it promotes, what co-operative action it generates.	conflicts it generates	positive responses				each other?	and interpreting the information collected. Take advantage of the exercise to build rapport with and capacity of local stakeholders
15	All the households representing different user groups, local experts and outside experts should be asked to express the values they place on different types of landscape/ access elements, on specific localities, on different types of living organisms and different ecological processes. These values may be interpreted in light of the history of the livelihood strategies of the concerned households.	Value judgements by people are an important basis of their actions . An understanding of values is therefore critical to an appreciation of the social- ecological dynamics and formulation of response options	To furnish an understanding of pertinent value judgements	Interviews, group discussions, preferably involving local volunteers and students	A documentation of value judgements relating to locales, biodiversity elements and ecological processes as held by different stakeholders	Incorporation of variety of value judgements in the assessment process and in formulation of response options	What kinds of values do different stakeholders place on ecological processes and elements? What moulds these values? How do these values affect their motivations? How do these values determine the different stakeholders' preferences for different response options?	Generate the required understanding through an open, transparent and participatory process. Involve local stakeholders in analysing and interpreting the information collected. Take advantage of the exercise to build rapport with and capacity of local stakeholders
16	The same group of people should be asked to sketch three alternative scenarios with respect to the key ecological concerns: (a) Best that could happen and forces that may bring this about; (b) Worst that could happen and forces that may	To generate an understanding of the different stakeholders' visions of alternate futures to help develop a set of response options	How people visualise the future is critical to formulation of responses to present-day challenges	In depth interviews and group discussions preferably organised by local volunteers and students	A documentation of alternate futures as visualised by different stakeholders	Incorporation of variety of perceptions of alternate futures in the assessment process and in formulation of response options	What kinds of alternate futures are visualised by different stakeholders? What moulds their visions? How do these affect their motivations? How do these visions	Generate the required understanding through an open, transparent and participatory process. Involve local stakeholders in analysing and

	drive this state of affairs; and (c) What is most likely to happen.						determine the different stakeholders' preferences for different response options?	interpreting the information collected. Take advantage of the exercise to build rapport with and capacity of local stakeholders
17	These local scenarios should be compared with national/ global scenarios. The global scenarios may include Climate Change scenarios or those relating to demographic , technological or trade regime changes etc. Local people should be advised of these other perspectives and their responses called for.	Ongoing and likely future changes at the local scale are embedded in changes at higher scales; planning at local level requires co-ordination with and co-operation from higher levels; so stakeholders at local level must be familiar with perspectives from other levels; the purpose of this activity is to do so.	To facilitate appropriate cross-scale interactions	Global, national perspectives gleaned from literature; through interactions with relevant experts	Understanding by local stakeholders generated through group discussions and expositions	Well informed local collaborators for the assessment	What ecological, societal, economic, technological changes that constitute elements of scenarios of future visualised at other levels will significantly impact local ecosystems and local people's interrelations with it?	Maintain a process of regular dialogue with local stakeholders to share with them an understanding of relevant scenario developments at other scales; create a network of people interested in scenarios at different scales to share understanding on a regular basis
18	All the emerging scenarios by the whole spectrum of stakeholders involved in the local assessment should be compared to understand where there is a broad agreement on what would be desirable and what forces may derive it and where there are major disagreements. Group discussions could be organised	It is desirable that the basket of response options should be grounded in the commonalities that emerge in what the various stakeholders would like to see happen	Identification of the broad consensus in the preferences of the various stakeholders as to what they would like to see happen and how they see it being brought about	Variety of scenarios elucidated through interviews and group discussions	Documentation of common elements in people's vision of desirable futures	A sound basis for developing a broadly acceptable set of response options	What are the common elements in people's visions of desirable futures? What shapes these commonalities? What shapes the differences?	Maintain a process of regular dialogue with local stakeholders to share with them an understanding of commonalities and differences in their visions of desirable futures.

	to explore whether some of the conflicts can be resolved, and if so how. This should lead to a good appreciation of what a broad section of people desire with respect to their key ecological concerns.							
19	All of this understanding should be fully documented with a review of the documentation and data bases not only by technical experts but also by peers of local experts involved (e.g. other dispensers of herbal medicines, chairs of village councils, science teachers in village high schools)	To cross-check and validate, to disseminate the ideas and build capacity	The understanding generated should be critically appraised and shared	Assessment documentation and data bases	Critical appraisal, information sharing and capacity building	Enhancement in the quality of the assessment, Dissemination of the programme	What is the quality of the products of local assessments? What are the best ways of enhancing this quality? How much can we generalise from local assessments? How can we link local assessment information to that at higher spatial scales?	Involve a wide cross section of interested people working at various scales in the process of review and validation
20	The full set of local experts, outside experts and representatives of user groups should be asked to express their opinions on response options to arrive at desired objectives with respect to key ecological concerns	To arrive at an effective set of response options in a broad-based participatory fashion	Response options should be generated in an effectively participatory manner on the basis of an in-depth assessment	The understanding generated during the assessment as to condition, values and scenarios	Set of response options	Concrete proposals for and building of capacity to manage environmentally sound development	How best to arrive at an effective and broadly acceptable set of response options?	Carry out the whole exercise in an open, transparent and participatory fashion

	<p>where there is a broad consensus. The response options may be visualised along two dimensions:</p> <p>(a) In terms of actors: Individuals, Local Government Units, State Government, National Government, International Community - also co-operatives, corporations at different scales.</p> <p>(b) Nature of response: Biophysical measures, institutional reform, legal reform, economics incentives, technological innovations.</p>							
21	<p>These response options should be analysed, consolidated and documented. These would serve the basis for a number</p>	<p>To translate the assessment into effective action locally, as well as to feed into catalysing effective action at other scales</p>	<p>Understanding must lead to action</p>	<p>Proposed set of response options</p>	<p>Material for communication, educational system; Action through voluntary effort, institution building, legislation,</p>	<p>Variety of effective follow up actions at many different scales</p>	<p>How can assessment processes catalyse effective responses?</p>	<p>Promote follow up actions through a broad based participatory process</p>

<p>of follow-up actions.</p> <p>(a) Communication - within local community, neighbouring villages, with concerned stakeholders at state, national, global levels.</p> <p>(b) Injecting the understanding into educational process.</p> <p>(c) Promoting appropriate voluntary decisions.</p> <p>(d) Catalysing establishment of appropriate institutions.</p> <p>(e) Lobbying for appropriate legal reforms.</p> <p>(f) Promoting appropriate economic incentives.</p> <p>(g) Helping gain access to desirable technologies.</p> <p>(h) Designing a basket of appropriate development projects.</p>				<p>introduction of technologies, development planning</p>			
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