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Engaging Stakeholders in the Adaptation Process

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2.1. Introduction

Adaptation is a process by which strategies to moderate, cope with and take advantage of the consequences of climatic events are enhanced, developed and implemented. Adaptation occurs through public policy-making and decisions made by stakeholders, i.e., individuals, groups, organisations (governmental agencies or non-governmental organisations (NGOs)) and their networks. Relevant stakeholders need to be brought together to identify the most appropriate forms of adaptation. Analysing the capacity of stakeholders to cope with and adapt to climatic events is fundamental to characterising current and possible future vulnerability. Understanding the role of stakeholders in the decision-making process will assist in the implementation of adaptation policies. In short, stakeholders are central to the adaptation process.

Many countries have already undertaken what are called the first generation impact, vulnerability and adaptation (V&A) studies. Some countries have also undertaken more in-depth projects aimed at preventing or ameliorating climate impacts and risks. The Adaptation Policy Framework (APF) seeks to support new V&A studies, as well as a range of other adaptation-related inquiries. In doing so, it emphasises the importance of a more stakeholder-driven approach. Stakeholders are fundamental to the process of adaptation, as it is they who will comprise the "adaptation community" that is required to sustain the process.

Each of the five Components of the APF involves stakeholders in a number of ways. The composition of the stakeholder group may change as the types of activities change. The involvement of stakeholders will be essential throughout in: designing the project, determining the analytical approach to be used, evaluating candidate policies and measures, continuing the process and communicating results of the efforts. This Technical Paper (TP) gives guidance on how and why to engage stakeholders at each of these points. It aims to assist the user in designing a stakeholder involvement strategy and engaging different stakeholders in such a way that their basis for interaction is strengthened and broadened. The second and third sections outline, respectively, the relationship of this TP to the larger APF and the definition of stakeholders. The fourth section explores why the engagement of stakeholders is so valuable to an adaptation project. Section 2.5 sketches general approaches to engaging stakeholders, while section 2.6 provides specific guidance on engaging stakeholders in each Component of the APF. The TP concludes with key reflections on the stakeholder engagement process.

2.2. Relationship with the Adaptation Policy Framework as a whole

A distinguishing feature of the APF is that it is stakeholder-driven. As such, this TP relates to all five Components of the APF (Figure 2-1). TP2 suggests an overall strategy and specific

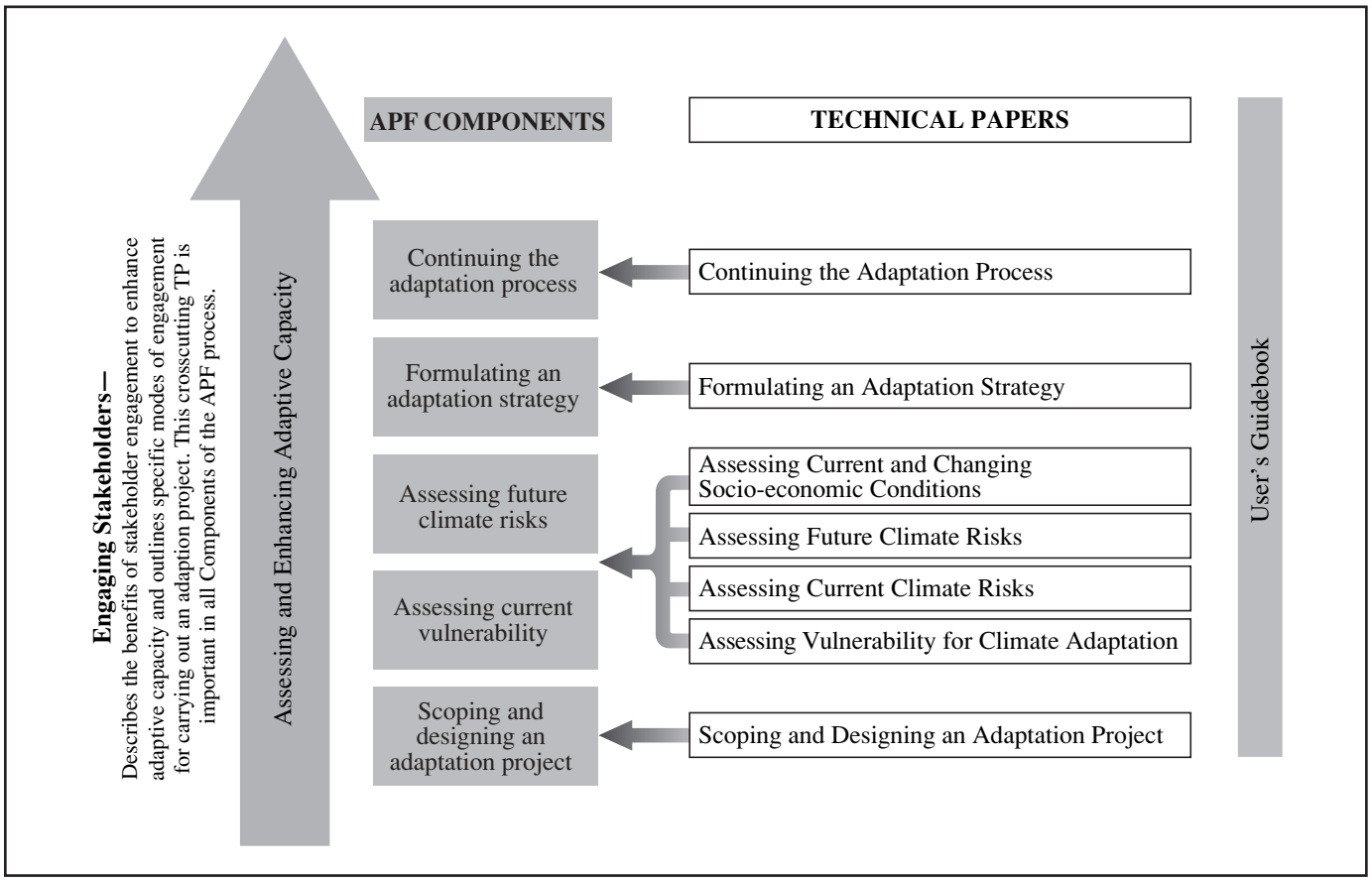

Figure 2-1: Technical Paper 2 supports Components 1 to 5 of the Adaptation Policy Framework

techniques for engaging stakeholders at each of these stages. Further, since stakeholders represent the primary source of adaptive capacity, this TP is closely aligned with the other cross-cutting paper (TP7), which is concerned with assessing and enhancing adaptive capacity.

The participants in the stakeholder process, the types of participation and the outcomes are discussed in the remaining sections of this TP.

2.3. Key concepts

The term "stakeholder" in climate change studies refers to policy makers, scientists, administrators, communities, and managers in the economic sectors most at risk. In this context, stakeholders can be brought together from both public and private enterprises to develop a joint understanding of the issues and to create adaptations.

Box 2-1: Stakeholder analysis in a community-based forest and wildlife resources management project in northern Mozambique

The Mecuburi Forest Reserve was included as a pilot area of the Mozambique government project, "Support for Community Forestry and Wildlife Management (1997 – 2002)". The two project objectives were to:

1. Improve the standard of living in rural communities through increased access to forest and wildlife products for household use and marketing; and generate income from employment, small industries and hunting fees.
2. Protect and manage the resource base of forestry, wildlife, agriculture and animal husbandry through local communities in a rational way.

Table 2-1 outlines the outputs of the project's stakeholder analysis.

Table 2-1: *Stakeholder Analysis in Mecuburi Pilot Project Area*

Stakeholder	Stake	Comments
Farmers living inside Mecuburi Forest Reserve	Arable land, spare arable land, basic needs for survival, cultural value of the forest	High migration indices due to the civil war that ended in 1992; some farmers "own" additional land outside the reserve
Farmers living next to Mecuburi Forest Reserve	Construction material, bush meat, cultural value of the forest	Not very interested in the proper utilisation of the resources in the reserve
Cotton and tobacco merchants	Cotton and tobacco produced by farmers living in the reserve	Promote cotton and tobacco cropping through credit schemes supplying basic inputs (e.g., technical advice)
Merchants dealing in construction material	Construction material (e.g., poles, bamboo, rope, thatch) in the forest reserve	These materials are often extracted illegally
Professional hunters	Wildlife for sport hunting and meat	Most hunt illegally, or in collusion with corrupt police officials
Commercial logging companies	Commercial timber (e.g., umbila, panga panga, chanfuta) growing inside the forest reserve	Often illegally extend their concession areas on adjacent public land to include the forest reserve
Local government/ administrative structures	Rural development, revenue for the local authority	Unlawfully superimpose authority in conservation area
Provincial Forest and Wildlife Services	Conservation, programme implementation, revenue	Caught in the paradoxical dilemma of having the duties of the police at certain times and of the extensionist at others

Source: Presentation prepared by Patrick Mushove for the workshop "Climate Change, Vulnerability and Adaptation: AIACC Development Workshop", Third World Academy of Sciences, Trieste, Italy, 3-14 June, 2002

The definition of stakeholders used here is "those who have interests in a particular decision, either as individuals or as representatives of a group. This includes people who influence a decision, or can influence it, as well as those affected by it" (Hemmati, 2002).

2.4. Why engage stakeholders?

Stakeholders are individuals or groups who have the current and past experience of coping with, and adapting to, climate variability and extremes. The principal resource for responding to climate change impacts is people themselves, and their knowledge and expertise. Through an ongoing process of negotiation, they can assess the viability of adaptive measures. Together, the research community and stakeholders can develop adaptive strategies by combining scientific or factual information with local knowledge and experience of change and responses over time too. Box 2-1 describes an example of the importance of stakeholders' involvement, outlining individual stakeholders, their stake and the observed particularities of each group. This example corresponds roughly to Components 1 and 2 of the APF.

Stakeholders, at different levels and stages, are crucial to the success of an adaptation project. Through listening to the views of others, stakeholders can build a shared understanding of the issues. Priority areas for action emerge that take account of everyone's perceptions. This process requires time to build trust between the groups and individuals involved, and can be empowering, as solutions are worked out collaboratively (Box 2-2). If each participant is seen as having a valid view, a stakeholder process can encourage longer-term capacity development by developing pathways for co-ordinated action. Adaptive capacity is developed if people have time to strengthen networks, knowledge, resources and the willingness to find solutions. However, the process must be carefully designed and implemented, as stakeholder participation does not in itself guarantee equity, fairness or eventual buy-in.

2.5. Approaches for stakeholder engagement

There are a great number of approaches to stakeholder engagement, and no single formula for success. Rather, there are combinations of tools and techniques that will be well-suited to a given situation. The choice of which to use depends on the complexity of the issues to be discussed and the purpose of the engagement, both of which will be determined in the initial steps of the project where a careful evaluation of the time and resources available should be performed.

Stakeholder engagement approaches vary from quite passive interactions, where the stakeholders provide information, to "self-mobilisation", where the stakeholders themselves initiate and design the process. The different levels of participation can be illustrated using the "ladder of participation" outlined in Figure 2-2. Engagement closer to self-mobilisation is not necessarily better because it is more participatory. Different levels of participation will be appropriate for different stages of the project and given the experience of the research team. However, it is important that the stakeholders understand how they are being involved, how the information they provide will be used and whether they have any power to influence decisions.

It is also important to consider the scope of the issues that stakeholders will participate in defining and solving (Thomas, 1996). When designing the engagement, it is important to take into account the stage at which the engagement is occurring in terms of the policy-making process, what decisions have already been taken and what positions are already fixed. It may be that the engagement, though very participatory in itself, is

Box 2-2: Benefits of stakeholder engagement (adapted from Twigg, 1999)

- Participatory initiatives are more likely to be sustainable because they build on local capacity and knowledge, and because the participants have "ownership" of any decisions made and are thus more likely to comply with them. Participatory initiatives are thus more likely to be compatible with long-term development plans.
- Working closely with local communities through stakeholder engagement can help decision-makers gain greater insight into the communities they serve, enabling them to work more effectively and produce better results. In turn, the communities can learn how the decision-making process works and how they can influence it effectively.
- The process of working and achieving things together can strengthen communities and build adaptive capacity through developing awareness of the issues within the community, as well as finding ways to address them. It can reinforce local organisations, and build up confidence, skills and the capacity to cooperate. In this way it increases people's potential for reducing their vulnerability. This, in turn, empowers people and enables them to tackle other challenges, individually and collectively.
- Stakeholder participation in planning, through priority-setting and voicing preferences, as well as in implementation, accords with people's right to participate in decisions that affect their lives. Processes of engagement can improve the likelihood of equity in decision-making and provide solutions for conflict situations.
- Engaging stakeholders may take longer than conventional, externally-driven processes, but may be more cost-effective in the long term; a stakeholder process is more likely to be sustainable because the process allows the ideas to be tried, tested and refined before adoption.

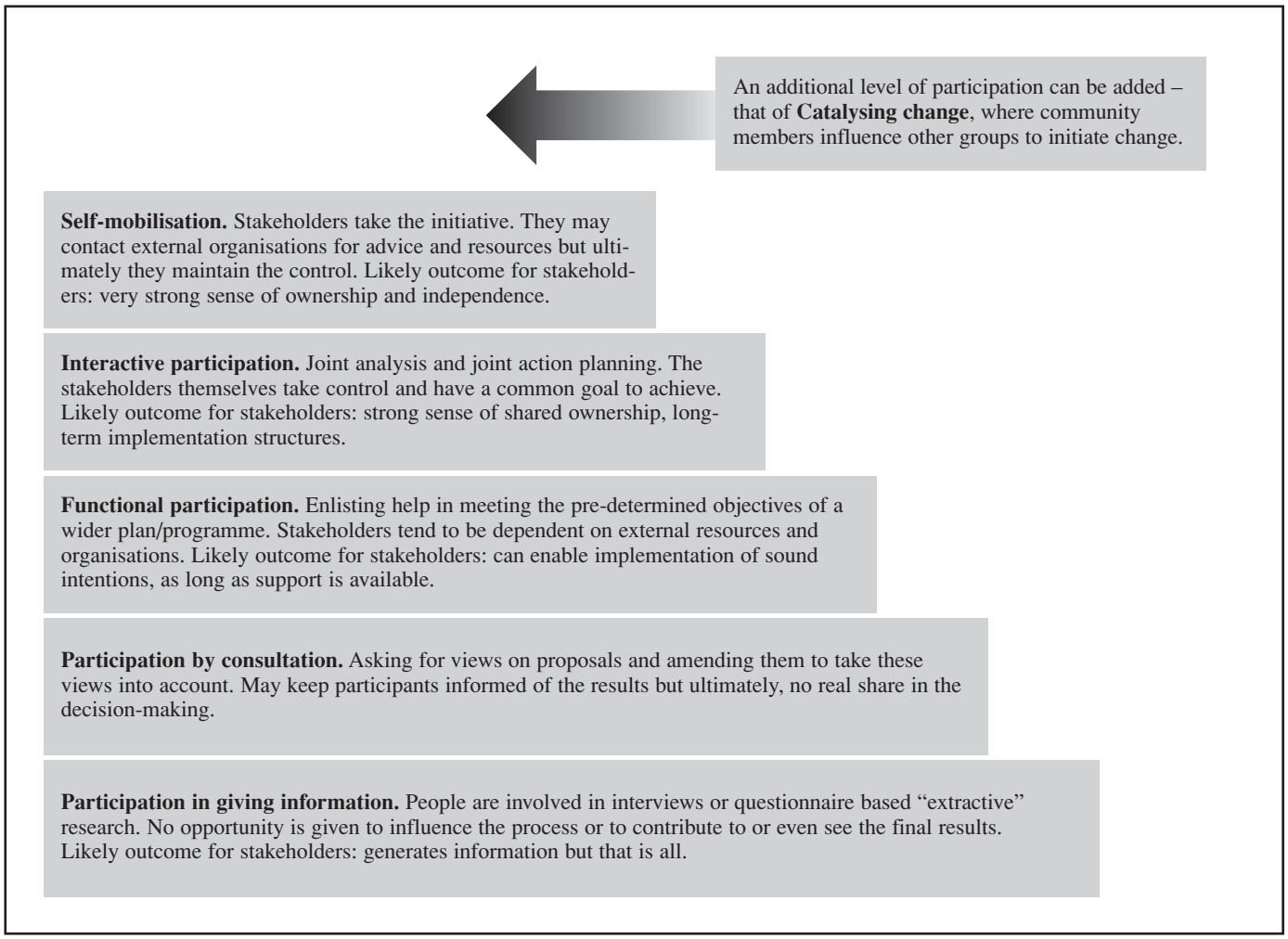

Figure 2-2: Ladder of participation (adapted from Pretty, 1994)

not effective because the scope is too constrained and there is no opportunity for developing creative solutions.

2.6. Guidance for stakeholder engagement

In this section, actions for developing a stakeholder engagement strategy are outlined based on the five Components of the APF. For each of these Components, the project team may wish to review several participatory techniques and, with the facilitator's input, decide which they feel comfortable using (see examples in Annex A.2.1).

2.6.1. Component 1: Scoping and designing an adaptation project

Who is involved?

The scope of the project will be determined by the project team (TP1). This project team will propose the scope of research (e.g., region, sector, vulnerable group) based on the results of previous studies and on the advice and needs of decision-makers and experts. The results of this first stage should be made widely available to NGOs and other interested groups for comments. This helps to ensure transparency and build trust in the process.

Tasks in Component 1

As outlined in TP1 (S*coping and Designing an Adaptation Project*), in the first stage of the APF, the project team performs a brief review of the current national policies for climate change (e.g., United Nations Framework Convention on Climate Change ((UNFCCC)) National Communications), for development and for the environment (e.g., the conventions on biodiversity and desertification) as a way to identify national priorities and the institutions that could be engaged in the project. In this review process, the project team can start to build up a directory of national and international entities (e.g., experts, agencies, NGOs and project managers) whose work is related to adaptation and who could be a source of information and support. It is important to include key people at an early stage of the project. The relevant national and regional governmental decision-makers should be encouraged to read and comment on these initial reports. Being

Box 2-3: Guidelines for effective engagement

Clarity

Clarify the objectives and goals of the engagement and evaluate the appropriateness of the techniques. Work towards agreement on defining the problem, acknowledging differences in people's perception. Be realistic about what can be achieved given the constraints of time and money, the available expertise and the political realities. Communicate clearly in all phases of the engagement; this strategy should include access to and presentation of all relevant information. Short-term interests inevitably take over when resources are scarce.

Understanding of related processes

Be clear about how the engagement fits in with official decision-making processes. Will the engagement process feed into and inform these other processes effectively? It is important to identify people, groups and structures that can provide support to achieve any actions identified through the engagement process.

Management of information

Having access to information is a form of power. Some groups will need to be persuaded of the benefits of both sharing information and developing a more holistic understanding of the issues. Information should be provided in an accessible way, without using complex concepts and jargon.

Communication and decision-making are not purely rational processes – people's feelings, attitudes and the ways in which they process information must be taken into account. It may be necessary to present information in different ways, e.g., as values or moral opinions, scientific facts or personal experience. Explain the objectives and goals of the process in advance, as well as what participants will be required to do.

Support and capacity development

Some groups may need training or other support to educate them to the level of other stakeholders. Examples include information that enables them to contribute to the discussions and data on likely impacts for their area or sector.

Transparency

Stakeholder groups should be identified in an open and transparent manner. From these groups, participants should also be invited in an open manner.

Trust-building

Stakeholder processes may bring together groups with opposing views – and with them, possibly a lack of trust. If the leaders can assure all participants that, in the engagement process, every participant's view is valued and respected, the people should feel reassured that their opinions will be heard, and they will be more likely to listen to others.

Time for the process

Lack of time is given as one of the most common constraints of many engagement processes. Since considerable time is required to develop the process, build partnerships and strengthen networks among stakeholders; raise awareness and build trust, and effective stakeholder engagement will take more time than conventional processes.

Feedback and flexibility

Participatory processes can be very flexible. If one technique is not working, another can be used or the questions changed to obtain the required information. This flexibility must be planned, and time must be allowed to get feedback on the effectiveness of the process. Are the right questions being asked? Is everyone contributing fully? If not, what are the obstacles and what could be improved? The analysis and synthesis of the outputs should be presented to stakeholders before general dissemination. Any conflicts of interest should be stated explicitly. This demonstrates a respect for differences.

Box 2-4: Identifying stakeholders to involve in each Adaptation Policy Framework Component

Ultimately, the question of who participates at any stage in an adaptation process is determined by the methods used to identify stakeholders. A simple but effective method is to ask the initial group of stakeholders (identified by the project team in Component 1) to suggest other stakeholders who are, in turn, asked the same question until no more individuals can be identified. This iterative method can be applied in each of the five APF Components. However, limited time and other resources will ultimately limit the number of stakeholders involved.

In addition to having the power to influence the adaptation process or being part of a group that would be directly affected by a predicted climatic impact, identified stakeholders must also be willing to participate in the process. In many cases, the stakeholders involved are the "usual suspects", i.e., government and NGO representatives, local dignitaries, businessmen and academics – people who are both familiar with the existing institutions and comfortable voicing their opinions. Other groups, particularly highly vulnerable individuals, may likely require more support to engage as they may not be able to attend meetings at certain times, they may feel uncomfortable in voicing their opinions or embarrassed about their lack of knowledge or education. Their involvement in the process is fundamental, as these individuals will play a key role in adapting to the impacts of critical climatic, environmental or socio-economic events. Also, they have rich experience and knowledge about the practical aspects of adaptation.

familiar with the project from the beginning may mean that they are more likely to take note of the project outputs and include them in their decision-making processes and policy design.

Stakeholders bring a range of interests to the APF process. Some examples are given in Table 2-2.

2.6.2. Component 2: Assessing current vulnerability

Who is involved?

Component 2 would likely involve the people and groups who would be increasingly affected by the foreseen impacts, either positively or negatively, as well as those who have a role in influencing adaptation. Ideally, it would engage the most vulnerable, as identified in the first stage of the project. Regional climate, history and socio-economic experts could give advice on current conditions in the study region.

Tasks in Component 2

It is important to develop a common understanding among the stakeholders of what is meant by the words used. For example, the meaning of the words "vulnerability", "adaptation", "coping range" and "climatic hazard" should be discussed and agreed. Having this shared understanding is the first step to finding realistic solutions and building capacity. The project team and the regional experts may want to prepare a brief initial description of current climate and its variability in the region, as well as a description of the current socio-economic conditions and trends, which can be disseminated and discussed with key stakeholders.

Successful examples of coping strategies used in the past, or examples with a useful learning point can also be presented to the stakeholder group. Such discussions can provoke conflicts between stakeholders. The project team must be aware that is not the objective of the APF to solve such conflicts, but to reach consensus on the issues where there is convergence or common ground (Box 2-4). At this point, the priority areas of concern, as well as the coping strategies adopted in the past, should be identified. An agreed assessment can then be elaborated, including the strategies currently accepted as successful. This information can be acquired through meetings, focus groups or workshops, where a number of different techniques (e.g., diagrams, tables, flow charts) are used to obtain information. Information about "conceptual models", which can be used at this stage, is given in TP4. Examples of how to engage stakeholders at a community level to obtain this information can be found in several case studies (Box 2-5). The team will want to identify those techniques that are appropriate to their region.

Access to and presentation of information is an important part of levelling out power differences between the stakeholders and with the project team. This can be difficult, as some may be reluctant to present their work or ideas in a manner they perceive to be an oversimplification of reality, while other stakeholders may feel alienated and disengage from the process if information is presented in a manner that is at too complex a level or relies on the use of jargon. A local-level process may need to be preceded by an awareness-raising campaign in order to engage people and give them a clearer understanding of what may happen and how it might affect them or the group that they represent.

As outlined in the Nigeria case study (Box 2-5), historical climate data also needs to be obtained for this Component of the APF (e.g., climatic variables, frequency or intensity of extreme events and documentation on the immediate impacts). Stakeholders can document the measures or strategies they use or have used in the past to cope with those events. This provides a collective understanding of how the various social, economic and environmental systems might behave under different climatic conditions (see TP4, Figure 4-2 for a schematic overview).

Table 2-2: *Potential Adaptation Policy Framework stakeholders (adapted from Aguilar, Y., 2001).*

Stakeholders	Interests and Roles
Global Environmental Facility (GEF)	• Support capacity development for adaptation where this is a national priority • Support adaptation projects agreed under the UNFCCC, such as Second National Communications and National Adaptation Programmes of Action
National government and ministries (e.g., agriculture, health, environment, education); early warning systems and disaster prevention institutions	• Honour international agreements and participate in international negotiations on regional programmes • Implement sectoral policies, programmes and plans • Improve local human development • Build capacity and develop effective mechanisms to solve local problems • Reduce the risk of local, climate-related damage
Local governments	• Solve local problems • Develop local capacity • Finance local plans and programmes • Strengthen local institutions • Prevent local climate damage and disasters
National/regional research centres and universities	• Contribute to solving national and regional climate problems affecting vulnerable human systems and ecosystems • Build permanent national and regional capacity for addressing climate change • Develop national and regional approaches to address climate change with a developing country perspective
Local environmental/ development NGOs	• Facilitate the organisation of local people and identify action to fulfil local needs • Finance local development programmes and projects • Develop capacity (e.g., technical, financial, human, institutional) • Strengthen local institutions
Local communities/people affected by climate risks and damages	• Improve or preserve health, education and housing • Improve or preserve land and aquatic productivity • Decrease local vulnerability to climatic risks • Improve or preserve adaptive capacity for coping with climatic risks

Once the basic information has been collected and summarised, the links may be identified between climate and the chosen regions and/or sectors in relation to the socio-economic situation and the current state of vulnerability. A report containing a summary of the stakeholder discussions and this initial analysis can be presented back to all the stakeholders who have been involved in the process up to this stage to enable them to check that it is a fair account. Indicators and models that relate climate events, the socio-economic context, and the impacts of climatic hazards can then be identified, tested and agreed either using data in the report or with the stakeholders themselves. These can then be used to evaluate future vulnerability.

2.6.3. Component 3: Assessing future climate risks

Who is involved?

Essentially, the same stakeholders engaged in Component 2 will be involved in Component 3 – stakeholders involved in the policy-making process and in decision-making in the relevant sector, and stakeholders that have been involved in developing scenarios of the possible climatic and socio-economic futures.

Tasks in Component 3

Adaptation projects that undertake Component 3 should, at this stage, have a brief but clear description of climate change projections, the socio-economic future scenarios related to these projections and a brief review of previous impact studies (e.g., done by the project team in Component 2). Stakeholders involved in the policy-making process and in decision making in the relevant sector (Table 2-1) will decide what planning horizons to work toward for the chosen region/sectors (TP5).

Much adaptation in the developing world relies on people's previous experience in dealing with climate-related risks. Their perceptions of the risks they encounter currently, and how they

Box 2-5: Using rapid rural appraisal techniques to elicit information from stakeholders
Jos Plateau, Nigeria, Environmental Resources Development Programme

The objective of this study was to identify viable projects to address resource problems faced by people in the tin-mining region of Nigeria's Jos Plateau. Researchers focused on two communities – Marit and Wereng. Identifying priority projects required reliable, yet quick and cost-effective, appraisals to be performed by researchers in collaboration with community residents, members of the relevant departments of Jos University and representatives of local government and non-governmental offices.

In the past, rapid appraisals had been criticised for only studying areas that were easily accessible, for focusing exclusively on the elite or affluent community members, and for scheduling according to needs of researchers rather than the needs of the local communities. Researchers had also failed to recognise the value of indigenous knowledge and did not report back to the communities on what they had learned, or how the information would be used.

To avoid these biases, the study team used the Rapid Rural Appraisal (RRA) approach, which incorporates the following concepts:

Appropriate precision – gathering information at a sufficient level of accuracy. If you need monthly rainfall information, do not collect daily data.

Optimal ignorance – understand what you don't need to know and don't waste time getting it.

Value of indigenous knowledge – local people can have important information to share, and should also be informed of the findings of studies.

Triangulation/Iteration – ensure that you are getting a realistic picture by comparing the information from one source with that from other sources.

Flexibility – this turned out to be a key concept for this study, as logistical problems shifted the timeframe considerably.

Interactive teamwork – a small team with mixed skills, each member assigned a specific role.

The study areas were identified using a Rapid Rural Reconnaissance process (Chambers, 1983). In this process, the local people identified the most vulnerable areas. This is important when secondary data sources (maps, reports, etc.) are of poor quality or out-of-date.

Data collection – The team used a number of techniques to create a history of the communities: past events, how they had affected the community, and effective responses. **Qualitative methods**: in-depth interviews; informal, spontaneous conversational interviews; semi-structured interviews (topics were pre-selected, but not the actual questions) and standardised, open-ended interviews (structured questions). **Diagram techniques**: participatory mapping of the community; transect walks through agricultural zones; Venn/Chapatti diagrams of organisational structures. **Trend analysis**: daily activity charts (chart people's locations throughout the day); seasonal and annual calendars.

Having synthesised the RRA data, the team – together with the community – identified the key issues, grouped and prioritised them. The Marit team decided to take a multi-purpose approach and identify projects that could involve more than one key issue at the same time. They came up with 22 possible projects, and reduced these to nine "best bet" projects. The Wereng team undertook a similar project identification process. To assess project viability, the Wereng team used the following criteria: productivity, sustainability, stability, equity, cost, time to benefit, social, technical and institutional feasibility.

Conclusions

Considerable, but perhaps not unusual, logistical problems were encountered during the study (e.g., vehicular failure, inadequate catering facilities, lack of timekeeping). Many of the lessons learned related to how to involve external agencies in rural development. Overall, team members felt that the objectives of the study were satisfactorily achieved. One issue that became apparent during the process was the absolute necessity for follow-up, including training, to institutionalise the lessons learned, and project identification, to ensure that there would be action on the identified projects.

Source: Presentation prepared by Anthony Nyong for the workshop "Climate Change, Vulnerability and Adaptation: AIACC Development Workshop", Third World Academy of Sciences, Trieste, Italy, 3-14 June, 2002; and interim workshop reports.

view these changing in the future, should thus be included in the design of strategies to cope with future climate change. Examples of how this could be done using a stakeholder-driven approach are given in TP4 and TP5 (also Jones, 2000; Hulme and Brown, 1998).

Participatory scenario building, simulation, role play, visioning and back-casting are techniques that can be used with stakeholders to construct possible futures resulting from the combination of possible "coping ranges" and possible future "climate change". (Descriptions of these techniques are given in Annex A.2.2.). This kind of analysis can be used to explore questions such as: What if the climate changes but the coping range does not? What if the predicted climatic changes are to be generally positive, but the socio-economic projections suggest that the coping ranges will decrease? Because both of these factors change with time, there are many more dynamic situations that can be investigated.

Future risks can also be evaluated using impact thresholds (TP4). This concept suggests that certain thresholds can be identified in a system – thresholds that, if crossed, will lead to marked deterioration in the resilience of the system. These thresholds can be established using models, as well as the knowledge and experience of stakeholders, and their perception of possible futures.

The analysis of how to recover from future climatic (or socio-economic) shocks that might weaken the capacity of a system to adjust involves significant uncertainties. Planning and policy horizons are crucial for this analysis (TP5). Groups responsible for planning and policy processes with long time horizons will need to be able to take potential climate change impacts into account. As such, they may represent an important group of stakeholders that should be involved in this Component of the APF. For example, stakeholders involved in dam construction, with a time horizon of more than 50 years, and in national park management with an even longer horizon will benefit greatly from the availability of information on future climate vulnerability and risk. Similarly, international negotiators for transboundary water use might need to know the long-term future scenarios for that resource. In other sectors the planning horizons may be much shorter, and it may thus be harder to persuade relevant stakeholders to make provisions for adaptation. In these cases, examples of climate variability impacts in the past may be useful.

The project team will likely choose to synthesise stakeholder input on the possible climatic and socio-economic futures. These syntheses can be disseminated, with an executive summary, to local or regional policy makers. Strategies to raise public awareness of these possible futures and to influence policy makers to include these results in their agendas should be discussed and agreed by the team.

The case study below (Box 2-6) shows how farmers in Mali used a participatory approach to plan for future changes to make the best use of scarce resources – in this case, by identifying methods for improving soil fertility.

2.6.4. Component 4: Formulating an adaptation strategy

Who is involved?

At this stage, all stakeholders have a role to play, particularly local, regional and national policy makers.

Tasks for Component 4

At this stage, stakeholders will have determined the scope of the issues of interest and identified the links between climate and the sector or region under consideration. They may have considered the future climate and socio-economic scenarios and discussed the implication of these for the sector or region. Stakeholders may undertake a cost-benefit analysis, or other evaluation and prioritisation processes, for the adaptation measures suggested to assess the feasibility of implementing such measures (TP8).

Together, the project team and the stakeholders can initiate a process for evaluating the viability of the proposed adaptation strategies and identifying key areas for further action. Policy makers play a key role in this step. Proceedings of workshops, technical reports and a summary for policy-makers can be disseminated and used as a guide to the next stage of the adaptation process.

2.6.5. Component 5: Continuing the adaptation process

Who is involved?

All stakeholders, including the range of policy makers.

Tasks for Component 5

The aim of this task is to sustain the adaptation process, including the selection of appropriate adaptation mechanisms (TP9). The national and/or regional meetings described in Activity 4 should have resulted in an in-depth evaluation of the results and the identification of a list of priority areas for action to reduce vulnerability.

In some countries the adaptation policies designed during the APF process might not influence immediately the policy-making processes, or even may not be included in the national or regional agendas. However, those goals can be achieved on the long run, if this process is sustained through the stakeholders and if they are able to replicate the process in other sectors or regions.

Activity 5 is the point at which the project team and stakeholders start implementing an action plan to address these priority areas, begin crafting realistic next steps to achieve these goals, and determine how the results can be included in existing plans and budgets. This can be done in a formalised way, as outlined in Table 2-3.

Other actions that could be considered include: increasing

Box 2-6. Participatory approaches to plan future changes: A case study from Mali

A participatory action research process was developed by the Malian Farming Systems Research team to assist farmers in southern Mali to improve their soil fertility management practices. As more land is being brought under cultivation, the traditional practice of allowing land to lie fallow to restore soil fertility is becoming increasingly rare, leading to widespread depletion of organic matter and nutrient reserves of the soil. As there are a variety of farming and soil fertility management systems in Mali, solutions for an "average" farmer and an "average" field would not be sufficient.

A collaborative learning and action approach was used, which enabled the farmers to play an active role in finding solutions. The Participatory Action Research (PAR) process had been developed by the Farming Systems Research team (Equipe Systèmes de Production et Gestion des Ressources Naturelles) of the Malian Agricultural Research Institute (IER: Institut d'Economie Rurale), with the aim of assisting farmers to improve their soil fertility management practices. The PAR process comprises four phases: (i) diagnosis/analysis, (ii) planning, (iii) implementation, and (iv) evaluation. After the diagnosis phase, the planning, implementation, and evaluation phases are repeated on a yearly basis, in a continuous active learning cycle.

The first element of the diagnosis stage is to ask the participants to list the criteria that they feel reflect the diversity of soil fertility management strategies. The participants were separated into groups of older men, women and younger men in order to show the different perspectives these groups have on the issue. The criteria were divided into two types – indicators that refer to "proper" soil fertility management, and socio-economic characteristics of the households that might influence soil fertility management. After this, all the farming households in the village were classified as "good", "average" or "poor", according to their ability to manage soil fertility. Five test farmers from each group were then asked to participate in the remaining PAR process. The villagers themselves, in consultation with the researchers, selected farmers on the basis of their interest in learning and their capacity to exchange information with their peers.

Farm level Resource Flow Models (RFMs) were used to analyse the soil fertility strategies. On large sheets of packing paper, test farmers drew the different elements of their farms, such as grain stores, fields, animal pens, and compost piles. For each field, both present and preceding crops were noted. Afterwards, farmers drew arrows to represent resource flows entering and leaving the farm, as well as flows between fields and other farm components. Quantities were given in units used locally, e.g., cart loads, baskets. The arrows were labelled with approximate quantities. By visualising these flows and how they were managed, the farmers were able to discuss the present situation and to identify any improvements they could make with scarce resources. The RFMs also became a means of communicating with other farmers. The next stage was the development of a planning map. The test farmers were asked to visualise their plans for the next year. Improvements to be made were marked onto a new map of the farm, with estimated resource uses added, and other flows marked on as before. These were then presented to other farmers at a village meeting where the technical implications were discussed. As the work was done, the actual resource flows were marked on to the planning RFMs, and discrepancies between what was planned and the final usage were discussed.

The RFMs' advantage over formal surveys is that the flows are visualised, allowing more reliable and complete data collection; omissions or mistakes are easier to spot. RFMs are context-specific and easily understood. It was shown that the RFMs used by the farmers allow for the collection of information that can be successfully transformed into management performance indicators, soil nutrient flows and partial balances. This process improves both the farmers' and the researchers' understanding and knowledge, and creates a common ground for creative interaction between researchers and farmers that can lead to finding ways to use the scarce resources more efficiently.

Source: Defoer, Toon (2002) "Methodology on the Move: Case studies from Mali and Kenya on methodology development for improved soil fertility management". In *Agricultural Systems Special Issue: Deepening the Basis of Rural Resource Management*. Gujit, I., J.A. Berdegué & M. Loevinsohn (Co-ordinating Editors) and Hall, F. (Supporting Editor). A collaboration of ISNAR, RIMISP, IIED, ISG, CIRAD-TERA, INTA, ECOFORÇA with the aid of grants from the European Commission and the International Development Research Centre, Canada.

farmer access to micro-insurance schemes, developing indigenous seed banks or providing access to agricultural machinery through co-operative structures. For each of those or other next-step actions, the questions in the top row of Table 2-3 must be thought through.

At the action planning stage, the project team may wish to scale back its facilitation and guidance role. If the process has managed to build sufficient capacity among the stakeholders, they, or a network of them, can step in to undertake the roles formerly played by the team. If this handover is successful, the responsibility for carrying out the action plan is taken on by these stakeholder groups and an "adaptation community" is essentially formed. Alternatively, the project team can continue to play a mentoring role for some time before the stakeholder groups feel confident enough to take the lead. In any

Table 2-3: *Examples of next action steps*

Example action and actors	Who can help us?	Who may be resistant?	What resources do we need? (time, money, skills)	Where can we get support for resources not currently available?	Who will take a lead on the prioritised action?
Increasing farmer access to markets through support of rural road building schemes	Ministry of Rural Affairs, local businesses, Chamber of Commerce, farmer co-operatives	Ministry of Transport, Ministry of Finance, environmental groups	$1,000,000 in first 10 years would provide many jobs locally for low skilled workers	Local businesses, NGOs, multinational corporations with an interest in the area (cash crops)	Ministry of Rural Affairs Regional or local governmental agencies Farmers' organisations

case, the project team and stakeholders will both have a role in monitoring and evaluating the performance of the adaptation measures and the next steps of the adaptation.

2.7. Conclusions

In synthesis, there is no "one size fits all" solution to engaging stakeholders for enhancing adaptive capacity. However, a few key points can help guide the process:

- Why engage stakeholders? Because they have knowledge and ideas that are relevant to the process, decisions made will affect them, and they are more likely to consent to such decisions if they feel they have contributed to making them.
- Decide what level of engagement is appropriate (Fig. 2-2: Ladder of participation) and which are the key stakeholders related to each APF Component.
- Be clear about the aims and objectives of the engagement, how it should operate and what is expected of participants.
- Encourage and support those who are unfamiliar with voicing ideas and information.
- Use techniques that are appropriate for the group involved and type of information required.
- Decide which techniques are appropriate and feasible to feed back useful information and results to the stakeholders involved.

Stakeholder involvement will be developed in a context where political differences, inequalities or conflicts might come up. The project team should find ways to build agreements and to resolve such issues where possible.

Every situation is different. Having decided the kind of information it requires, the team then needs to decide who should provide it, and the most appropriate technique to obtain it, cross-checking, if necessary, with another technique (triangulation). Annex A.2.1 suggests sources of information that may be useful in designing the team's approach. A variety of techniques related to the participatory approach are described in Annex A.2.2. Some require planning and others take only a few minutes to complete. Some are quite formal and others less so. In the end, people will engage more if the process is enjoyable.

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ANNEXES

Annex A.2.1. Sources of information about different methods of participatory approaches

Books

Participatory Workshops: A Source Book of 21 Sets of Ideas and Activities
Robert Chambers (2002), Earthscan, ISBN 1 185383 862 4 (paperback). Available from http://www.earthscan.co.uk. This text is a good sourcebook of information on how to run workshops including lots of practical advice and common mistakes.

Participatory Learning and Action: A Trainer's Guide
Jules N. Pretty, Irene Guijt, Ian Scoones and John Thompson (1995) International Institute for Environment and Development (IIED). ISBN 1 8998 2500 2. Available from: http://www.earthprint.com. This guide is a valuable collection of advice, tips and methods for participatory approaches. The focus is mostly on participatory rural appraisal but much would also be relevant for APF workshops.

Enhancing Ownership and Sustainability: A Resource Book on Participation
International Fund for Agricultural Development (IFAD), Coalition for Agrarian Reform and Rural Development (ANGOC) and International Institute of Rural Reconstruction (IIRR) (2001). ISBN 1 930261 004. Email: publications@iirr.org. This publication is a collection of short reviews of participatory approaches and experience.

Facilitator's Guide to Participatory Decision-Making
Sam Kaner with Lenny Lind, Catherine Toldi, Sarah Fisk and Duane Berger (1996), New Society Publishers. Available from http://www.newsociety.com/bookid/3705. This is a useful introduction to how to build consensus and make sustainable agreements with groups. Also gives advice on how to handle difficult group dynamics and individuals.

Power, Process and Participation: Tools for Change
Rachel Slocum, Lori Wischhart, Dianne Rocheleau, Barbara Thomas-Slater, eds. (1995), London, Intermediate Technology Publishers. This book talks about the history of participatory processes, how to apply them and some methods.

Embracing Participation in Development: Wisdom from the Field
Meera Kaul Shah, Sarah Dengan Kambou and Barbara Monahan (1999). Care-US. Available online from: http://www.careinternational.org.uk/resource_centre/civilsociety/embracing_participation_in_development.pdf. This is a field guide to participatory tools and techniques. It contains a lot of insight from experience mainly based on the Participatory Learning and Action (PLA) approach.

Developing Technology with Farmers: A Trainer, Guide to Participatory Learning
Laurens van Veldhuizen, Ann Waters-Bayer and Henk de Zeeuw (1997). London: Zed Books. Available from: http://zedbooks.co.uk. This book is focused on farmers, but much of the material is more widely relevant. It is designed to stimulate active learning.

Resources on the web

PRAXIS, Institute for Participatory Practices. http://www.praxisindia.org This site has a collection of guidelines, examples, tips for trainers and experience gathered at a workshop.

Participation Resource Centre, Institute of Development Studies, University of Sussex. http://www.ids.ac.uk/ids/particip/index.html. This site holds over 4000 documents. A limited document delivery service is available. Email: participation@ids.ac.uk.

Sources of information about running stakeholder engagement processes

Multi-stakeholder processes for governance and sustainability
Minu Hemmati (2002). London: Earthscan, ISBN 1 85383 870 5. http://www.earthscan.co.uk. A practical guide that explains how multi-stakeholder processes can be organised and implemented in order to solve complex issues related to sustainable development.

The Power of Participation
Institute of Development Studies Policy Briefing Issue No. 7 (1996). Available online at http://www.ids.ac.uk/ids/bookshop/briefs/brief7.html. This publication is a summary of Participatory Rural Appraisal: what it is, how to do it and some of the problems.

The new orthodoxy and old truths: participation, empowerment and other buzz words. Stirrat, R.L. (1996). In *Assessing Participation: A debate from South Asia*, Bastian, S., Bastian, N, eds., New Delhi: Duryog Nivaran/Konark Publishers. This publication provides a useful critique of participation.

Annex A.2.2. Tool box of exercises for running a participatory workshop

The tools described below are examples of techniques that can be used at different stages of a participatory workshop. This is by no means an exhaustive list. (For more ideas and information about techniques, see the sources list in Annex A.2.1). Participatory processes are numerous and flexible. If one method does not appear to be working, you can try another.

Adapting existing methods or making up your own exercises will make the process more appropriate to your own set of circumstances.

Techniques for the start

Paired interviews

This is useful for finding out what the participants' expectations are. It can be a useful way to raise questions and uncertainties or address misconceptions.

Participants are split into pairs and each is asked to interview their partner. Questions focus on their background, reasons for attending and what they hope to achieve by participating. After five minutes they report back to the whole group. If it is a large group, feedback can be restricted, e.g., to saying "Name two things you hope to achieve in this process". If group consent has been given, these can be recorded, and the record can then be referred to in the evaluation of the effectiveness of the process.

Source: Participatory Learning and Action: A Trainers Guide, Jules N. Pretty, Irene Guijt, Ian Scoones and John Thompson, International Institute for Environment and Development (IIED) (1995). ISBN 1 8998 2500 2. Available from: http://www.earthprint.com.

Hopes and fears

This is a good way to step back from the content of the process and allow participants to share any worries or misconceptions they might have brought with them.

Participants are divided into small groups of four to six people and each group is given a piece of paper. Each group is asked to write down any fears or concerns they may have had before coming. This should be done quickly (five minutes). Each group is then asked to report back to the larger group. The facilitator then has the opportunity to empathise and reassure the participants, and give any relevant information about the process that may previously have been unclear. The facilitator can then ask the question "What can I do to reduce your concerns?" This may lead to a discussion of ground rules.

Source: Newstrom, J.W. and Scannell, E.E. (1980). Games Trainers Play, United States, McGraw-Hill Inc.

Expectations and ground rules

This helps to determine what participants do and do not want from the process in terms of the content of the session, the format of the meeting and the practical details. It can provide insight into how much consensus there is.

Each participant is given a number of small pieces of paper. On each piece they are asked to write one thing that they do or do not want from the session in terms of content, format, etc. These are then grouped and fed back to the group. They can form the basis of ground rules. It also gives the facilitator an opportunity to address expectations that may not be met.

Source: Participatory Learning and Action: A Trainers Guide, Jules N. Pretty, Irene Guijt, Ian Scoones and John Thompson, International Institute for Environment and Development (IIED) (1995). ISBN 1 8998 2500 2. Available from: http://www.earthprint.com.

Agenda setting

If the agenda is to meet the needs of the participants, there has to be a certain amount of flexibility in the planning process. At the workshop, participants could be asked to write on a piece of card one item they would like to be addressed. The cards could then be sorted and an agenda drawn up to cover these items. The group could prioritise the items: each participant is given a number (three to five) of sticky dots (or crosses made with a pen) and is asked to mark those items they perceive to be the most important.

Techniques to promote discussion, scope issues and identify gaps

Buzz groups

This is a method for putting aside time to think. It allows participants to work through their emerging thoughts before presenting them to the whole group. Buzz groups can be used in many situations – e.g., after a presentation of new material and before questions are asked from the audience. A buzz group can enable participants to think through any parts they were unclear about in the presentation or would like further information on. Having had this opportunity, they will then be more ready to contribute questions.

Participants are divided into pairs and the facilitator proposes a topic for discussion. One starts as the listener and the other is the thinker. At half time the roles reverse. During the thinking turn each person is encouraged to think out loud. They do not have to make sense; this is an opportunity to collect and develop thoughts at one's own pace and in one's own way. The listener says nothing but listens attentively. The roles then swap.

Source: Langford, A. (1998). *Designing Productive Meetings and Events: How to Increase Participation and Enjoyment,* South Oxfordshire District Council, Permaculture Academy and South Oxford District Council.

Brainstorming

A brainstorm is a quick way to get a group to produce a list of ideas, questions, issues or topics for later discussion. An appointed person records the suggestions. The meaning can be clarified, but the recorder should not comment on, judge or praise the suggestions as they come in. The recorder does not participate in providing suggestions. The participants should be encouraged to think as creatively as possible and not be too concerned about practical realities at this stage. The list can later be sorted and prioritised (see Delphi technique, next).

Card sorting, Delphi technique

This is a similar process to brainstorming except that suggestions are recorded on small pieces of card, one suggestion per card. The participants or the facilitator then clusters the cards into themes on the wall or on the floor. Duplicated ideas can be removed. The list can be prioritised if necessary.

Spider diagrams

This can be used to both generate ideas and link ideas together into themes. Write the issue of interest – e.g., institutional barriers to adaptation in Peru – in the centre of a large piece of paper. Then write down any interconnected ideas, thoughts, and/or questions, and draw lines between the ones that are linked. Continue until no more can be found. This can either be done in one large group, or by smaller groups that can later compare and contrast their different diagrams.

Source: Participatory Learning and Action: A Trainers Guide, Jules N. Pretty, Irene Guijt, Ian Scoones and John Thompson, International Institute for Environment and Development (IIED) (1995). ISBN 1 8998 2500 2. Available from: http://www.earthprint.com.

Nominal group technique

This gives participants the opportunity to generate solutions to problems as individuals, and then come to a collective view on priorities. Each participant is asked to write down solutions to a question, e.g., how to encourage the business community to consider climate change impacts. This is done in silence. Participants are then given the opportunity to feed back to the group and the ideas are recorded. Any misunderstandings are clarified and a final list prepared. Participants are asked to prioritise the solutions by marking the five items they consider to be most important with a pen or sticky dot. The result is a set of independent views rather than a group view. Independent thinking is generally more creative, as there is less pressure to conform.

Source: Oomkes and Thomas (1992). quoted in *Participatory Learning and Action: A Trainers Guide*, Jules N. Pretty, Irene Guijt, Ian Scoones and John Thompson, International Institute for Environment and Development (IIED) (1995). ISBN 1 8998 2500 2. Available from: http://www.earthprint.com

Carousel

This is a semi-active technique to get people addressing different problems in a single issue or different aspects of the same problem, e.g., what are the barriers to effective participation for different groups (children, elderly, women, disabled people)? A series of questions or topics (two to five) are posed at different stations in a room or in different rooms. The group is divided into smaller subgroups (the same number as there are stations). Each station has a recorder who notes down responses. After a set time (5-10 minutes) the group moves on to the next station and repeats the process until all the questions have been covered.

Johari's Window

This technique explores the difference between professional and local people's knowledge, and helps to highlight inherent prejudices and preconceptions about the value of each.

Participants are asked to fill in the following matrix with examples from their own experience. This can be done on a general level – for professionals and locals – or on a more specific level, for administrators, small businesses versus landless people, small farmers, etc.

	They know	They don't know
We know		
We don't know		

Sources: Luft, J, (1970). Introduction to group dynamics, quoted *in Participatory Learning and Action: A Trainers Guide*, Jules N Pretty, Irene Guijt, Ian Scoones and John Thompson. International Institute for Environment and Development (IIED), (1995). ISBN 1 8998 2500 2. Available from: www.earthprint.com *and Chambers*, R. (2002). *Participatory Workshops: A Sourcebook of 21 Sets of Ideas and Activities*, London: Earthscan.

Techniques for participatory analysis

Sources: Various, see Annex A.2.1

Maps

Maps provide a holistic picture of an area; they are useful in discussions of location, distribution, access to resources and

vulnerability. Maps can illustrate social, economic or environmental features (or combinations of these) and can be provided for discussion or developed by the participants using paper or other materials such as sand or clay. The discussions that result from developing or using maps indicate the relative importance of the various features on the map for the participants. For example, maps drawn by women of their local community generally differ quite considerably from those drawn by men in the importance placed on the different buildings and facilities.

Listing and combining

Similar to the brainstorming and Delphi techniques described above.

Calendars and timelines

Calendars organise information in chronological or seasonal order. This helps in recognising patterns that are related to time. This is useful in working out community work patterns.

Timelines show a sequence of activities or changes over time. Their impact on the community can then be investigated by overlaying other trends such as migration from the area, changes in farming practices, etc.

Ranking and scoring

Ranking is used for comparison of items based on criteria set by the group. For example, households could be ranked in terms of their wealth or well-being. Scoring can be used to identify strengths and weaknesses of different items so that they may be compared. This could be done by individuals or the group. Scores can be compared with past scores or scores for items from different areas to observe trends. This technique can be used to prioritise adaptation measures (TP8).

Diagrams

This tool helps participants to visualise information and how it relates in a system. Diagrams show how different elements interact, and how strong these links are. Venn diagrams show organisational linkages. Flow charts can be used to illustrate flows of information.

Techniques for evaluation

Sources: *Participatory Learning and Action: A Trainers Guide*. Jules N. Pretty, Irene Guijt, Ian Scoones and John Thompson (1995). International Institute for Environment and Development (IIED). ISBN 1 8998 2500 2. Available from: http://www.earthprint.com; and *Participatory Workshops: A Sourcebook of 21 Sets of Ideas and Activities*. Chambers, R. (2002), London: Earthscan.

Smiley sheets

A simple sheet is given to each participant. One side has a smiley face on it. On this side, participants are asked to write something they like about the process or activity. On the other side, there is a sad face. On this side, participants write something they found difficult about the process or activity, and how they would have done it differently.

Evaluation wheel

The group should first decide the criteria to be used for evaluation. These could be based on the expectations discussed at the beginning of the process. There should not be too many criteria (fewer than ten). Each participant is then asked to draw a wheel with the same number of spokes, as there are criteria. The spokes should then be labelled with one criterion each. The spokes represent scales from low or zero in the centre, to high or ten at the edge. Participants are then asked to indicate on the spoke their assessment of the course with respect to each criterion. The dots can then be joined. If done on overhead transparencies, the different evaluations can be compared to give the degree of consensus between individuals.

Hopes and fears scoring

Take the hopes and fears given by the participants at the beginning of the process (see *Techniques for the start* section). Turn any negative comments into positive or neutral ones, e.g., "I am worried that I won't have a chance to give my opinions" could become opportunities to speak. A matrix is then drawn up with the hopes and fears listed down the side and five columns to the right of this with a face at the top of each. The expressions on the faces vary from very sad the far left, to very happy at the far right, with a neutral face in the middle. Participants are then asked to indicate with a pen mark or a sticky dot how they feel the different hopes and fears have been dealt with overall.

Feedback boards

These boards provide an opportunity for participants to write anonymous comments about the process and ideas for improvements. They can be present throughout the process. In addition to voicing their problem, participants should be encouraged to suggest practical solutions to the difficulties they encounter. Comments can be read back to the group, with ideas for how they might be tackled.

Representatives

Ask the participants to suggest one or two representatives. Participants could tell these people any concerns they have and

the representatives would then report back to the facilitators. Any changes suggested would then be fed back to the whole group.

Paired interviews

See above: *Techniques for the start*

Other techniques

Source: Van Asselt, M.B.A., Mellors, J., Rijkens-Klomp, N., Greeuw, S.C.H., Molendijk, K.G.P., Beers, P.J. and van Notten, P. (2001) *Building Blocks for Participation in Integrated Assessment: A Review of Participatory Methods*. International Centre for Integrative Studies (ICIC) Working Paper: I01 – E003. Langford, A. (1998). *Designing Productive Meetings and Events: How to Increase Participation and Enjoyment,* South Oxfordshire District Council, Permaculture Academy and South Oxford District Council.

Consensus conferences

A consensus conference is a public enquiry centred around a group of citizens who are asked to assess a socially controversial topic. These lay people put questions to a panel of experts, discuss the experts' answers, and then negotiate amongst themselves. This results in a consensus statement in the form of a written report for policy-makers and the general public. The report expresses their expectations, concerns and recommendations at the end of the conference.

The lay panel should have no vested interests in the issues but should be chosen to represent different attitudes towards the issue. The group is balanced according to relevant factors such as age, gender, education, occupation and area of residence.

Focus groups

A focus group is a planned discussion in a small (four to 12 members) group of stakeholders facilitated by a skilled moderator. It is designed to obtain information about preferences and opinions in a relaxed, non-threatening environment. The topic is introduced and, in the ensuing discussion, group members influence each other by responding to ideas and comments. In focus groups, scientists are not usually involved as full participants and play the role of facilitator or observer.

In one-to-one interviews, it is assumed that individuals know what they feel and that they form ideas in isolation. When a new idea is being tested or the issue is controversial, social scientists have noted that people often need to listen to other opinions before they form their own viewpoint. The opinion of an individual may also shift during the course of a discussion. The focus group thus enables viewpoints that might not have come forth in individual interviews and allows analysis of what might influence shifts in opinion.

Group members are generally strangers to each other, but all have something in common; this has been shown to make them more likely to communicate freely. Being strangers, they know that they are unlikely to see each other again and are thus less inhibited about sharing their thoughts and opinions.

Citizen's jury

Citizen's juries are based on the rationale that, given adequate information and opportunity to discuss an issue, a group of stakeholders can be trusted to make a decision on behalf of their community, even though others may be considered more technically competent. Citizen's juries are most suited to issues where a selection needs to be made from a limited number of choices. The process works better on value questions than on technical issues.

The jury is made up of a number (12-24) of stakeholders (with no special training) who listen to a panel of experts (witnesses) who are called to provide information related to the issue. The stakeholders are chosen at random from a population appropriate to the scale and nature of the problem. Selection of the members of the jury is based upon several characteristics, largely gender, education, age, race, education, geographic location, and attitude toward the question in hand. The jury is supposed to represent a microcosm of the community, including its diverse interests and subgroups. There are some doubts as to whether such a small group can really be representative of the diversity of opinion in the larger community. Does a middle-aged woman represent all middle-aged women? Some think it can only represent the community in a symbolic sense.

A panel chooses experts with no interest (or stake) in the outcome. They represent several points of view, and additional experts can be called by the jurors to clarify points or provide extra information.

Scenario building

In scenario analysis, stakeholders create and explore scenarios of the future in order to learn about the external environment and to understand the decision-making behaviour of the organisations involved. This approach enables the exchange and synthesis of ideas and encourages creative thinking. This method is particularly useful for addressing complex issues and uncertain futures, where decision-making is generally based on non-quantifiable factors, and where it is important to establish a dialogue between the key actors in order to plan for the future.

All stakeholders, including decision makers and scientists, will be actively involved in the process. Key issues or questions relevant to the subject are identified. From this, key trends and driving forces can be determined. These may then be prioritised

to determine which are the most important or uncertain. These strands can then be fleshed out to create the "story line", from a beginning to an end. Following the initial workshop, there may be a period of reflection where the trends and indicators developed for the different scenarios may be tested for robustness and plausibility.

Visioning

Visioning gives people the opportunity and the space to say how they would like things to be in the future, without having to sort out the problems of today. A vision is a statement of how one would like the world to be. Goals are the practical components of visions. For example, one person's vision may be for a car-free society. Their goal might then be reducing their family's car use by 50% by the end of the year. Visioning may sound like dreaming, but holding a well-developed vision of the future helps to give a realistic appraisal of the current situation. Having developed a vision, a process of "back-casting" may then be used to bring the vision back to the present day and, thereby, identify steps that may be taken today to reach the ideal future.