Chapter 4

Livelihood assessment tools

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This chapter presents livelihood analysis concepts, and provides an operational model for livelihood analysis in the context of wetland systems.

It recommends a generic 'nested' sampling approach, and gives guidance on a range of data collection methods.

Eddie Allison/Darwin Integrated Wetland Assessment project

1 Livelihood assessment tools

This section presents the livelihood assessment tools. It includes:

- ✔ *A discussion of the sustainable livelihoods analytical framework and its application to the wetlands management context*
- ✔ *Research design and sampling*
- ✔ *Guidance on selecting and using the tools presented*
- ✔ *The livelihood research tools*

L1 Overview

Livelihood assessment involves the application of the sustainable livelihoods analytical framework to rural households' productive activities and related socio-economic systems and conditions. Livelihoods analysis emerged from rural development research during the 1980s, as it became recognised that for many households, particularly the poorer ones, agricultural systems alone were not their only — or even their main — economic basis. A growing awareness of the diversity of rural livelihood practices, and the dependence of many rural households on common property or open access natural resources (for instance fisheries, common forests and grazing lands) has led to the widespread use of livelihood analysis, leading to a better and more detailed understanding of how rural households access and use natural resources.

In the wetlands management context that concerns us here, livelihood analysis is used to understand the following:

- The livelihood status, patterns and strategies of wetland-dependent individuals and households, and how these are changing over time
- The particular livelihood features and constraints of poor households, as distinct from the better-off or richer families in wetland communities
- The institutional context of wetland-based livelihoods at village level, with emphasis on the factors that inhibit or facilitate livelihood choices and options for the poor
- Community natural resource management institutions and their interactions with the livelihood strategies and access to resources of the poor in these communities

In pursuit of these aims, a 'modular' field research method is advocated as illustrated in Figure 21.

The method consists of four key steps:

- District, site and location level assessment (involving gathering of secondary data and interviews)
- Village level assessment (involving an initial overall group discussion and Participatory Rural Appraisal (PRA) exercises to clarify social stratification, livelihood characteristics and institutional issues)
- Sub-group assessment (involving mainly focus group meetings and interviews)
- Household and intra-household level assessment (involving household survey for quantitative and qualitative livelihoods data collection, plus a set of components specific to livelihood wetland resource use)

This method seeks to ensure that livelihood oriented wetland use and use-values are systematically conceptualised within a livelihoods context, rather than the livelihoods research being

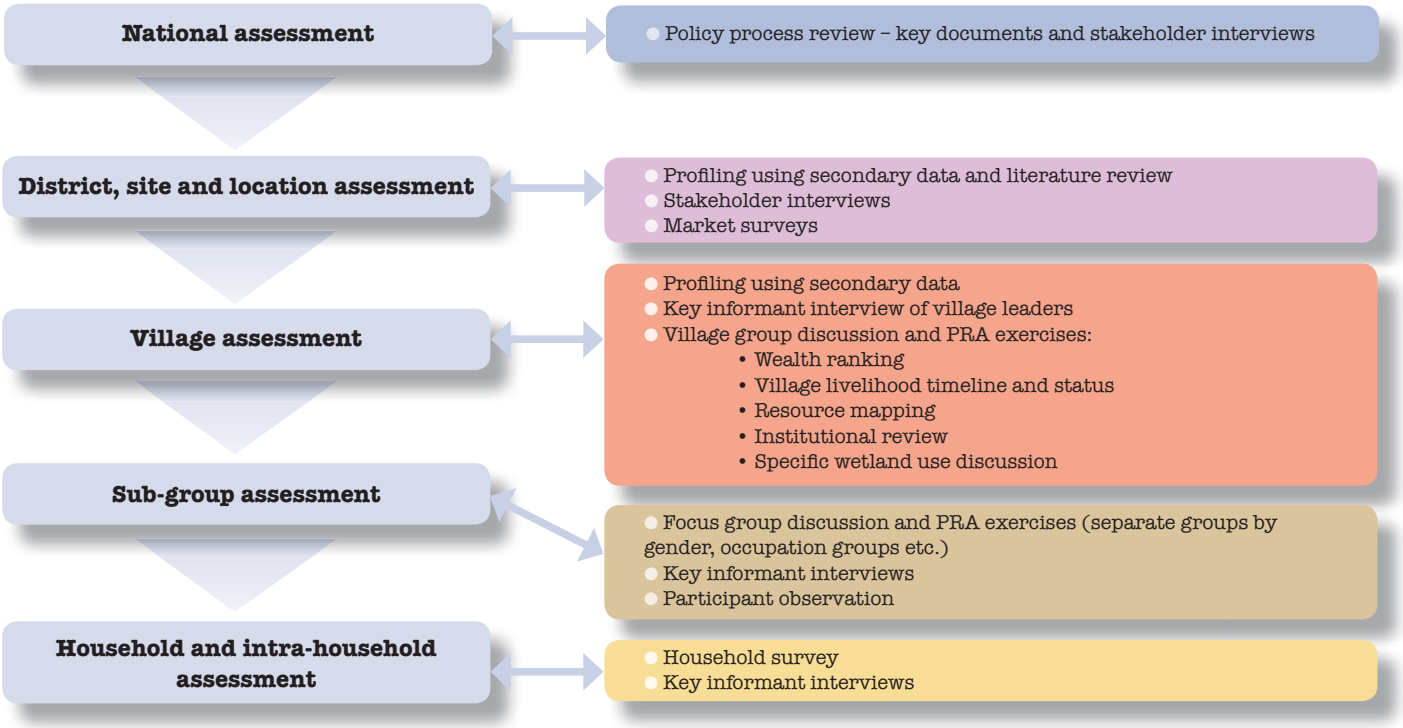


Figure 21: Livelihood assessment: stages and methods

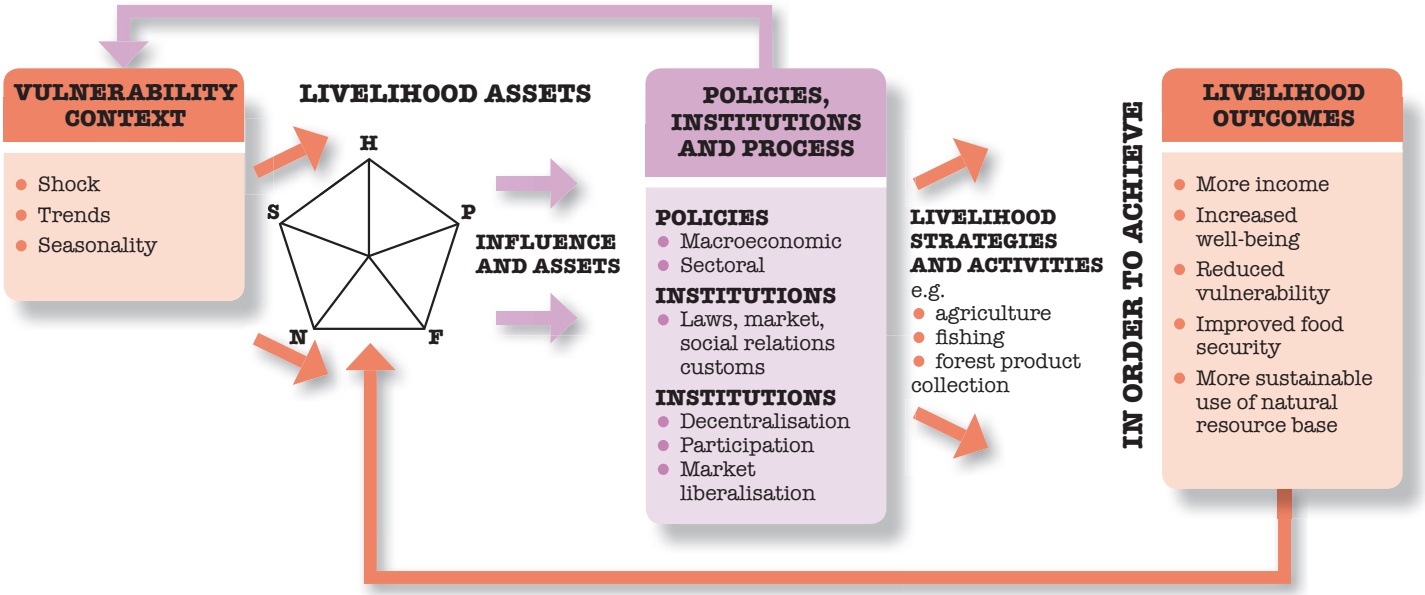


Figure 22: The Sustainable Livelihoods Framework (SLF from DFID). Legend: H: Human; P: Physical; F: Financial; N: Natural; S: Social

seen as peripheral to wetland biodiversity assessment studies. The overall framework for the livelihoods work is based on the Sustainable Livelihoods Approach, which is described in more detail in Section L2.

The following pages propose a set of fieldwork methods for investigating the livelihoods of households dependent on wetland resources in low income countries. The methodologies are based on the following criteria:

- Relatively easy to implement with a small team comprising one or two social science researchers trained to postgraduate level in conjunction with a wetland resource management specialist, and two to three field assistants or enumerators
- Can be achieved within a 7-10 day research period per village, with scope for return visits to validate information
- Achieves a balance between cost, feasibility and statistical representation or defensibility[1]
- Aims to involve wetland resource users, local authorities and village residents in the research process, through use of participatory techniques, return visits to synthesise and check preliminary findings, and to provide channels of communication of local-level issues to decision-makers at district, national and international level

This chapter seeks to provide a core livelihoods assessment toolkit. For reasons of space and brevity it is not intended to be a fully comprehensive and specialist methodology, such as would be needed for specific policy-oriented livelihoods research. The later would for instance require additional detailed focus on micro-macro institutional links (for example, the impact of fisheries regulations on local level fisheries management) and engagement with relevant policy processes in the countries where research is being conducted.

L2 The sustainable livelihoods conceptual framework

The livelihoods framework has emerged from rural development debates as a conceptual approach to understanding and analysing how rural households depend for their security not only on agriculture, but also on a diversity of other natural resources. It brings together assets and activities of human populations and illustrates the interactions between them. The Department for International Development (DFID; UK government) has developed a standardised framework, as shown in Figure 22. The various components of the diagram are explained below.

The key concept illustrated here is that household livelihoods are based on the use of assets in livelihood strategies and activities. This is within a vulnerability context, and livelihoods are also mediated and affected by 'policies, institutions and processes'. Ultimately activities lead to outcomes which are hopefully improvements of the existing condition in various ways.

The original livelihood model illustrated in Figure 22 has been gradually adapted and developed through field application (see Scoones 2009). Here we recommend use of a more explicitly operationalised model (Figure 23), to focus on the integrate wetland issues (based on Springate-Baginski and Blaikie 2007).

The fundamental social and economic unit is considered as the *household*, conceived as the social group which resides in the same place, shares the same meals and makes joint or coordinated decisions over resource allocation and income pooling.

Households depend on a range of productive *assets* or *capitals*, which they may either own privately, or access as common

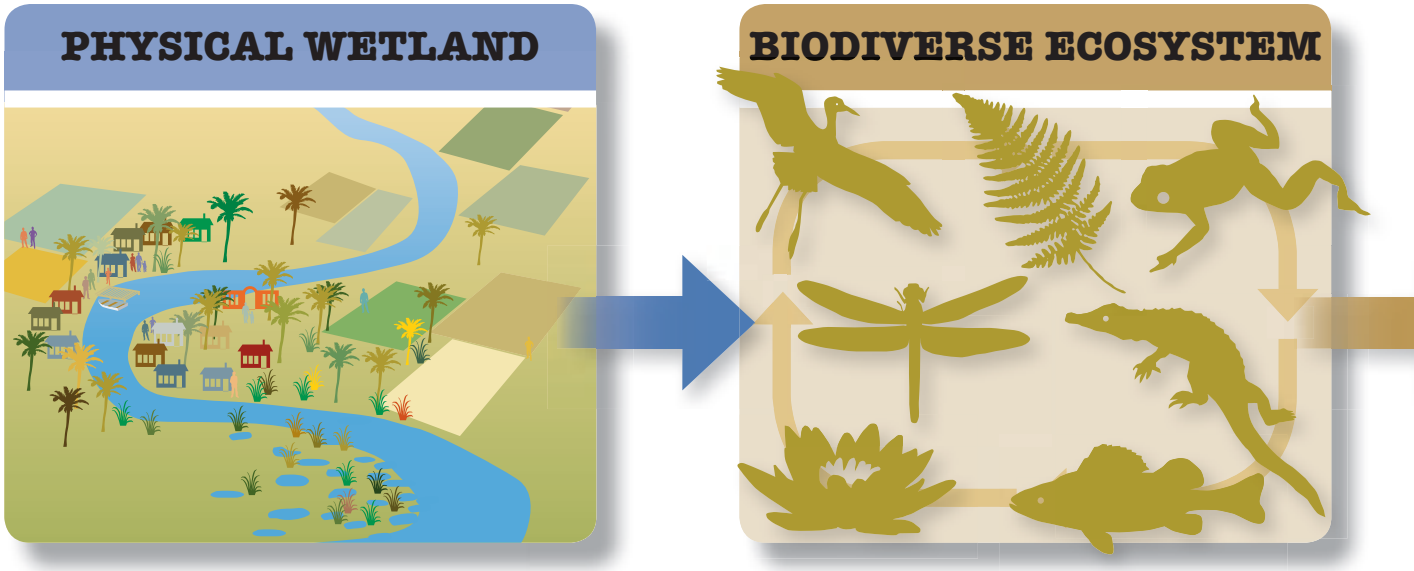


Figure 23: Adapted sustainable livelihood analytical model

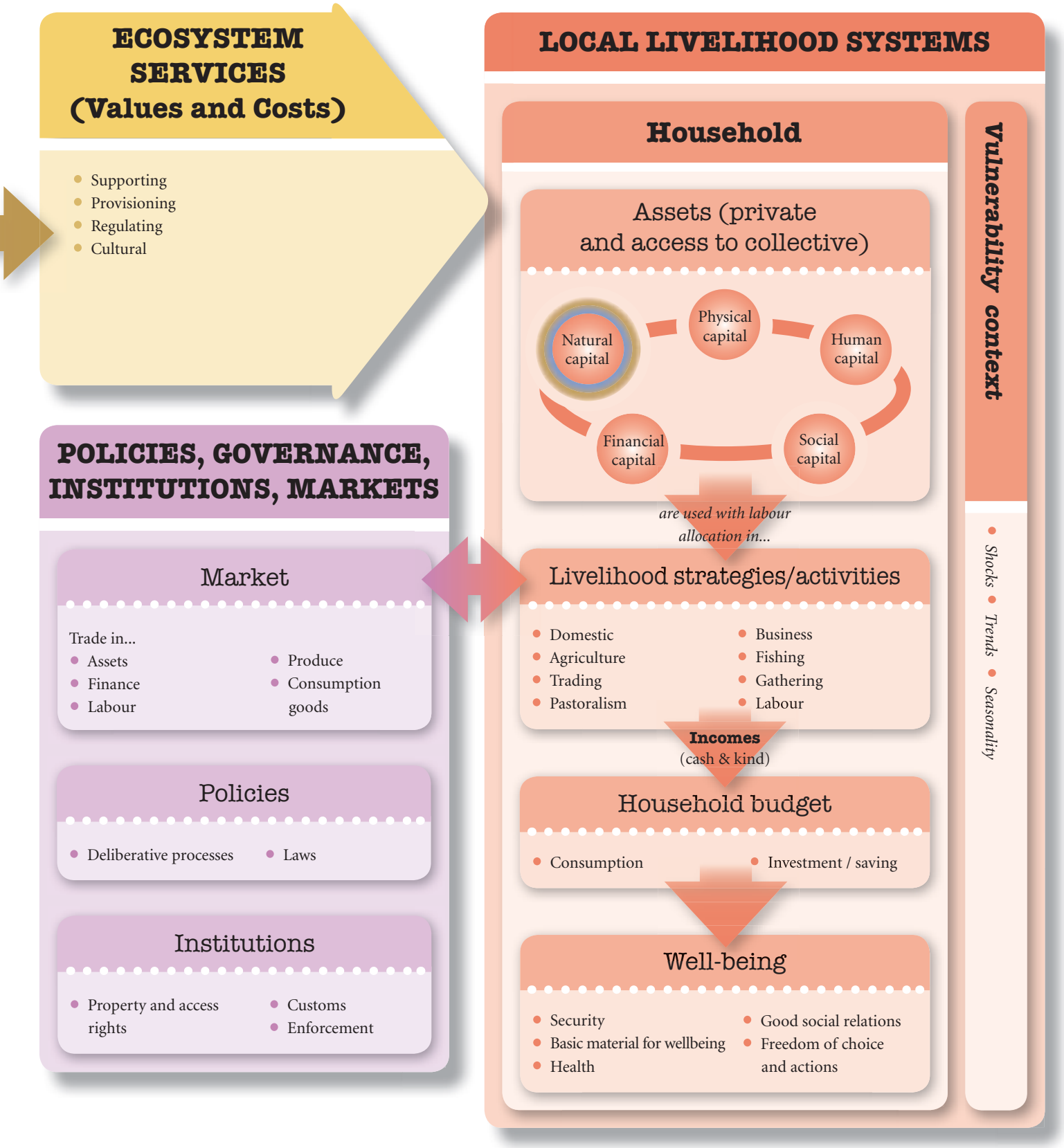
property, or even use as open access resources. These capitals are categorised into five distinct types:

- *Human capital*: this refers to the household members' 'capabilities' in terms of the number of members and their age, health, education, knowledge, skills, and capacity for work. Indigenous technical knowledge relating to species identification, harvesting and use is a form of human capital of particular interest here.
- *Physical capital:* this refers at household level to the physical equipment and tools that are used in production. At the most basic level it can include the house, boats and fishing gear, bicycles, livestock and so on. At community level it also includes access to infrastructure such as harbours, road networks, clinics, schools and so on.
- *Natural capital:* wetlands and the biodiverse ecosystems they support are seen as 'natural capital', in the sense that they are productive assets which provide a range of ecosystem services to households. Households may privatise areas through clearance for cultivation, and communities may also evolve customary institutions around common access and use of 'natural capital' such as fisheries in order to ensure sustainable offtake levels. Forms include fish stocks, areas of river or lake leased or accessed by licence, agricultural or forest land owned or accessed and so on.
- *Financial capital:* households' savings, credit (and debt, which is negative capital), insurance and so on. At the collective level it may be accessibility of credit.
- *Social capital:* the kinship networks, associations, membership organisations and peer-group networks that people can use in difficulties or turn to in order to gain advantage[2].

Households employ the productive capitals discussed above, in combination with their labour allocation in livelihood strategies, in order to generate incomes and wellbeing. Within communities a range of activities can be observed, including domestic activities (which are all too easily neglected by researchers through gender bias), agricultural cultivation, gathering or hunting/ fishing for a range of forest or wetland products, artisanal processing, trading, labouring and so on. Strategies can also relate to people's consumption choices (e.g. 'doing without' or the sale of assets).

Livelihoods incorporating small-scale fishing are typically occupationally diverse or geographically dispersed, and sometimes both (Allison and Ellis 2001; Allison 2005). Mobility and migration is an important component of many fisherfolk's livelihood strategies (typically involving both men in the catching sector, and women in the post-harvest sector).

The incomes generated (which may be in kind, for instance grain or fish, or in cash through trade), will then be allocated according to budgeting decisions. Some will be consumed, and some may be invested (for instance spent on productive assets or production inputs such as seeds) or saved (or indeed used to pay debts). Households exist within an uncertain environment, and livelihood sustainability is affected by external factors, referred to as the *vulnerability context*[3], reflecting the ever-present risk of seasonal fluctuations, other shocks, and underlying trends in livelihood conditions that are beyond the household's control. Trends might include decreasing catch rates, increasing prices for fish, and factors unrelated to fisheries that nevertheless impact on fishing households, such as rising costs of food staples or medicines. Shocks include storm damage to shore facilities, toxic algal blooms, fuel-price hikes and currency devaluations that affect the costs of fishing inputs and market prices for fishery products. At a household level, illness or death of a family member and the theft or loss of



a fishing net are obvious shocks. Household resilience against shocks can involve both short-term coping strategies and long-term adaptation measures (Ellis 1998).

Private assets represent private wealth. And as the distribution of private assets is typically uneven across households, those households with more assets are more 'wealthy', and are generally more resilient to socio-political or environmental shocks and more able to take advantage of opportunities.

Access to both assets and activities, and the level of incomes derived, is mediated, enabled or hindered by *policies, institutions, governance* and *markets.* This can include social relations, organisations and longer-term processes of socio-economic

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A field assistant diving for mussels during survey work on the upper Chambeshi River (Upper Congo)

change. It includes access and rights regimes and how they work – or don't. (These are of course at the heart of fisheries management.) The Sustainable Livelihoods Approach helps ensure that any fisheries or management intervention considers the range of resources that people may be able to draw on and the factors that may help some to do so, while hindering others.

Finally, this framework points to the households' livelihood outcomes, in terms of their state of *wellbeing*. A livelihood is sustainable if people are able to maintain or improve their standard of living related to wellbeing and income or other human development goals, reduce their vulnerability to external shocks and trends, and ensure their activities are compatible with maintaining the natural resource base – in this case the fish stocks and other aspects of the wetland ecosystem they are using. The MEA (2005) indicates a holistic range of wellbeing indicators relevant here:

- Security
- Basic material for good life
- Health
- Good social relations
- Freedom of choice and action

Understanding how people succeed or fail in sustaining their livelihoods in the face of shocks, trends and seasonality can help to design policies and interventions to assist people's existing coping and adaptive strategies. These may include improving access to education and health care facilities, strengthening rights to land for settlement and agriculture (i.e. not just rights of access to fish stocks), reforming local tax and licence systems, providing financial and enterprise development services (and not just credit for purchase of fishing gear) and promotion of diversification[4] – all issues seldom addressed in fisheries management and policy.

To summarise, in terms of assessing local livelihood systems as part of an integrated wetland assessment, we will be looking for data on:

- Household and collective capital assets (and the property and access rights relating to them)
- Household labour allocation to different livelihood activities across the year, and the types of resources used in activities
- Income levels (cash and kind)
- Household budgeting, between consumption, investment and savings
- Vulnerability context
- Policies, governance, institutions and markets, and the different ways in which they affect livelihoods
- Overall wellbeing
- Patterns of social stratification and wealth ranking

L3 Nested research design and sampling choices

We recommend a 'nested' modular research design in which data are collected at different levels: from the site level, to sub-locations within it, to village/settlement level, to the household and individual level. This allows the research team to understand the multiple scales at which livelihoods are practised and influenced. Sampling choices are inevitable. It would be too costly in terms of time and money to ask every question to every individual in the target population, so we must narrow down data collection to just the key data we need, and ask a subset of the whole 'population' that should be as representative as possible, within the resource constraints. Therefore the first step is to identify the target population, and then to select within it according to sound principles. It is essential that we are explicit in HOW and WHY we select our study sample, in order to establish the credibility of the data. Sampling choices depend both on the size of the area and on the time and budget available. If severely constrained, cutting the number of household surveys is probably the best way to shorten the overall process without excessive loss of data quality.

Our suggested nested sampling approach:

1. **National and regional level:** Here we need to understand the policy and governance context of the wetland and its use. Policy and policy process review can be conducted through identification and interview of key informants, and review of key policy documents.
2. **The wetland site:** this will have been already selected. It will be important to gather secondary data and interview stakeholders and key informants at this level. Also a market survey can be conducted at the district headquarters.
3. **Locations within the wetland site:** we recommend purposive selection of up to three locations in the designated area. These should be chosen to reflect the variety of different physical, socio-economic and institutional circumstances (for example, varying across an environmental gradient from dry land to standing water, or the degree of remoteness from markets).
4. **Villages or settlements** (and subgroups within them): within each location we would recommend purposive selection of about three settlements. The aim in choosing the settlements is to represent the differing facets of the particular patterns of resource use being examined at the location. It is important here to be alert to the existence of any marginal or transient groups, and to include them.
5. **Households**: within the settlements we recommend a livelihoods sample survey of about 30 randomly chosen households in each village, thus typically 90 households in a wetland or Ramsar site. The exact number is not critical, and a common sense approach will be needed to vary the size of the sample if settlements are very small or very large. It is important to stratify the sampling of the households by wealth groups in order to bring out clearly the critical constraints experienced by poor households in particular.
6. **Intra-household**: particular individuals within households may be important to interview, for instance women or children who collect specific wetland products. These can be treated as key informants to add detail to the household survey.

L3.1 Location selection

This implies establishing a set of criteria for choosing areas within wetland sites to undertake the assessments. These criteria are as follows:

- Representative livelihood patterns for that wetland (in a broad sense) and significant variations
- Relative extent of rural poverty in different places
- Presence of particular livelihood features considered important to understand for conservation management and policy purposes, or relating particularly to the management issue chosen as the focus of the study
- Geographical spread and agro-ecological or habitat variation
- Logistical feasibility (organisation, distances, budget and so on)

The first of these criteria is a difficult one involving balancing a number of considerations. The critical factor is that the research should be seen to have captured a 'typical' spread of wetland-based livelihood patterns, so that findings have policy and management relevance on a broad scale. An alternative way of looking at this is to avoid locations that are highly atypical in terms of the types of livelihoods and circumstances they represent (for example, the one location that has a fairly developed commercial fishery utilising large motorised vessels, or the one area where there is a luxury tourist resort providing employment).

L3.2 Village selection

Having made a choice of locations or districts, and, usually, zones within those districts to conduct research, the next stage is village selection. Here again purposive choice of three villages should approximate a set of criteria, some of which are similar to those for selecting districts, while others are slightly different:

- Village selection should bear in mind poverty-relative wealth considerations, given the typical poverty reduction focus of livelihoods assessments
- Villages should differ from each other in some important respect, for comparative purposes
- This difference could be varying degrees of remoteness from infrastructure and services, for example: on a main road; on a dry season-only feeder road; lacking proper road access
- Alternatively, villages might differ in the degree of their reliance on the wetland resource, for example: heavily reliant on direct use of wetlands; less reliant; not very reliant

This last criterion has the important implication that just because livelihoods of people who live in or near wetlands are under investigation, this does not mean that all households interviewed need to rely heavily on that resource for their livelihoods. From a livelihoods perspective, as applied to wetland communities, it is interesting that families combine wetland resource use with other activities in a variety of different ways, and for various strategic reasons, and the extent to which a division of labour occurs so that some families specialise in natural resource use, while others do not (for example those providing services to others).

L3.3 Household selection

It is envisaged that the selection of households for interviewing in a sample survey should take place at the same time that qualitative, PRA-type, work is being conducted in a village, and it should be integrated as far as possible with work to value environmental goods and services and relevant biodiversity assessment activities (for example to ensure that information of habitats and species utilised are collected alongside information on their use and value).

The first stage of household selection is for a community wealth ranking exercise (Chapter L8) to be conducted, whereby village households are typically divided between poor, middle, and well-off categories. Then with a list of households in each income-wealth group, a random sample of 10 households is taken from each group. In summary:

- PRA wealth ranking of village households, resulting eventually in three income-wealth groups
- Random sampling from each income-wealth group
- Ten households from the well-off group
- Ten households from the middle group
- Ten households from the poor group
- This gives 30 households in total per village, and
- Ninety households per research district or location

One or two 'spare' households should be included in case selected households are unavailable or unwilling to participate.

While this procedure will yield a statistically defensible sample of households in wetland villages, it may not provide enough detail on the activity of wetland resource use if only a minority of households in the village actually engage in wetland biodiversity-related livelihood activities (as opposed to agriculture and non-natural resource activities). There are several alternatives here. One is to follow the procedure as stated so that at the very least the typical patterns of livelihood in the wetland village are captured, but to add additional wetland-resource dependent households equally across the wealth categories until a sufficiently large sub-sample of such households is captured. The minimum sample size of specifically wetland-dependent households that would enable general things to be said about wetland resource use as an activity in that community is 30 households.

Alternatively, if the objective of the assessment is so definitely oriented to wetland resource use as to exclude those households not directly using wild wetland products from the zone of interest, then the sampling frame can be re-specified accordingly. The entire process of undertaking wealth ranking and sample selection is then done only on those households identified as being involved with floodplain agriculture, hunting, fishing, and gathering of wetland products.

Table 12: Data collection for livelihoods analysis

SCALE OF ASSESSMENT	GENERAL AREAS	SPECIFICS RELATING TO WETLANDS
District, site, locations	• Population level and status • Institutional arrangements and local government • Social service provision	• Physical characteristics and related livelihood use patterns • Market conditions • Conservation policy
Village and subgroup	• History of settlement • Social stratification and wealth-ranking • Main livelihood practices • Spatial location • Policies, institutions and processes	• Demography/migration • Vulnerability/social exclusion • Deliberative processes and governance relations • Resource management
Household and intra-household	• Household assets and entitlements • Activities • Income sources • Expenditure	• Entitlement to resource use • Assets and tools for resource use • Location of resource use activities • Quantities and diversity of resources used/ extracted • Incomes from wetlands (cash and kind)

L4 Selecting and using the livelihood assessment tools in the field research process

This section of the manual contains advice and guidelines for conducting the secondary data collection, key informant, and group or PRA-type research activities in sample villages.

A range of different livelihood assessment tools are needed to ensure that all relevant aspects of livelihood-based wetland resource use are recorded and linked through to economic valuation and biodiversity assessment. Recommended tools include:

- Profiling using secondary data and literature review
- Stakeholder interviews
- Market surveys
- Key informant interviews
- Village group discussion and PRA exercises
    - wealth ranking
    - village livelihood timeline
    - resource mapping
    - institutional reviews
    - others
- Focus group discussion and PRA exercises (separate groups by gender, occupation groups and so on)
- Participant observation
- Household surveys

The scale (district, village or household) at which the data are being collected will influence both the type of data (see Table 12), and the specific tool use to collate the information.

L4.1 Introduction to livelihood assessment tools

The overall objective of using these research methods is the same whenever the objective is to discover the factors inhibiting the ability of people to find routes out of poverty. The interest is in people's livelihoods, whether they are improving or deteriorating, the factors that help them to construct stronger livelihoods, and those that weaken their ability to make a viable living. Also relevant are the factors that cause people to diversify their livelihoods (i.e. that increase the range of different activities that they undertake in order to gain a living).

The setting out of particular methods here should not be regarded as the only way of collecting the different types of information that is sought. It will often prove useful to seek the same information utilising several different methods (such as key informants, group meetings, or spot interviews with individuals) in order to triangulate different sources and reach a multi-faceted view of the topic under investigation.

Many of the sub-sections below pose livelihood issues in the form of questions, but it is not intended that these are necessarily asked in their current form. Researchers will need to think through how they will address each of the issues implied by the question, and what will be the best way of gaining the required understanding. Researchers should seek and note different perspectives, not aim for a single answer. There may, of course, be occasions when everyone widely concurs about a particular issue, but many others when they do not, and silences may sometimes indicate when individuals are reserving their view about something.

The following principles apply especially to Chapters L5 to L6:

1. Focus on ranges of experience and difference, not on 'averages'
2. The prime interest here is poverty, so we need to disaggregate understandings according to different households, strategies, relative poverty and wealth
3. Investigate gender differences for all of these issues, as appropriate
4. Seek understanding, not just description: the 'why', not only the 'what'
5. Probe on changes and trends whenever appropriate
6. Ask about problems, constraints or hindrances faced for any of the issues, if appropriate
7. Vary research methods according to what seems most appropriate – some of the issues that are listed here under group methods may be better approached through interviews with a range of different individuals
8. It is important to have a firm idea about how data gets recorded and written up – good records need to be kept during group meetings, perhaps by someone other than the facilitator, and notes should be written up straight afterwards; the same applies to semi-structured interviews with individuals and households

In summary, the purpose of the qualitative research can be summarised as identifying ways whereby it becomes easier for people to construct viable and improving livelihoods. This implies that:

- We need to know not just <u>what</u> people do, but <u>why</u> they do it. Understanding people's motivations and incentives is critical if they are to be engaged in conservation efforts
- We need to know what it is that enables people to do certain things relatively easily, but makes other things very difficult for them to start up or engage in
- What are the factors in the policy environment – which includes policy institutions of all kinds and levels – that help people versus those that hinder or block people's options and opportunities

The qualitative research methods (Chapters L5 to L12) should precede the sample survey, so that members of the community have already got used to having the assessment team around, and have had a chance to voice their views on a variety of different issues, before selected households are interviewed.

L4.2 The importance of probing further in interviews

- *Blocking or inhibiting factors in people's livelihoods*: A key purpose of livelihoods assessment in the context of poverty reduction and conservation is to discover what stops people from doing things, as well as what helps people to do things. The factors that stop people from conserving resources or taking up new economic opportunities may not be at all obvious, either because they are regarded as 'normal' or because people feel they cannot do anything about them anyway. Cultural factors or social norms that prevent women or men from doing certain things is one example of the first type of reason. Licences and taxes imposed by district authorities is an example of the second type of reason. It is very important that researchers probe further when someone says something like "*this is not worth doing because*...". In many ways, some of the most important new insights of this research are likely to emerge from an understanding of these factors.

- *The Why? Not just the What?:* Field researchers sometimes have a tendency to stop further questions when they have discovered what is happening. For example: "*Do you keep goats?"* is a *what* type of question, and if the respondent says "*Yes*", then the field researcher usually moves on. However, for good livelihoods research, this type of question needs to be followed by why the person does this thing. From *why* questions all kind of other things can usually be pursued, such as why one thing is better than another, or why someone does this rather than something else. For example, "*Why do you keep goats?", "I keep goats because they provide me with a means of obtaining income when fish catches decline*", "*Are fish catches declining then, or do you mean seasonally?*". In this way a more complex view of the different reasons for pursuing a complex livelihood strategy can be revealed.

L4.3 Outputs from livelihoods fieldwork research

The aim of the fieldwork is to generate a dataset and facilitate its analysis in order to answer the research questions and issues. Findings should be fed into ongoing policy processes such as poverty reduction strategy plans, decentralisation, Ramsar site management plans, and community-based or co-management of natural resources. The work may also provide an empirical foundation to current discussion about the utility of the 'livelihoods approach' for poverty reduction in the context of integrated conservation and development approaches.

L4.4 Data entry, coding, variable names and analysis

After the fieldwork has been completed, the data on the survey forms should be transferred to computer, using a database entry system (OpenOffice Base (freeware) or Microsoft Access (proprietary software)). A database should be designed in which data can be entered in the same format as it appears on the survey forms. The survey forms should be designed for codes to be entered at the time of completing the form, and so for the most part coding should be already done and codes can be entered directly to the computer. Similarly variable names should already be devised, corresponding to the cells for data entry. Data entry formats incorporating checks for data consistency should be provided.

William Darwall/Integrated Wetland Assessment project

Non-timber forest products (NTFP), gathered from within the Stung Treng Ramsar Site being sold in Stung Treng Market

L5 District, site and location level assessment

The main method used here is profiling – using secondary data collection, supplemented as required by key informant interviews. The purpose of this component is to be able to place the village and household level fieldwork in the context of the district and agro-ecological zone – and, most specifically, the wetland site where the assessment is taking place.

Key items required are:

- District and site-level map showing chief agro-ecological zones, forests, rivers, swamps, lakes
- District and site-level maps showing location of survey villages, roads, towns

- District and sub-district demographic data
- Location, number, and level of schools in the sub-district where survey villages are located
- Location, number, and level of health facilities in the sub-district where villages are located
- Agro-ecological data for the district or sub-district where fieldwork is taking place: areas under forest reserves, cultivation, main crops or farming systems (see Chapter 6)
- Overview of conservation and management plans, policies and regulations in force (such as Ramsar designation and planning)
- Any other features of special or notable interest with respect to that district or sub-district, such as recent road upgrades, major public works (dams or irrigation schemes for example), new industries that have come into the district, major problems that are well-known for that district (stealing of nets, lack of transport to market)
- Change in the district: what are the main things that have been changing in this district over the past five years or so? Is it getting richer or poorer? Are income or wealth differences widening or narrowing between different parts of the district? Are people migrating away from or into this district? Are there any events in the last five years for which this district is well-known (environmental change, drought, civil unrest)?

A market survey is also important here to establish the trading conditions for wetland products.

L6 Village assessment

The main methods here are profiling using secondary data and key informants, supplemented where necessary by group or individual discussions.

Key items required are:

- Name of community and parish; its location, with a map showing key features of village and surrounding area
- Number of households and village population
- Ethnic affiliations, linguistic groups, main religions
- Significant migrations into area over the past two or three decades
- Main current sources of livelihood in the village
- Change in the village: what are the main things that have been changing in this village over the past five years or so? Is it getting richer or poorer? Are people migrating away from or into the village?
- Institutions and organisations in the village; what institutions exist within the community? What outside organisations are represented or active within the community?
    - What traditional institutions exist (e.g. traditional chieftancy: is there a traditional chief? How is he (usually!) selected? What is his role? What other 'traditional' institutions exist?)
    - What political institutions exist (village chairman, elected councils, etc.)?
    - What formal organisations exist (e.g. community-level branches of development agencies, official cooperatives)?
    - What community-based organisations (CBOs) exist (fishermen associations, farmers groups, cooperatives, credit associations, social/religious organisations)?
    - What production services exist (e.g. agricultural extension, microcredit services, supply of nets, marketing)?
    - What social services exist (e.g. health clinics, schools)?
    - What non-government organisations (NGOs) exist and what do they do?
- What significant private businesses operate in the locality?
- What development initiatives have taken place within this community in the last 10 years? How were they implemented? What happened? (Probe for history, attitudes, comments). Relevant areas in wetland might include irrigation schemes for rice or crop horticulture, ecotourism, sport fishing and wildlife hunting
- Common property: what key productive resources are held in common by the community? What criteria, rules and

institutions govern access?

- Land tenure: what is the main type of land holding in the village (e.g. private ownership, customary tenure)?
    - If someone wants more land or to start-up farming here, how is access to land obtained?
    - How is ownership, access, control over land distributed between men and women?

Note: when establishing a list of the existence and function of organisations and institutions, it is also important to probe about their effectiveness. Do they actually do anything? How responsive are they to the needs of their members or to the community as a whole? Some supplementary PRA work may be required in order to establish some of these aspects e.g. institutional mapping/Venn diagrams, ranking. Also change is important – which institutions are declining and which are rising in importance?

L6.1 Output

The output of this section should be a village-level report corresponding to the checklist given above. This report should also try to take a critical view of things that do not work, especially institutions that do not work well for the poor. Of special interest is to identify factors in the social and institutional environment that inhibit rather than encourage people from taking advantage of livelihood opportunities or creating new opportunities for themselves.

L7 Group discussions and Participatory Rural Appraisal (PRA) methods

PRA-type work in villages does not need to utilise very complex or lengthy participatory techniques. In many instances, the type of information being sought can best be obtained via group discussions, and these may involve a general cross-section of the village, or groups formed around particular activities or issues (for example migrant fishermen, hunters, people engaged in the wildlife trade, women who gather wild foods, and so on). Sometimes these groups will suggest themselves due to the membership of people in a community management activity (for example a village natural resource management committee), but researchers should be alert to how representative the membership is of such self-defined groups, and sometimes group formation drawing on a wider population and deliberately including poorer members of the community will be more appropriate.

In other instances, specific understanding of strategies and constraints may be more accurately obtained through discussions with individuals and households. This is a matter of judgement on the part of the researcher, and so-called 'triangulation' whereby the same information is approached using several different methods should be considered, especially where there is a lack of clarity concerning the interpretation of issues or events.

The main areas of interest to be covered utilising qualitative research methods are set out in Chapters L5 to L11. These typically provide a checklist of the points that need to be covered in group meetings. They may also suggest other PRA-type activities that should be conducted such as mapping of the seasonal migration patterns of wetland resource users. Sometimes they ask for specific quantitative data on which a consensus view is sought such as past and current prices of fishing gear or fish sales, or perceptions on habitat and vegetation change or resource abundance changes.

It is important that PRA field notes are written up soon after conducting group activities, while the direction of the discussion, and key points raised, are still fresh in the mind of the facilitator. In some cases (see Figure 50 in the appendix) a format for summarising discussions on a single page is suggested.

L8 Wealth ranking

PRA wealth ranking is best conducted by someone experienced in this method. Two main approaches seem to be followed: one depends on a consensus discussion in a focus group meeting; the other depends on household ranking by a number of individuals (key informants) or small groups, with the final division into categories determined by adding together individual rankings (this second method is described in detail below). Note that if done properly, wealth ranking will often yield more than three wealth sub-groups, therefore the re-organisation of the sample frame into three groups must take place after the wealth ranking by amalgamating adjacent sub-groups. Also, wealth ranking can be a valuable exercise in itself, independently of its function as a means of stratifying a household sample. The process of wealth ranking yields valuable information on the criteria utilised within the community to distinguish relative wealth and poverty. In addition, the wealth ranking exercise can be used to draw out information about the dynamics of poverty in the community (i.e. who is moving between wealth categories and what causes these movements).

Initially, this exercise should be conducted with participants themselves choosing the number of income-wealth groupings, and defining the criteria separating one group from another. This information has value for the livelihoods analysis in itself, and field notes from the exercise should be written up. As well as the groupings, the criteria utilised by villagers for distinguishing households are of research interest; for example, the rich may be distinguished by having land holding above a certain size, or cattle above a certain number, or possession of particular types of physical asset, or some combination of these or other

Kong Kim Sreng/Integrated Wetland Assessment project

A troung *(bamboo case) used by fishers in Stung Treng Ramsar Site to keep fish alive before transport to a market*

indicators. Also, the wealth ranking exercise may provide an opportunity to discover something about the direction of change — who is moving into or out of poverty in the village — and the reasons for this.

L8.1 Output

The groups, criteria and other information about the dynamics of poverty discovered during the wealth ranking exercise should be written up for each village. The re-classifying into three groups results in the sample frame from which the stratified random sample of households is drawn (as described in Chapter L3).

L8.2 A wealth ranking methodology

The approach described below follows the wealth ranking methodology of Grandin (1988) closely. Before wealth ranking, simple data collection forms should be prepared in order to record:

- Location, date, researcher name, key informant name and details
- The households ranked in the different groups
- Room for a few extra notes alongside each household name (see step 8 below)
- Room for notes on characteristics of different groups and differences between them.

The principal steps in wealth ranking are:

1. Agree with local facilitator and two or more key informants on:
   i) local concepts and language for describing wealth
   ii) number of wealth categories that informants identify
   iii) a working definition of a household

2. Identify several (three to four) reliable key informants. These should be generally honest, longstanding community members. It is best not to use community leaders or extension officers, but they may suggest candidates. If any informant is reluctant to group people by wealth another should be selected.

3. Introduction. Explain to the informant the nature of the research and the value of knowing about the different problems of richer and poorer families. Ask the informant to give two examples of differences between richer and poorer families to be sure the concepts of wealth are shared. Also check the informant and researcher are using the same definitions for a household.

4. Group activity. List all the households in the village. Best for the chairperson and several others to do this (key informants can be included) – they call out the names as the researcher writes a list. Spend some time on this, as it is important to try to get as complete a list of the households as possible. All should be aware of the 'boundaries' of the particular research location.

5. Each household name should then be written on a small card and the cards shuffled. If the informant cannot read the names on the cards, they are read to him and the informant is asked to place each card in one of a series of piles before him or her, corresponding to the previously agreed understanding of different wealth categories in the village. More than three categories may be used as this does not matter at this stage.

William Darwall/Integrated Wetland Assessment project

Fish being sold in Stung Treng Market

6. Verification. When finished pick up each card and read the names asking the informant again to be sure (s)he thinks they are in the right pile. (S)he is free to move them into a different pile.

7. Ideally no pile should have more than 50% of the households. If one does, the respondents may need to rethink the criteria they are using to define wealth.

8. Additional household information. The interviewer should then go through the cards in each pile and ask whether the respondent feels each household has become more wealthy or poorer over the last five years, or if they think the wealth of the household has not really changed. Responses can be recorded against the list of names on the data sheet. The informant can then be asked to give one or two reasons for the apparent change. This may be sensitive information.

9. After sorting has been verified discuss the nature of the differences between the different wealth ranks. Do not ask about specific households as this might be sensitive information. Usually it is easiest to begin with the richest group. Ask questions like, "*What do the people in this group have in common?*"

10. After completing the wealth ranking, wealth groups should be re-distributed into three income-wealth categories, with advice from the key informants. The three categories should be: the poor, the middle or better-off, and the rich or well-off. In most cases, this regrouping should be straightforward (the rich and the poor stay the same, and other groups end up in the middle). However, if the exercise produces a lot of groups, some thought may need to be given to how these match the poor, middle, rich distinction; and some help from informants may be needed in order to re-classify households in this way.

These three categories then form the basis from which the ten households to be surveyed are randomly chosen. NB the number of households assigned by the wealth ranking to each category must be recorded before the sample is taken, for otherwise this information will be lost when the cards are mixed up or thrown away.

L9 Village livelihood timeline and status

The principal method to be used here is that of the village group meeting, which in this case should be a group that represents a reasonable cross-section of the community. Facilitators should be sensitive to the tendency for a few people to dominate group discussions, and should try to elicit responses from the less forthcoming members of the group. The discussion should aim to discover activity patterns of the village and how they have been changing over the past 10 years, including things that have got worse or better, and some general points on environmental change. Questions asked here could also be asked of selected individuals across different social groups in the village, as a way of confirming understandings. Questions specific to wetland resource use and conservation are given later (Chapter L11). Points to cover in discussion include:

- What are the main sources of income in the village now? Is this the same as five years ago? The same as 10 years ago? Are those sources of income as important now as they were five and 10 years ago?
- What new activities are commonplace now that were rare or did not exist before? Activities that have started in the last 10 years? The last five years? How important are these new activities now for the incomes of people in the village? What

activities have stopped?

- What do villagers consider to have got worse in the last five years? Last 10 years? For those whose standard of living has deteriorated, what are the main things that have caused their lives or livelihoods to go down in the last five or 10 years?
- What do villagers consider to have improved in the last five years? Last 10 years? For those whose standard of living has increased, what are the main things that have got better in the last five or 10 years?
- What have been the main agricultural problems in the village over the past five or 10 years? What has been happening with maize? Other food crops? Livestock? Milk? Both production and marketing problems can be discussed here.
- What has happened to people's access to natural resources over the past 10 years? Access to land for cultivation? Fragmentation of holdings? Distance of holdings from homestead? Access to forests and forest products? Timber? Woodfuel? Water for agricultural and household purposes? Hay for livestock?
- What has been the impact of health issues (e.g. malaria, TB, water-borne diseases) on the village in the view of members of the group? Are many households affected? What are the main effects on people's ability to gain a reasonable living? How has the village responded to children who are orphaned due to this illness? (Note – questions on illness, particularly around AIDS-related illness and death, need to be handled with sensitivity; trained health professionals should be consulted before making any assessment.)
- How has the status of women changed in this village over the past five or 10 years? Are there more women that are heads of households than before? Are there activities that women do now that they did not usually do before? What livelihood activities are women still not permitted to do in this community?

L9.1 Output

Information elicited should be written up in a summary report, and can also be summarised in a matrix format as illustrated in Table 4 in Chapter 4.8.

L10 Institutional review

The same methods can be used here as for the preceding Chapter, possibly even the same group of people can be used provided that this does not result in 'respondent fatigue'. Of special importance here are the factors that inhibit rather than encourage people from taking advantage of livelihood opportunities or creating new opportunities for themselves.

- Are there particular activities in the village that require special permission or a licence in order to be allowed to do that thing? [Make a list of such activities]
- For these activities, what person, or organization or institution grants permission or issues licences? [Link this to the relevant activity]
- What is the cost of getting permission, or obtaining a licence to start-up this activity? Probe here both for official and 'unofficial' costs (e.g. gift payments to traditional authorities or to local officials)
- Are there particular activities that individuals in the group would like to do, but are unable to do because of the costs that are imposed on starting up the activity?
- Are there any restrictions on moving produce (e.g. non-timber forest products, fish, crops or livestock) from the village to the town for sale?
- If so, what are these restrictions? Are payments required to any person or institution in order to move goods from one place to another?
- Amongst the village organisations and institutions which ones are the most helpful for improving people's standard of living? [Rank list in order of priority as given by people in the group]
- What is it that these organisations do that help people to gain a better living?
- Are there people in the village who are excluded for some reason from the benefits that these organisations can provide? If so which group or groups of people?
- Amongst the village organisations and institutions which ones are least helpful, or even block, people from doing things to improve their standard of living? [Make ranked list of unhelpful organisations and institutions]
- What is it that these organisations do which hold people back from gaining a better living?
- Are there people in the village who are particularly disadvantaged by the way these organisations or institutions work? If so, which group or groups of people?

L11 Specific wetland use discussion

Most wetland resources are common property and as an activity, gathering, hunting and fishing pose special problems for investigation, due to the cyclical and seasonal nature of many resources, their varying location at different times and the difficulties of establishing rights of access and ownership. Fisherfolk, for example, tend to be more mobile than settled farmers and are sometimes a different ethnic group from the resident agriculturalists in wetland-area villages. Owners of boats and gears may be different from users of those same assets, and wage (or catch-share) labour arrangements may be prevalent. Qualitative data research can be divided into four main categories:

- General discussion about wetland resource use, in a broadly representative village group meeting
- Discussion about regulations, access and management with members of fishing, hunting and gathering households

Gita Kasthala/Darwin Integrated Wetland Assessment Project

Village meeting in Mtanza-Msona to discuss wetland resource use

(focus group meetings), and key informants, resident in the village

- If relevant, discussion with migrant fishermen or hunters who are temporarily sited at or nearby to the village
- Mapping of migratory movements made by fishermen and other mobile hunter-gatherers

L11.1 Category A: general discussion about wetland resources use

Some main questions in a general village discussion about wetland resource use are:

(a) What do the community consider to be *wetland*?

(b) Overall importance of direct uses of non-farm wetland products for survival in this community? Is this just a minority occupation? Do most households have members that fish, hunt or gather wetland products, or are there some families that specialize while others do not engage in these activities at all? Obtain count of households that do and households that do not make substantive use of wetland products in this village

(c) How big an area is exploited by people based in the village? Do village-based fishers and hunters move around and often fish or hunt elsewhere? [Create maps showing these with GPS coordinates]

(d) Where are the main sites that village-based fishermen and hunters go for fishing? [A map may be helpful here – linked to habitat mapping; create maps showing these with GPS coordinates]

(e) How has the importance of fishing, hunting and gathering changed compared to five years ago? Ten years ago?

(f) Is it still possible in this village for people who were not fishing or hunting before to take up fishing and hunting now? Are fishing and hunting seen as a good way to strengthen livelihoods? What are the barriers for people who want to take up fishing and other common property resource-based activities?

(g) What are the seasonal characteristics of fishing, hunting and gathering as occupations? What are the peak months for catches and harvests, and the lowest months during the year? Draw up a calendar showing seasonal changes in these activities; have there been any changes in the seasonal pattern of resource availability compared to five years ago? Ten years ago? (Reasons for these fluctuations? Weather, drying constraints (e.g. rain), fish and wildlife movements/ availability/depletion etc)

(h) Aside from regular annual patterns of fishing and wetland product harvest, are there cyclical changes that occur across years e.g. very good years for fishing occurring every three years or every five years? What is the recollection of the community about years (over the past 10-15 years) that have been very good or very bad years for fishing (reasons/ understanding of fluctuations – biological stocks, weather, markets, costs?)

L11.2 Category B: access regulation and constraints

Some main questions for discussion with a focus group of wetland product-using households are as follows:

(i) What are the chief regulations about wetland resource access that the village understands to apply to their activities? Do people comply with these regulations?

(j) How are the regulations policed? What is the penalty for non-compliance? Is this an individual penalty or one imposed on the community?

(k) Does the village have its own (community management) system for regulating seasonal, spatial or personal access to natural resources and permitted harvesting equipment (e.g. guns, fishing gears), and how does this work?

(l) Have either formal or village regulations changed over the

past five years? Past 10 years? And if, so how have they changed?

(m) Are there conflicts between the way the village authorities would like to manage access to resources, and the rules that are imposed from outside by government departments?

(n) Do the rules (whether village-based or imposed from outside) mean that some individuals have permanent rights to use natural resources while others are always excluded?

(o) Have outsiders been coming in to use wetland resources over the past five years? If so, what effect have they had on the state of the resources (abundance, distribution, ease of harvest)? What effect do new resource users have on the way that resources are managed here?

After discussing these questions in a village group situation, they should be followed up by discussions with key informants to check on the understanding of different people about matters of regulation and access. For example, individuals who are in authority in the village, selected people who specialize in the various natural resource sectors (for example fishing, hunting, charcoal-making), and selected people who do not engage in these activities in order to find out why they do not if they are located in proximity to these resources.

L11.3 Category C: external resource users

This category comprises migrant fishermen and other migrant resource users who are located at or nearby to the resident villages. Questions to be asked of this group are:

(p) Where are you from? (place of permanent residence)

(q) Which resources are you using? What is the main resource that you come here to use?

(r) Duration of stay in the wetland? Other places you carry out these activities? Always go to the same places? Where are these places? Do you come every year? Or do you come only when you hear that there are good fish stocks (for example) here? [This set of questions should allow a map of places on the lake, river or coastline that are favoured by this group of resource users to be drawn, together with info on the time they spend at each location]

(s) Why do you come to this village in particular? What are the advantages of being located here? [List reasons given by the group, and follow up particularly on relationships between the migrants and the resident community e.g. exchanges, trading arrangements etc.]

(t) Do you need permission from the village authorities to be here? How do you get this permission?

(u) Is it easier or more difficult to get permission to fish/hunt/log/gather at this site compared to five years ago? Ten years ago?

(v) What rules and regulations (e.g. rules about when you are allowed to fish, or about net size etc.) apply to your activities? Are these good rules? What do you see as the good or bad points about these rules?

(w) In your place of permanent residence what is the main activity of your family (e.g. farming etc.)? How important is fishing/hunting/gathering for you (i.e. for your livelihood) overall? (e.g. very minor, about a quarter, half etc.)

(x) In general has access to natural resources in the wetland got more difficult? Or less difficult? Over the past five years? The past 10 years? What are the reasons for access getting worse or better?

L11.4 Category D: mapping movements

This is the mapping exercise alluded to in Chapter L7 above, and is about discovering the movements that wetland resource users make to different parts of the lake in order to sustain their catches and harvests. This does not require 'formal' research methods, but will require visiting villages and temporary fishing or hunting camps, at intervals, along the banks of a river or lake, to find out where people are from, and to ask them about the main places that they use resources. Seasonal information about fishing, hunting and gathering locations should be included. Questions asked are where are you from? How long are you here? What other sites do you fish/hunt/gather/burn? In which seasons do you move between these places? For villages visited for PRA or sample survey purposes, this can obviously be done at the same time as the PRA. See Section on Mapping (Chapter 6) for further information on the types of spatial data that should be collected.

L12 Key informant interview

Some people encountered during the research process will evidently have either a better understanding of some of the issues, be more eloquent in explaining, or both. These individuals should be indentified and interviewed separately, either alone or in a group with other 'key informants' in order to probe deeper into the issues, and to test initial insights emerging.

It will be important to interview key informants from marginalised and poor groups, specific occupational groups using the wetland, women, traders and so on.

L13 Household sample survey

Many of the questions in the sample survey (see Figure 51 in appendix) are to do with people's work and incomes. Income is a sensitive matter, which is sometimes difficult to discuss with people, and enumerators should make very clear to respondents that this information is for research use only and no one else will know about it. Sample selection should include some 'spare' households in case of non-cooperation by one or more chosen households. Enumerators should try to develop a good relationship with the family, and should be prepared to

make repeat visits to clarify points that do not seem to make sense or to obtain more complete information.

Enumerators should also be sensitive to gender relations, and where it seems evident that clearer results would emerge by interviewing a particular woman or man separately, then this should be done in order to improve the accuracy of the data (both women and men may conceal details of particular activities and income flows from each other). Some further points about the conduct of the sample survey are:

(a) Aside from gender-sensitive income data, interviews should be conducted with several members of the household present, so that individuals can remind each other of information that requires recall up to one year back

(b) Where information is required of a household member who is absent (e.g. someone out earning wages), a return visit must be done to complete this information

(c) The attempt should be made to collect gender-sensitive income data from the individual concerned – this is likely to apply especially to specialist income-generating activities such as fish drying, beer brewing (Figure 51, Form E) or work outside the home (Figure 51, Form F); one way of achieving this may be to have both a female and male enumerator visit the household, which may make separate discussions with individuals easier to do

(d) After initial completion, the survey forms should be checked carefully for the consistency and accuracy of the information they contain. The proposed range of sample sizes is relatively small, so attention to detail is important. Answers which do not make sense, or which contradict each other in different parts of the questionnaire, should be checked by revisit to the household

(e) Enumerators should have a supervisor, who signs off on the front page of the questionnaire only when completely satisfied with the quality of the data on the form. If there are problems with the replies, a return visit to the household should be made to try and rectify them

(f) In general most of the survey can be completed with a single visit to the household, provided this has been fixed in advance so that the relevant members of the household are there to be interviewed

(g) Note, however, that Form F (Figure 51) must be completed for each individual who has obtained non-farm or non-wetland-based income during the past year, including casual wage work, permanent wage or salary work, self-employment in a non-farm or non-wetland activity like driving a rickshaw, working in a government office, or pension income resulting from former full-time employment

Further reading

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The methodologies presented here are similar to those used during the LADDER survey conducted by the Overseas Development Group, University of East Anglia. Their web-site contains detailed information about the methods and data obtained, including the database (downloadable) that they used to store the data.

See their website:
www1.uea.ac.uk/cm/home/schools/ssf/dev/odg/research/currentprojects/LADDER
and the database link:
www1.uea.ac.uk/cm/home/schools/ssf/dev/odg/research/currentprojects/LADDER/Data

[1] The use of relatively small sample-sizes for household surveys recognises that household survey data is time-consuming to collect and validate, and that such surveys can generate vast quantities of data which are then seldom properly validated and analysed. These drawbacks are well recognised in the major UNDP and World Bank household surveys conducted as part of national Poverty Reduction Strategy Programmes. This approach seeks to complement, rather than replicate these large-scale survey and monitoring exercises.

[2] Some argue that this framework would benefit from the addition of further categories of capital – political and cultural (Sirrat, 2004).

[3] What is known as the vulnerability context in the livelihood framework is conceptually similar to what is termed 'risk exposure' in the literature on vulnerability.

[4] Diversification need not mean diversifying out of fishing entirely; it includes promoting alternative activities that may supplement fishing and reduce dependency on fish stocks.