

RENEWABLE ENERGY AND DECENTRALIZATION (READ)

WORKING PAPER 5

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TOOLS FOR IMPROVING DECENTRALISED GOVERNANCE OF ENERGY

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2 INTRODUCTION

This working paper is an output of the **Renewable Energy And Decentralization (READ)** project, a research project (EP/L002469/1, 2013-2015) funded by the UK Engineering and Physical Sciences Research Council (EPSRC), the UK Department of International Development (DFID) and the UK Department for Energy and Climate Change (DECC), and executed by Loughborough University, Gamos Ltd and Practical Action East Africa.

Over the last ten years African governments have moved increasingly towards decentralised budgets, giving local authorities increased powers and budgets to govern areas that include both rural and urban population. Yet while cities have a municipal authority to consider new ways of supplying energy to its urban citizens, those governing Africa's rural poor in small and medium towns in the surrounding rural hinterlands have rarely considered energy infrastructure.

Existing research indicates that many local authorities in Africa are struggling with the capacities and capabilities necessary to govern the complex social, political and economic situations they routinely face. Required to contribute inter alia to financial management, local and regional economic development, strategic planning in the local government, budgeting procedures, tax collection, procurement procedures and standards, ethics for local government staff and elected representatives, and action against corruption, it is hardly surprising that against this backdrop the demands placed on their time and capabilities would see energy planning neglected. And yet energy - in particular, clean energy for development - is becoming increasingly important not just to them in their specific geographical location, but to the wider region and world more generally.

In a previous working paper for this series, we focused on the Decentralisation of Government in Africa. In order to understand the influence of local governments on clean energy transitions, we provided an overview of the literature on decentralisation in Sub-Saharan Africa. The paper reviewed definitions of decentralisation; traced the extent of decentralisation worldwide and in sub-Saharan Africa, including trends in its development, summarised the achievements, challenges, lessons learned in the past two decades; includes case studies of the process of decentralisation in six African countries; provided an inventory of typical responsibilities of local governments; and concludes with relevance to the wider decentralised energy project.

It identified that local authority capacity across Africa poses a fundamental challenge for successfully implementing clean energy for development programmes. In short, decentralisation could open the way for local authorities to become champions and drivers towards cleaner energy, but at the same time, their lack of capacity and capabilities is currently proving a major barrier to implementing clean energy development in African states. The research project seeks to improve understanding and evidence base of both the opportunities and challenges associated with implementing clean energy for development in Africa.

Working Paper 2b focused on **energy proficiency**. It explored the idea that existing definitions of energy literacy fall short of the robust understanding of the different types of energy knowledge needed by local authority officials. This paper fills those gaps by exploring the acquisition of 'multiple knowledges' and its policy context, reviewing definitions of energy literacy and other relevant knowledges, and presenting frameworks for energy proficiency (both the participatory process of its development and its implementation). Based on this deepened understanding, we proposed a definition and general framework of energy proficiency for decentralised governance.

In this paper we seek to build on the body of work presenting practical guidelines for assessing and strengthening local authority energy proficiency.

This paper is not a structured narrative. This is an ideas paper. It presents a number of ideas, with a heavy emphasis on tables and figures from other publications. It is intended to be a menu of options that local authorities might consider, and from which might find further information.

Chapter 2. The paper notes that good governance capacity is a pre-requisite for good clean energy decision making. Chapter 2 therefore focuses on general tools or assessing and building the capacity of local authorities for good governance.

Chapter 3. In Chapter 3 we introduce focus on the idea that local authorities need an awareness of energy, and will need to make informed choices towards their stated goals on energy. The previous papers have distinguished between authorities having to choose energy supply for their own activities and sources, and how the authority also has to put in place policies to encourage citizens to make the right choices. The Chapter presents a number of tools and experiences mainly focused on local authority access to energy.

Chapter 4. Chapter 4 focuses the public awareness that local authorities might engender. It presents a number of tools that can be used to engage with citizens in assessing their own situation, thereby creating both awareness and an identification of possible solutions.

3 ASSESSING GOVERNANCE AND BUILDING CAPACITY

In order to improve planning and implementation of decentralisation policies, it is important to assess the quality and effectiveness of governance. Any energy project, whether encouraging clean energy adoption by households or commissioning power plants within a municipality, will fundamentally rely on good governance as its foundation.

In Working Paper 1 we noted that local governments in sub-Saharan Africa are endowed with a range of powers and responsibilities which vary from country to country. A list of these responsibilities follows based on the authorities granted to local governments in South Africa (CPS, 2010; ETU, 2013), Kenya (IEA, 2011), Rwanda (Republic of Rwanda, 2011), and Tanzania (IIC, 2008). They are divided into political, fiscal and administrative powers.

Political decentralisation

The range of local authority political powers extend to the following areas:

- Local elections: publishing details of candidates, ensuring voting registration and legal implementation of elections.
- Public participation: Ensuring and coordinating the participation of communities and locations in governance at the local level and assisting communities and locations to develop the administrative capacity for the effective exercise of the functions and powers and participation in governance at the local level.
- Pass by-laws – local laws and regulations about any of the functions they are responsible for. By-laws may not contradict or over-rule any national laws
- Appoint council and sub-committee members as determined by legal framework

Fiscal decentralisation

The level of fiscal autonomy varies by country, but all the countries in this review have powers in these areas:

- Approve budgets and development plans: these plans are often developed and monitored at a central level, but they usually must be approved at the local level, with input and feedback from local governments.
- Impose rates and other taxes: including property tax, income tax, sales tax, and others
- Charge service fees – for use of municipal services like water, electricity, libraries, etc.
- Impose fines: traffic fines, littering or library fines.
- Borrow money: take a loan for a development or other project and to use the municipal assets as surety.

Administrative powers

Local governments have the largest set of devolved powers in areas of administration, including the provision of services, government employment, and regulatory powers.

Provision of services

- Health Services: health facilities and pharmacies; ambulance services; promotion of primary health care; licensing and control of undertakings that sell food to the public; (e) veterinary services (excluding regulation of the profession); (f) cemeteries, funeral parlours and crematoria; and (g) refuse removal, refuse dumps and solid waste disposal.
- Education: Pre-primary, polytechnics, home craft and childcare centres
- Facilities: parks; libraries; beaches and recreation facilities.
- Water, sewage and sanitation: public works storm water management systems in built-up areas; and water and sanitation services.
- Transport: county roads; street lighting; traffic and parking; public road transport; some ferries and harbours.
- Fire Fighting Services
- Local tourism

Employment

- Hiring and firing of local authority officials

Administrative powers and regulation

- Activities: betting, casinos and other forms of gambling; racing; liquor licensing; cinemas; libraries; museums;
- Animal Control and Welfare: licensing of dogs; and facilities for the accommodation, care and burial of animals.
- Agriculture Industries: crop and animal husbandry; livestock sale yards; abattoirs; plant and animal disease control; and fisheries.
- Trade Development and Regulation markets; trade licences; fair trading practices; local tourism; and street traders.
- Planning and development: statistics; land survey and mapping; boundaries and fencing; housing
- Electricity delivery: electricity and gas reticulation and energy regulation; decisions around land use
- Conservation: Implementation of specific national government policies on natural resources and environmental conservation, including soil and water conservation and forestry.
- Control of Pollution: air pollution, noise pollution, other public nuisances and outdoor advertising

Energy is a cross cutting theme in life, and each of these responsibilities can include an energy component. Some responsibilities have a more obvious energy component than others. For instance commissioning health facilities includes choosing the energy supply for the facility. This can often include backup generators. Commissioning street lighting has direct consumption of electricity which needs to be taken into account both from a fiscal point of view but also a carbon and clean energy point of view. Many of the other responsibilities have more tangential impacts on energy planning. For instance, planning of roads can have consequences on transport patterns, and even public participation in governance can have an impact on consumer awareness of energy costs and environmental impacts.

3.1 MODELS OF ASSESSMENT

How then can a local authority determine if they have the capability required for good governance?

LDI (2013) provides a useful framework for tools on assessing governance. ‘Such tools would need to be framed so as to be accessible to the diverse range of actors who work on decentralisation, who have varying backgrounds and interests, as well as different expectations of decentralisation and analytical frames of reference.’ Useful diagnostics would ideally expedite greater practical understanding of:

- How decentralisation, local governance and local development mechanisms are structured and how they do and could interact (e.g. the relationships outlined in Figure 1 and incompletely explored in the literature);
- How these various mechanisms perform (or might perform) in the context of a particular country or location; and
- Which reform facilitators or blockages are likely to emerge or may already require attention to enable more effective decentralisation —some of which may be outside the comfort zone of a particular interested party.

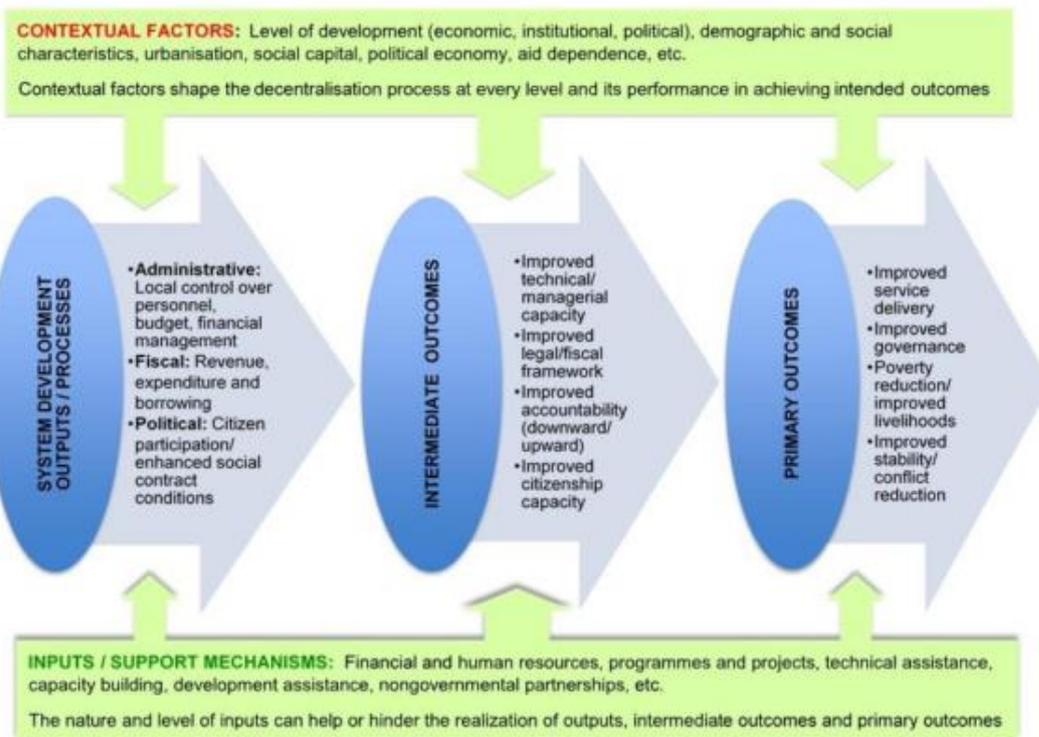


Figure 2-1 Framework for assessing governance LDI (2013)

UNDP (n.d.) has put together a comprehensive toolkit on assessing local governance. It suggests a set of **operationalising principles** to guide assessment.



Figure 2-2 Operationalising principles for assessment of local governance UNDP (n.d.)

Kooy and Harris (2012) provide an analytical tool that was applied to an analysis of a development problem for a local government. This tool could be a useful way to measure and assess governance based on solving a problem identified by local governments.

1. Reflection Problem Identification

- What is the specific problem to be addressed?
- If there is more than one problem, can they be clearly distinguished (e.g., operational and developmental)?

2. Diagnosis Systemic Features

- Why does the problem identified in Stage 1 persist?
- What are the systemic features in place that are relevant to the problem?

3. Diagnosis Dynamics and Incentives

- Why does the problem identified in Stage 1 persist?
- What combination of perceived incentives, shaped by the features identified in Stage 2, influence the behaviour that leads to this problem

4. Prescription What can be done?

- What actions can be proposed that:
 1. Address the problem identified in Stage 1; and
 2. Account for the constraints and opportunities identified in Stages 2 and 3?

Figure 2-3 Steps in a problem-driven approach to political economy analysis Kooy and Harris (2012)

3.2 SETTING A BASELINE FOR ASSESSMENT

There are a number of tools available to support local authorities to set a baseline for assessing local governance.

3.2.1 LOCAL GOVERNANCE BAROMETER

One of the most-used in Africa is the Local Governance Barometer (UNDP, n.d.), produced by Impact Alliance (including PACT; IDASA – The Institute for Democracy in Southern Africa; and SNV – Netherlands Development Organisation). The LGB introduces a “Universal Local Governance Model” that comprises 22 sub-criteria grouped under **five main criteria of good governance**: effectiveness, transparency and rule of law, accountability, participation and civic engagement, and equity (see Table 2-1).

Effectiveness	Transparency and Rule of Law
<ol style="list-style-type: none"> 1. Existence of a clear vision and strategic/operational plans 2. Leadership 3. Good management of financial resources 4. Relevant decision-making process based on reliable information 5. Satisfaction of the population vis-à-vis the access and the quality of service deliver 	<ol style="list-style-type: none"> 6. The existence and application of an institutional legal framework 7. Citizen access to justice 8. The availability and access to information 9. Corruption incidence
Accountability	Participation and Civic Engagement
<ol style="list-style-type: none"> 10. Transparency: accessibility and availability of information related to service delivery, planning and utilisation of resources, achieved results 11. Checks and balances 12. Recourse (existence of objective audits) 13. Government’s responsiveness 14. Integrity 	<ol style="list-style-type: none"> 15. Institutional framework 16. Citizen engagement 17. Civic engagement
Equity	
<ol style="list-style-type: none"> 18. The existence of a charter or a legal framework recognising the rights of whole citizens 19. Equal opportunity to basic services 20. Equal opportunity to power 21. Equal opportunity to resources 22. Equal opportunity to livelihoods 	

Table 2-1 Local Governance Barometer: Criteria and sub-criteria UNDP (n.d.)

Although this universal model remains valid in any country context, it is essential that it is transformed into a “specific/local model” reflecting the local context and local priorities. The development of the specific model is undertaken by local experts and local stakeholders during an initial workshop.

The “local model” is organized like a tree. At the highest level is the Local Governance Index, followed by the 5 main criteria. Under each criterion are the sub-criteria. At the lowest level are the indicators. Depending on context specificities, the local models developed in different countries may vary in terms of the number of levels in the tree.

Specific indicators with a scoring scale are provided for each one of the 22 sub-criteria (see Table 2-2).

Value	Governance Performance
+1	Perfect
+0.75	Very Good
+0.5	Good
+0.25	Fairly Good
0	Neutral
-0.25	Fairly Poor
-0.5	Poor
-0.75	Very Poor
-1	Non-existent

Table 2-2 Scoring Scale for indicators in the Local Governance Barometer UNDP (n.d.)

Scores at the lowest level are calculated by comparing real values (data inputs) with reference values (norms, standards, local references). Scores at the higher levels are obtained by an arithmetic calculation of the scores at the lower level using weighing criteria. All scores have the same value range: 0 to 100. The following table presents two examples of indicators developed for the Anosy Region in Madagascar (Table 2-3).

Indicator	Explanation	Value	Year	Source	Observations	References
1.1.1 Existence of vision	Does the Anosy region have a strategic plan? Value between 0 and 10, 0= strategic plan non existent, 5= strategic plan on-going, 10= strategic plan finalized	10	Feb. 2006	Pact FTU/SDR	Anosy region has a Development Regional Planning (PRD) which has been ratified in January 2005	Report Anosy PRD available in hard copy and in CD Rom
1.4.1 Satisfaction towards quality services	What percentage of the population is satisfied with the quality of services delivered in the Anosy region? 0=nobody is satisfied, 50=half of the persons inquired are satisfied, 100=all persons inquired are satisfied	70	Feb. 2006	Report/ Region		Survey's results (representative sample)

Table 2-3 Two examples of indicators developed for Anosy Region in Madagascar UNDP (n.d.)

3.2.2 GOOD GOVERNANCE FOR LOCAL DEVELOPMENT – GOFORGOLD INDEX

A commonly used tool is the GOFORGOLD Index, which includes 25 criteria (see Table 2-4).

Representation	Participation
1. Elected Councils 2. Elected Village Leaders / Municipal Mayors 3. Voter Turn-out and Voter Participation by Sex 4. Women Councillors	5. Public Forum for Women, Youth and PWDs 6. Existence of Civic Groups 7. Citizen's Capacity to Engage in Decision-making
Accountability	Transparency
8. Control by Central Government 9. Anti-Corruption Policy 10. Independent Audit 11. Codes of Conduct	12. Facilities for Citizens Complaints 13. Right to Public Information 14. Public Review of Budget and Financial Reports 15. Formal Publication of contracts/tenders
Effectiveness	Security
16. Total Sub-National Budget and Expenditure 17. Predictability of transfers in Local Government Budget 18. Total number of Civil Servants 19. Published performance Delivery Standards	20. Conflict Resolution 21. Protection Against Crime and Violence 22. Territorial Boundaries 23. Security of Land Tenure and Land Use
Equity	
24. Affirmative Action for the Poor 25. Affirmative Action for Women	

Table 2-4 Criteria and Sub-criteria for the GOFORGOLD Index UNDP (n.d.)

The scores assigned to each criteria are then loaded into dashboards to measure effectiveness and track changes.

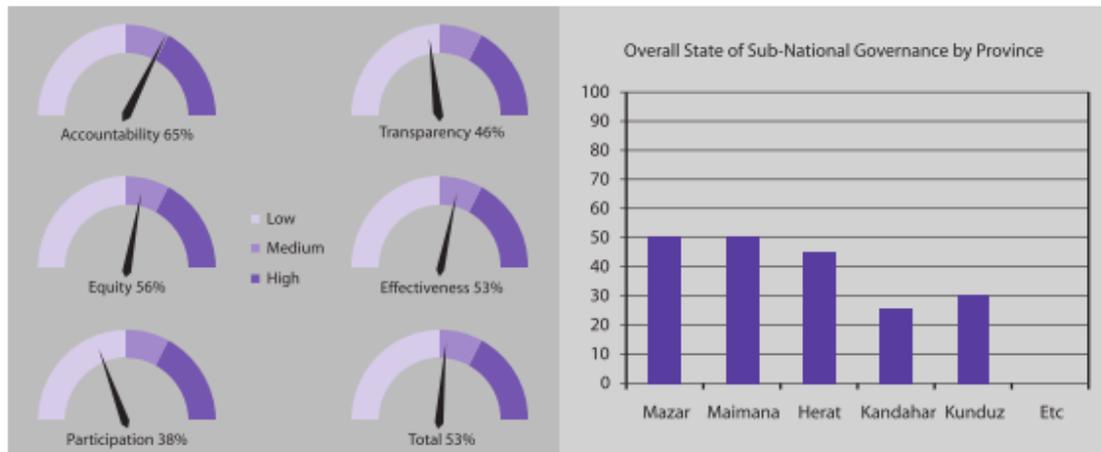


Figure 2-4 Dashboard for GOFORGOLD Index by Province in Afghanistan UNDP (n.d.)

3.2.3 MEASURING MUNICIPAL PERFORMANCE MIDAMOS (PARAGUAY)

Another comprehensive tool uses weighted measures of each indicator to ensure that the results focus on areas that are priorities. The assessment is primarily a self-assessment.

Themes, Description, Relative Weights and Maximal Scores	Indicators	Indicators' Weights
Finances Aspects related to the administration of financial municipal resources Relative weight: 20% Maximal score: 1.0	<ol style="list-style-type: none"> 1. operational financing 2. capacity to invest own resources 3. efficiency in estate tax collection 4. social investment 5. expenditure capacity through own resources 6. process and emission of financial reports 7. budget programming 8. processes organising expenditure 9. tax collection management 10. cadaster management 	<ol style="list-style-type: none"> 1. 2% 2. 2% 3. 2% 4. 2% 5. 2% 6. 2% 7. 2% 8. 2% 9. 2% 10. 2%
Internal Administration Existence and extent of implementation and development of processes facilitating the achievements of institutional results Relative weight: 16% Maximal score: 0.80	<ol style="list-style-type: none"> 1. efficiency of municipal officers 2. flexibility of current expenditures 3. technological capacity 4. existence and extent of municipal planning 5. existence and extent of human resources 6. procedures for acquisitions 7. planning and implementation of investments with royalties resource 	<ol style="list-style-type: none"> 1. 2% 2. 2% 3. 2% 4. 2% 5. 3% 6. 2% 7. 3%
Service Delivery Management Municipal administration capacity of providing basic services and sustaining processes for their improvements Relative weight: 24% Maximal score: 1.20	<ol style="list-style-type: none"> 1. service delivery 2. coverage of principal services 3. quality of principal services 4. environmental quality 	<ol style="list-style-type: none"> 1. 7% 2. 7% 3. 7% 4. 3%
Democracy and Participation Municipal administration capacity to establish relationships with the civil society and other governmental organisations Relative weight: 25% Maximal score: 1.25	<ol style="list-style-type: none"> 1. internal municipal participation and transparency 2. mechanisms for citizens participation 3. sustainability of citizens participations 4. accountability and responsibility 5. transparency towards community 6. relationships amongst governments' levels 7. promotion of gender equality 	<ol style="list-style-type: none"> 1. 3% 2. 6% 3. 2% 4. 4% 5. 5% 6. 3% 7. 2%
Legislative Activity Extent of performance from the municipal legislative body to achieve municipal objectives Relative weight: 15% Maximal score: 0.75	<ul style="list-style-type: none"> • legislative efficiency • technical and operational efficiency • transparency and participation 	<ol style="list-style-type: none"> 1. 5% 2. 5% 3. 5%

Table 2-4 MINDAMOS themes, indicators and weights UNDP (n.d.)

INDICATOR AND OBJECTIVE	PERFORMANCE PARAMETERS	RESULTS
SOCIAL INVESTMENT (indicator 4 under “Finances”) It evaluates the ratio of municipal social investment against total municipal expenditures	The closer the ratio is to 0, the smaller is municipal social investment.	5 points: more than 0.40 4 points: between 0.31 and 0.40 3 points: between 0.21 and 0.30 2 points: between 0.11 and 0.20 1 point: less than 0.11
ACCOUNTABILITY AND RESPONSIBILITY (indicator 4 under “Democracy & Participation”) It identifies the mechanisms used by the municipality to explain and justify its decisions, policies and programmes	<ol style="list-style-type: none"> 1. the municipality has a normative framework for management accountability 2. at least an accountability tool for the municipal general management has been implemented 3. there is a mechanism for the monitoring of public management 4. the mechanism is publicised and easily accessible 5. the monitoring mechanism registers community questions and the institutional answers 6. there is a procedure for channeling complaints and answers 7. documentation/reports on municipal accountability are distributed to citizens 8. the report is comprehensible and provide clear information 9. the report provides complementary information to understand the results 10. citizens can access accountability documents and get an answer to their questions 11. there is evidence of citizen participation in accountability procedures 12. there are other accountability mechanisms 	5 points: more than 9 parameters applied 4 points: between 8 and 9 parameters applied 3 points: between 5 and 7 parameters 2 points: between 3 and 4 parameters applied 1 point: less than 3 parameters applied

Table 2-5 MINDAMOS Examples of scoring procedure UNDP (n.d.)

Qualification A	Between 4.6 and 5	Very good performance
Qualification B	Between 3.6 and 4.5	Good performance with some shortcomings
Qualification C	Between 2,6 and 3,5	Difficulties in municipal management, especially in some key indicators
Qualification D	Between 2 and 2,5	Severe administrative problems
Qualification E	Less than 1,9	Very bad performance

Table 2-6 MINDAMOS Grading System UNDP (n.d.)

3.3 POLITICAL GOVERNANCE ASSESSMENT

Some tools focus on a particular area of decentralised governance.

3.3.1 LOCAL DEMOCRACY ASSESSMENT GUIDE (INTERNATIONAL IDEA)

This tool measures citizen outreach through a questionnaire given out in Lusaka, Zambia. The sections below concern the form and methods of citizen outreach (13) and the evaluation of citizen outreach (14) (participatory democracy). They note that:

Community outreach processes are very important to the city council's operations. The most effective means of community outreach is the community participatory process that is built into CBO/NGO programmes. The community is not only involved directly in decision-making, but it also participates in the implementation and monitoring of programmes. In short, it is a bottom-up approach. The least effective was the now abandoned method under which all decisions were taken by civic centres without consultation with affected people. This invariably resulted in lack of ownership of the programmes or projects and hence vandalism and indifference towards the payment of fees and charges. CBOs/NGOs now work together with local authorities. The rate of citizen participation in community outreach is relatively good, but CBOs/NGOs are striving hard to ensure a much higher level. The basic barrier to citizen participation is poverty, which, in turn, contributes to illiteracy and lack of interest in community activities. The mission of Lusaka City Council is to 'provide high quality services and an enabling environment, with stakeholder participation, in order to improve the quality of life for all those who live, work visit or conduct business in Lusaka'. The five-year strategic plan is supposed to enhance the prospects of achieving this vision. It was developed through broad consultations with a cross-section of the Lusaka community. This was done to ensure that the objectives of the city take into account the priorities of local communities, especially with respect to service delivery.

Which of the following forms of citizen outreach have been used in the past 12 months?		Rating: Please mark with an X		
		Not used at all	Used between one and three times	Used more than three times
Public Information				
13.1	Distribution of printed materials (leaflets, newsletters etc.) to the public			x
13.2	Regular media briefing			x
13.3	Public presentation and exhibitions		x	
13.4	Scheduled programmes in local media			x
13.5	Computer-based applications, such as websites and e-mail			x
13.6	Others: motorized broadcast on the eradication and prevention of diseases, such as cholera			
Public Consultation				
13.7	Consultative meetings			x
13.8	Community forums		x	
13.9	Public surveys		x	
13.10	Others:None			
Public Decision Making				
13.11	Working groups and focus groups			x
13.12	Public workshops			x
Cooperative Implementation				
13.13	Public–private partnerships or public–non-governmental partnerships		x	
13.14	Others: Involvement of NGOs			

Table 2-7. Local Democracy Assessment in Lusaka, Zambia UNDP (n.d.)

Results of the assessment are tallied up and displayed according to the example below in Bulgaria.

Box 3: Report extract – Bulgaria country report using Indicators of Local Democratic Governance

The Bulgaria country report is included in the book "The State of Local Democracy in Central Europe", published in 2006. Data was collected between 2002 and 2003. The tables below present two examples of the information used to produce the country report, based on the Indicators of Local Democratic Governance. The first table is related to the sources of municipal e-government, within the area of local democracy assessment related to the "Transparent and Accountable Government". The second table shows the level of education of Local Representatives, within the area of local democracy assessment related to the "Local Representatives".

Sources of Municipal E-government [%]:	Yes	No	Total
Municipal government has a website (N 183)	67.2	32.8	100.0
Local government provision of information by e-mail (N 183)	58.5	41.5	100.0
E-mail usage by local representatives (N 953)	28.2	71.8	100.0
Internet usage by local representatives (N 950)	39.1	60.9	100.0

Source: face-to-face interview with Local Chief Administrative Officials

Level of Education of Local Representatives:						
	Not Completed Primary	Primary	Trade School	Secondary	Higher Education	Total
Councillors	1 0.1%	6 0.7%	147 17.3%	36 4.2%	662 77.7%	852 100%
Mayors			8 8.4%	3 3.2%	84 88.4%	95 100%
Total	1 0.1%	6 0.6%	155 16.4%	39 4.1%	746 78.8%	947 100%

Source: LRS 2003.

Source: http://lqi.osi.hu/publications/2006/340/Soos_complete_low_res_2.pdf

Table 2-8. Results of Local Democracy Assessment in Bulgaria UNDP (n.d.)

This approach was also used for a local governance citizen assessment in Bangladesh.

	6	5	4	3	2	1
Do elected members fulfill their roles and responsibilities?	fully	mostly	partly	hardly	Not at all	I do not know
Are UP meetings held regularly?	always: each month	most of the time: 10-11	Sometimes: 6-9	Rarely: 1-5	Never: 0	I do not know
Do your women members participate in the UP meetings?	Always takes part	Takes part most of the time	Takes part sometimes	Hardly takes part	Never takes part	I do not know
Are UP office hours maintained?	Open every day and timely	Open four days a week	Open irregularly	Mostly closed	Always closed	I do not know
Does the UP notice board have up to date information?	Always up to date	Mostly up to date	Sometimes up to date	Hardly up to date	Not at all up to date	I do not know
How satisfied are you with services provided by the UP in regard to awarding certificates, registration, etc.?	Very high	high	medium	Low	Not at all	I do not know

Table 2-9. Examples of key issues from the questionnaire at the community level UNDP (n.d.)

3.3.2 ADMINISTRATIVE DECENTRALISATION ASSESSMENT TOOLS (SERVICE DELIVERY)

Some tools focus on service delivery as the focus of assessment. A good example is the ‘Assessment of Capacity of Municipalities in Turkey and the Western Balkans to Deliver Services’.

Question 26: To what extent are specialist gender and human rights staff, departments, and other bodies (e.g. councils and committees) involved in policy, strategy, and service development activities for the five services?					
	Frequently	Strong	Rarely	Never	Not Sure
Drinking water					
Liquid waste management					
Solid waste management					
Basic healthcare					
Primary education					
Question 27: Overall, how do you rate the capacity of the municipal administration to translate the findings of monitoring and evaluation into service improvements for the following groups?					
	Strong	Moderate	Weak	No capacity	Not sure
General public					
Women					
Minorities					
People with disabilities					
People with low income					
Other typically excluded social groups					

Table 2-10. Two examples of questions on service delivery in Turkey and the Western Balkans UNDP (n.d.)

3.3.3 THE CITIZEN REPORT CARD

Box 5: Citizen Report Card application in Bangalore, India

The Bangalore Report Cards evaluated user satisfaction for nine key public services/agencies. Useful inputs in designing the questionnaire were collected through focus group discussions, visits by investigators to offices of service providers to assess the extent to which information was provided or denied to the public, and interviews with a limited number of lower and middle level staff from selected public agencies. The CRC data collection was based on a stratified random sample survey of nearly 1140 households in the 1994 exercise (including the poor) and 1339 general households, and 839 slum dwellers, in the 1999 exercise.

The CRC assessment covered the following aspects: a) Overall public satisfaction (by agency); b) Dimensions of public satisfaction with respect to staff behaviour, quality of service, information provided; c) Speed money actually paid; d) The cost of compensatory investments made by citizens. After assessing different services, the agencies involved were ranked in terms of their service performance. The graph shows the results for the level of satisfaction of general households with respect to staff behaviour of the nine analysed key public services/agencies. The exercise was carried out three times – in 1994, 1999 and 2003.

Satisfaction with Staff Behaviour: General Households



Agencies: BWSSB: Bangalore Water Supply and Sewerage Board; BESCOM: Agency for Telecommunication; BMTC: Bangalore Metropolitan Transport Corporation; BMC: Bangalore Metropolitan Corporation; BSNL: Bharat Sanchar Nigam Limited; RTO: Regional Transport Office; BDA: Bangalore Development Authority.

Sources:

[http://lnweb18.worldbank.org/oed/oeddoclib.nsf/b57456d58aba40e585256ad400736404/d241684df81fce2785256ead0062de10/\\$FILE/ecd_wp_12.pdf](http://lnweb18.worldbank.org/oed/oeddoclib.nsf/b57456d58aba40e585256ad400736404/d241684df81fce2785256ead0062de10/$FILE/ecd_wp_12.pdf)

Table 2-11. The citizen report card case UNDP (n.d.)

3.3.4 COUNCIL OF EUROPE'S GUIDE TO DEVELOPING WELL-BEING / PROGRESS INDICATORS WITH CITIZENS – APPLICATION OF THE GOVERNANCE MODULE IN TIMISOARA (ROMANIA)

Another interesting model looks specifically at how local institutions engage with citizens in a local authority in Romania.

DIMENSION	INDICATORS
GOVERNANCE	institutional relations with citizens
	non-discrimination in rights
	rule of law
	social services
	civic dialogue and public consultation in decision-making process

Table 2-12. Indicators chosen for the assessment of dimensions of local governance UNDP (n.d.)

SCORINGS	DEFINITION OF SITUATIONS
0 – nothing	Absence of communication between public authorities and citizens as well as absence of aid efficiency, corruption and favouritism
1- Very bad situation	Information on public services superficial and/or wrong, disinterest from public authorities towards citizens, absence of aid efficiency, corruption and favouritism, high local taxes
2 – Bad situation	Information on public services superficial and/or wrong, disinterest from public authorities towards citizens, lack of public consultations, bureaucracy and long waiting-time for aids, corruption, favouritism, reduced capacities of public officers, high local taxes
3 – Average situation	Correct and complete information but lack of transparency for decisions, disinterest, formal organisation of public consultations, long waiting-time for aids, equal access for everybody, reduced capacities of public officers, high local taxes
4 – Good situation	Information with transparency for decisions, public authorities open to citizens, organisation of public consultations with support for citizen participation, bureaucratic simplification, equal access for everybody, good capacities of public officers, reasonable local taxes.
5 – Ideal situation	Information with transparency for decisions, citizens' opinions are taken into account. Public authorities interested and proactive for citizens participation, bureaucratic simplification, on-line services, equal access for everybody, good capacities of public officers, reasonable local taxes

Table 2-13. Scoring scale for the indicator on “institutional relations with citizens” UNDP (n.d.)

3.4 MAPPING CAPACITY

It is likely that each local authority will already have a list of priorities and some way of assessing local governance. A key need would be an understanding of the capacity of local governance and the process to build capacity and track its progress. This section presents tools that are useful in mapping capacity.

3.4.1 MODELS OF CAPACITY MAPPING

Brinkerhoff (2007) proposed embedding capacity as part of an analytical framework, noting that ‘Three intersecting dimensions are the main sources of CD dilemmas and trade-offs: 1) the time required to achieve an increase in capacity, 2) the degree of difficulty and complexity associated with developing capacity, and 3) the magnitude of the change involved in the CD intervention. Combining these three dimensions with the elements of capacity yields a model for CD intervention that illustrates targeting options, their implications for each of the dimensions, and their interactions.’

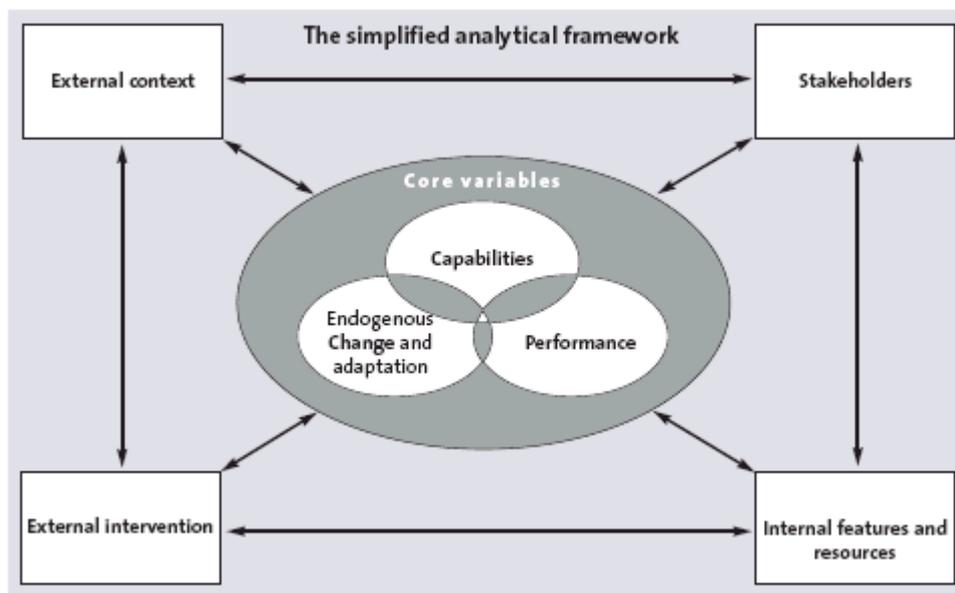


Figure 2-4. Simple analytical framework for embedding capacity Brinkerhoff (2007)

A number of models break down the concept of capacity into separate but related levels. Morrison (2001) identifies five levels as part of a Human Performance System.

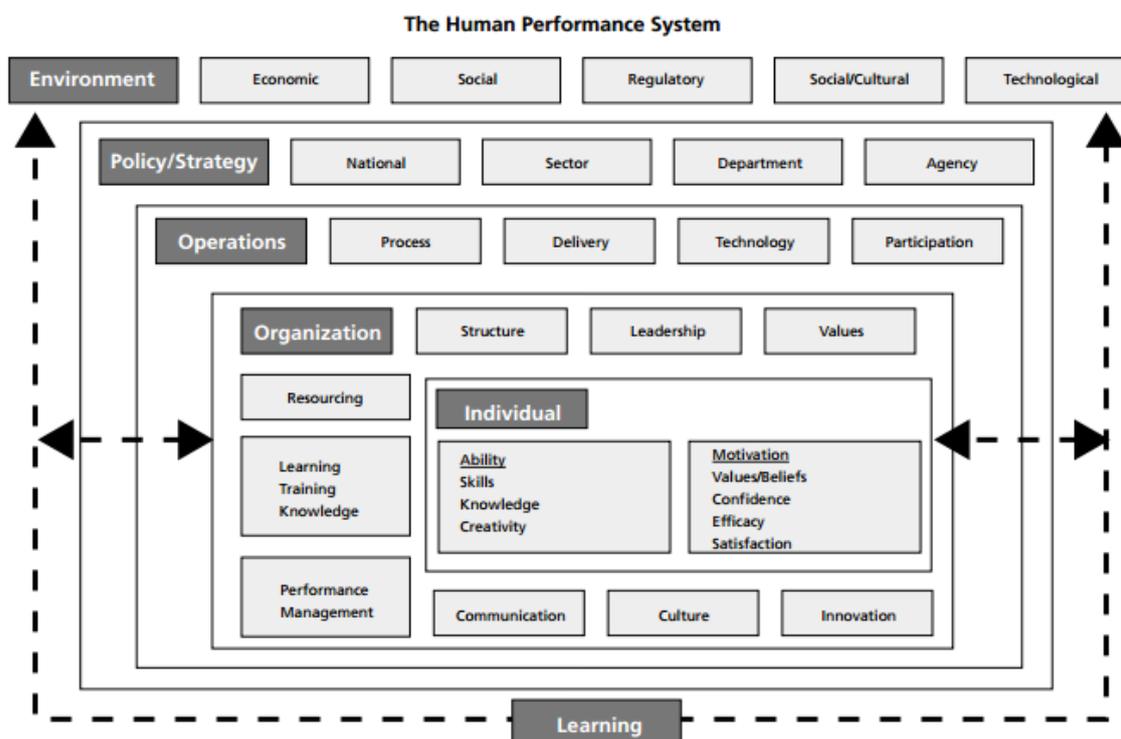


Figure 2-5. Human performance system – five levels Morrison (2001)

A simpler model with three levels of capacity is proposed by GTZ (2005) and UNECA (n.d.): institutional, organisational and individual.

Level of Assessment	Suggested Tools
Institutional/Systems Level	<ul style="list-style-type: none"> • Document Analysis • Force field analysis • Focus group discussions • Stakeholder analysis
Organisational Level	<ul style="list-style-type: none"> • Document analysis • Regional Development Planning Capacity Assessment • Focus group discussion • Organisational capacity assessment tools (OCAT, Participatory Organisational Assessment, PROSE) • Stakeholder analysis • SWOT
Individual Level	<ul style="list-style-type: none"> • Document analysis • Task and job analysis • Training needs analysis (TNA) • Focus group discussion

Table 2-14. Level of Capacity and Suggested Assessment Tools GTZ (2005)

UNECA (n.d.) proposes what developing capacity could resemble at each of the three levels.

Type of Capacity Building	Illustrations
<p>Organizational.</p> <p>Rationalizing institutional arrangements to improve management processes and create an enabling environment.</p>	<p>Constitutional reform changing basic elements of the political system.</p> <p>Sorting out roles and responsibilities among governments with, inter alia, the goal of a high degree of revenue and expenditure autonomy.</p> <p>Design of the intergovernmental transfer system should match the objectives of reform (e.g., equalization, conditional transfers to address net positive externalities).</p> <p>Recognition that decentralization and participatory government is part of a system; and that fiscal decentralization involves much more than fiscal matters (vehicles for voice, establishing barriers for elite capture of formal participatory practices)</p>
<p>Institutional.</p> <p>Restructuring and building: Implement, manage, audit, monitor and evaluate.</p>	<p>Redesign/restructure of central government ministries to become intergovernmental (includes a strong central ability to monitor, evaluate and in some cases, “lead” the decentralization process).</p> <p>Introduction of new management or budget mechanisms in local government; internal and external audit, financial administration and reporting; availing public information at low cost (transparency).</p> <p>Recognition that as one moves from a system of central regime control of “government” to a decentralized and participatory society, legitimate disagreements will arise over the pace, structure and depth of governance reform. Accordingly, establishment of an agreed process for integrity-bound systems for mediation and, when needed, for appeal to a transparent and final legal authority</p>
<p>Individual.</p> <p>Develop human knowledge and skills. Enhance professional personnel (it’s likely to be a mix of adequate staff size as well as that of technical quality).</p>	<p>Knowledge development for</p> <ul style="list-style-type: none"> • Performing the direct work tasks assigned to the individual (training of civil servants (e.g. training curricula and materials, training of trainers) • Receptivity and responsiveness • Understanding the “big picture” of decentralisation and participation (and not just in the home country).

Table 2-15: Inter-Dependent Capacity Building: Organizational, Institutional and Individual UNECA (n.d)

3.5 PROCESS OF CAPACITY BUILDING

A number of sources present models to describe the process of capacity building. This section will present some of those before looking at specific tools.

Morrison (2001) has developed a set of tools with capacity building through the lens of case based learning. ‘Case based learning is not solely concerned with the transmission of knowledge to learners, but also extends to the enhancement of core competencies in key skill areas and the development of attitudes. These objectives, when combined, can be described as building the capacity for creative problem solving.’ **These tools and facilitation techniques are presented in great detail and organised by the following process.**

Capacity Building as Actionable Learning for Change

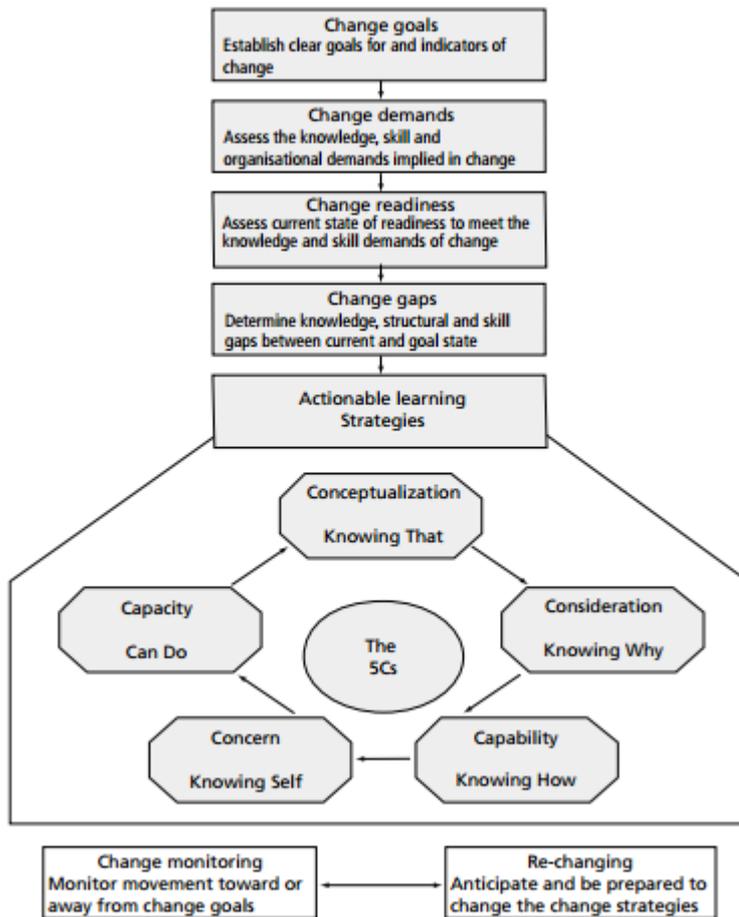


Figure 2-6. Capacity Building as actionable learning for change Morrison (2001)

Brinkerhoff's (2007) model for capacity development suggests that 'CD [capacity development] interventions most often address multiple targets, though the starting point and emphasis is usually one of the five designated targets:

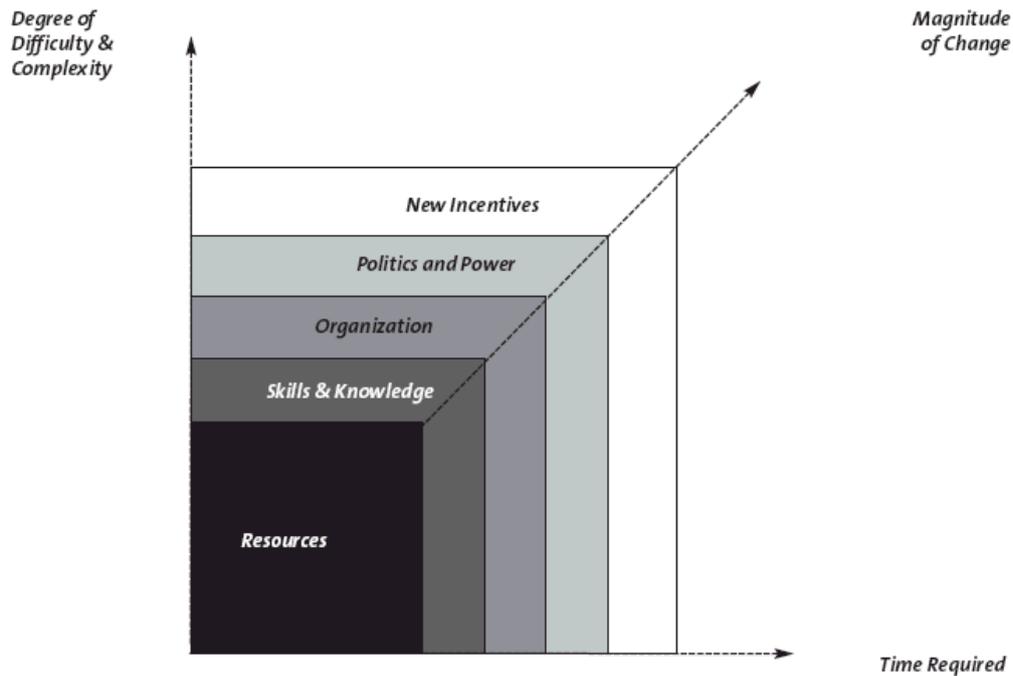


Figure 2-7. Five designated targets of capacity building Brinkerhoff (2007)

- **Moving along the horizontal axis** graphically shows how the time requirements for CD increase as interventions move from a relative emphasis on resource transfers to addressing features in the enabling environment encapsulated in politics and power shifts, and finally to new incentives.
- **Ascending the vertical axis** explains how CD becomes more difficult and complex as interventions expand in scope and call for actions among multiple parties that penetrate increasingly deeply into the bureaucratic, political, socio-cultural, and economic fabric of society.
- **Moving up the diagonal from left to right** indicates how combining all of the targets involves a progressively greater magnitude of change, which requires both more time to accomplish and is increasingly difficult the farther up and to the right the intervention reaches.'

'The progressively lighter shading captures the tendency for targets and effects often to become more diffuse as interventions move beyond resource transfers. By linking scope of change to time and difficulty/complexity, the model reveals where trade-offs may arise and where donors may need to make adjustments in their expectations and their programs.'

'Targets can be categorized according to the levels noted above: individuals, organizations, and/or the enabling environment in which they function. As noted above, these levels are interconnected. Capacity issues and targets can also be distinguished relative to each of these three levels. CD can be targeted at gaps and weaknesses in the following:

- Resources (who has what)
- Skills and knowledge (who knows what)
- Organization (who can manage what)
- Politics and power (who can get what)
- Incentives (who wants to do what).'

If CD targets are defined in terms of...	Then interventions focus on...
Resources	<ul style="list-style-type: none"> • Material and equipment • Micro-credit • Food aid • Budget support • Dedicated funding (e.g., trust funds, social funds)
Skills and knowledge	<ul style="list-style-type: none"> • Training • Study tours • Technical assistance • Technology transfer
Organisation	<ul style="list-style-type: none"> • Management systems development • Organization twinning • Restructuring • Civil service reform • Decentralisation
Politics and power	<ul style="list-style-type: none"> • Community empowerment • Civil society advocacy development • Legislative strengthening • Political party development • Discouraging ethnic-based politics
Incentives	<ul style="list-style-type: none"> • Sectoral policy reforms (e.g., trade and investment, pro-poor social safety nets, monetary and fiscal policy, private sector friendly regulation, health, education, etc.) • Encouraging civic dialogue, social compacts, and consensus building • Democratic elections • Strengthened accountability structures and procedures • Improved rule of law

Table 2-16: Targets of capacity development and suggested interventions Brinkerhoff (2007)

3.5.1 STEPS TO IMPLEMENT GREENING INITIATIVES

OECD (2012) used a five step process to improve capacity for local governments to implement greening initiatives.

Strategic priorities	Challenges	Actions to deliver capacity development for greening national planning processes
Step 1: Assess the political and institutional context		
<ul style="list-style-type: none"> • Overall policy process • Specific NDP process • Public dialogue on key issues 	<ul style="list-style-type: none"> • National planning process and institutional roles are often not widely understood by policy makers • National planning process may not be well linked to public dialogue on key issues • Policy actors are not always effectively involved in formal NDP process 	<ul style="list-style-type: none"> • Assess national planning cycle and institutional set-up, e.g. PRSP • Link to national policy issues, e.g. water shortages, food production, rural poverty • Enlist senior policy makers with an understanding of environment-development linkages • Engage stakeholders in "self-assessment" exercise
Step 2: Identify the key actors and their capacity development needs		
<ul style="list-style-type: none"> • Government actors • Opinion formers • "Champions" 	<ul style="list-style-type: none"> • Given the number of stakeholders that contribute to the planning process, it is difficult to define a set of capacity needs for individual actors. 	<ul style="list-style-type: none"> • Reach out to key actors and identify their capacity development needs. Actors include: <ul style="list-style-type: none"> - Environment ministry/agency - Finance/planning ministry - Sector ministries - CSOs - Private sector - "Champions"
Step 3: Identify opportunities to shape organisational incentives		
<ul style="list-style-type: none"> • Incentives • Cross-agency work • Understand different perspectives 	<ul style="list-style-type: none"> • Role of environment staff is usually limited to environment agency activities and not linked to development outcomes • Planning staff are not always motivated to look at the potential contribution of environmental issues to development objectives • Environment staff have limited experience with cross-agency work 	<ul style="list-style-type: none"> • Enable participation of environment staff in national planning cycle, e.g. involvement in central working groups • Ensure incentives for planning staff to consider the importance of the environment for achieving development outcomes • Promote operational collaboration between planning and environment staff e.g. joint committee/team
Step 4: Identify awareness/knowledge needs and existing analytical tools		
<ul style="list-style-type: none"> • Provide support/training • Knowledge products • Country specific evidence • Make the economic case 	<ul style="list-style-type: none"> • Environment staff are not always familiar with the national planning process • Environment staff are not used to framing and communicating the contribution of the environment to development • Country-specific evidence for making the economic case can be limited 	<ul style="list-style-type: none"> • Make planning/environment staff aware of the links between environment, poverty reduction and sustainable livelihoods • Provide technical support/training on economic analysis of environmental assets and services to make the economic case for greening NDPs • Provide technical support/training for SEA-type analysis of national planning process • Collect country-specific data to strengthen the economic case for greening NDPs
Step 5: Address options for policy influence		
<ul style="list-style-type: none"> • Revise NDP priorities • Implement strategies • Measures and investments 	<ul style="list-style-type: none"> • Formal analysis is not always tailored to the nature of the decision making process • Environment staff not experienced in influencing decision making and have limited negotiation skills • CSOs often have limited influence 	<ul style="list-style-type: none"> • Provide support on integrating technical analysis into decision-making process • Train environment staff in using the language of policy makers • Engage CSOs with potential to influence policy debate

Table 2-17: Steps for building capacity for greening sector planning processes OECD (2012)

The Center for International Studies and Cooperation (2012) uses a participatory process for building capacity of local governance. 'The chosen themes take into account sustainability, replicability, innovation, impacts, and know-how to be shared. The project team and partners from both Districts, main actors in the experiences

presented, identified the information to be collected, prepared the data collection tools, organised focus groups and analysed results.’ **Tools are suggested for each step of the process.**

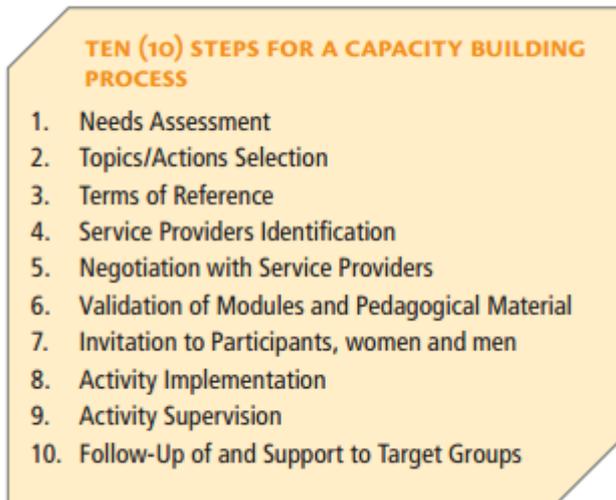


Figure 2-8. Ten steps for a capacity building process CISC (2012)

The methodology is based on creating a local resource pool, a ‘group of people based in the District that have sector / technical expertise likely to be useful as service providers for target groups. These experts must use a Capacity Building approach. In order for an intervention to be efficient, the members of a pool should first be trained and then mentored.’

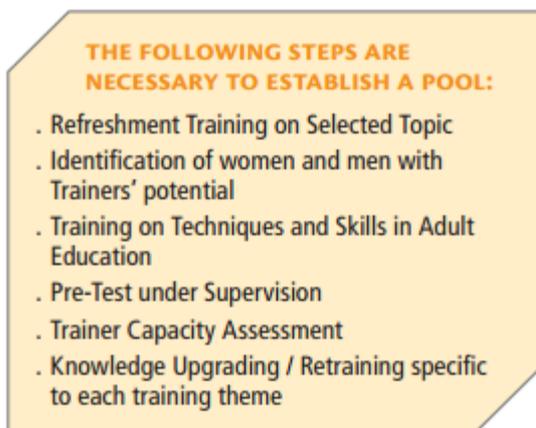


Figure 2-9. Steps necessary to establish a local pool CISC (2012)

GTZ (2005) have presented a **range of tools to support each step of its five-phase process to building capacity.**

Phase	Step	Suggested Tools (most found in GTZ 2005 manual)
Preparation	1. Identification of Needs for CBNA process	
	2. Determining Objectives	Moderation techniques Visualisation techniques Focus group discussions (to identify key issues) Participatory observations (site visits) Document analysis
	3. Establishing responsibilities	Team building and management Institutional arrangements
	4. Devising processes	Process planning techniques Gantt charts
	5. Allocating resources	Funding arrangement matrix
Analysis	6. Identification of Issues	Issues analysis Interview and discussions Document analysis
	7. Analysis of processes	Service definition Process mapping (flow chart) Guided/semi-structured interviews with key respondents Customer satisfaction survey Document analysis
	8. Organisational analysis	Organisational capacity assessments Benchmarking Force field analysis SWOT analysis Regional Development Planning Capacity Assessment Training Needs Assessment (TNA)
	9. Assessment of capacity gaps	Capacity gap analysis
	10. Emerging capacity building needs	Capacity building needs format
Planning and Programming	11. Multi-year action planning	Medium term capacity building action plan (logical framework) Indicator setting
	12. Medium-term expedition planning	Medium-term expenditure planning format
	13. Priority-setting and sequencing	Priority setting Critical path analysis
Implementation	14. Annual programming and budgeting	Programming and budgeting format
	15. Capacity Building project planning	Project planning and management
	16. Selection of service providers; procurement	Expression of interest Tendering documents and procedures Service provider selection criteria Letter of award
	17. Project implementation	Plan of operation
	18. Monitoring of processes	Depending on monitoring strategy, eg process assessment of delivery of capacity-building products and services
Evaluation	19. Evaluation of impact	Evaluation methods
	20. Re-planning of capacity building action plans	Re-planning flow chart Same methods as before

Table 2-18: Overview of suggested tools for the capacity building process GTZ (2005)

Finally, South Asia Social Accountability Network (n.d.) recommend (but do not provide) 'a number of tools and interventions of capacity building to enhance capacity for Social Accountability'

1. **Traditional Training:** This is a traditional classroom based approach undertaken based on a training schedule implemented over a few days to a week. Classroom training contains a series of concurrent training modules in a common venue.
2. **Mentoring and Coaching:** This tool includes on-site and off-site mentoring and coaching with the help of knowledge and skills gained through implementing various social accountability projects and programmes. It also includes on-job training and mentoring to those implementing projects on social accountability.
3. **Change Management:** Change Management programmes have been used best to build the capacities of the service providers and the supply side stakeholders. This tool focuses on bringing attitudinal changes and acceptance to new tools and techniques.
4. **Toolkits and Manuals:** This includes capacity building through readymade material on social accountability like tools, handbooks, guides and manuals. Such tools can be contextualized to a specific social accountability tool and its possible application to a specific sector for better usage.
5. **Workshops and Meetings:** Workshops and meetings are also important tools for capacity enhancement. They provide a platform for discussion, dissemination and exchange of ideas.
6. **ICT & e-tools:** Training and capacity building can also be taken up by developing specific e-tools for impact training on social accountability. ICT can also be used to provide technical and knowledge assistance with the help of the internet.
7. **Audio Visual Aids:** A number of audio visual aids on social accountability can be developed for improving the capacity of the stakeholders. These tools have an immediate impact and can help in building the capacities of those who cannot read and write, especially found more among the beneficiaries and community at large.
8. **Exposure Visits:** This tool primarily involves organising exposure visits and study tours for various stakeholders in batches or groups to locations where Social Accountability practice of a particular tool or process is well developed.
9. **Scholarship Programmes:** This tool includes developing scholarship programmes on social accountability to specific target groups to expose them to social accountability. It can be best used by the civil society. Such programmes are characterized by intensive training and skill building for selected leaders and individuals from CSOs who have the potential for long-term involvement in a particular area of Social Accountability practice and have the capacity to adapt and tailor fit the learning to realities. (South Asia Social Accountability Network, n.d.)

4 MAKING THE RIGHT CHOICES AS AN AUTHORITY

Given the above, and given a generalized capacity for good governance, the local authority is still potentially challenged by its own **energy proficiency**. Does the working group deciding on the health facilities generator, know the difference between a cogeneration plant and a diesel generator? Will this be a case of which salesperson comes first, or is there latent capacity for understanding the environmental implication of each decision?

Energy proficiency framework for the managerial type of local governance (efficient delivery of services)

Attribute	Characteristic (developed/prioritised in consultation with stakeholders)
Knowledge	<ul style="list-style-type: none"> • Energy flows, systems, and sources • Sustainable and renewable energy • Units of measure for energy use • Impact of energy on development and economy • General trends and initiatives in decentralised energy • Basic scientific facts related to energy
Skills	<ul style="list-style-type: none"> • Assess the credibility of information about energy • Communicate about energy and energy use in meaningful ways • Make informed energy decisions based on an understanding of impacts and consequences • Obtain, evaluate, and utilise energy information from a variety of sources • Reframe energy concerns where necessary to go beyond centralised delivery.
Attitudes	<ul style="list-style-type: none"> • Awareness/concern with respect to global energy issues • Positive attitudes and values for sustainable energy • Assumption of personal responsibility for implementing sustainable energy
Actor networks	<ul style="list-style-type: none"> • Creation of space for dialogue within local authority • Creation of linkages to actors outside authority concerned with energy (locally and nationally) • Awareness of influences of 'others', and discernment of vested interests.
Changing institutions	<ul style="list-style-type: none"> • Awareness of resources available for 'energy' – within their institution, locally and nationally • Willingness to reassess resource allocation for energy concerns • Developing capacity within organisations to allow them to understand and respond to energy issues; • Influencing strategy within own and other organisations to allow them to understand and respond to energy issues.
Behaviour	<ul style="list-style-type: none"> • Communicates information about energy issues not only as a personal concern but also as a problem affecting the larger community; • Implements and evaluates effective policies and projects • Encourages others to implement effective policies • Shares information and learning

Table 3-1: Energy proficiency framework for the managerial type of local governance (efficient delivery of services) Batchelor and Smith (2014)

In working paper 2b, we noted that there are skill required by the local authority to make decisions about the things for which they are responsible. There are a range of tools and graphs to depict energy use, behaviour and perceptions that could be used by local authorities, although to date most of these have only been applied in developed economies.

4.1.1 CARBON CULTURE

Carbon Culture is a UK website where businesses and organisations can sign up to display how much energy they use and what initiatives they are taking to reduce energy use. See Figure 10 for an example of Cardiff Council. A similar website might be a useful tool for local authorities in SSA to track their energy and clean energy initiatives and also to compare with each other.

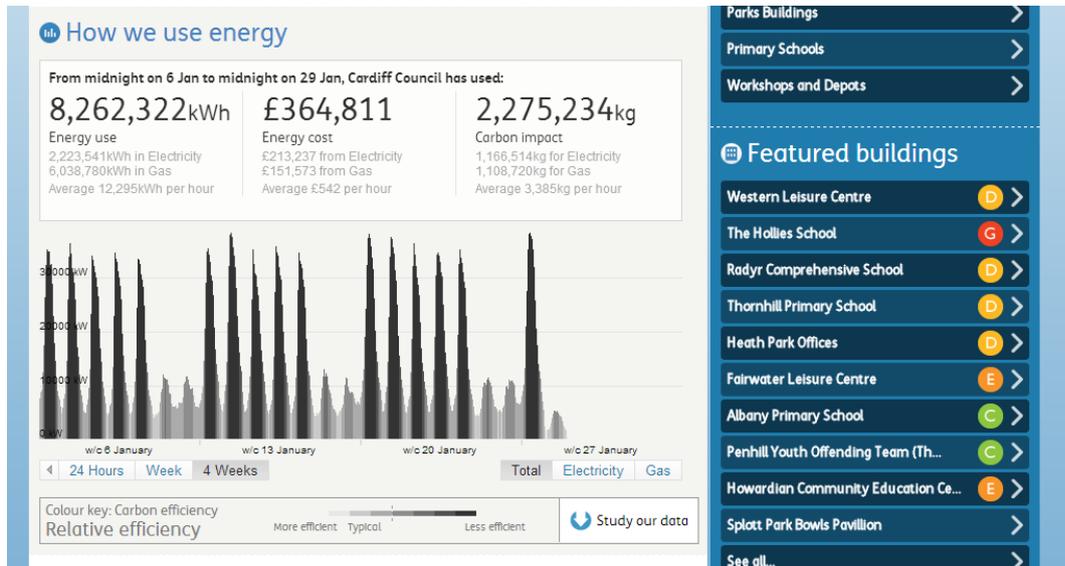


Figure 3-1 Cardiff Council Energy Usage for Jan 2014 Carbon Culture (2014)

EnergyLiteracy.com provides a personal tracking tool where individuals can graphically represent how they use energy by category (see Figure). This also could be a useful way to get local authorities thinking about percentages of energy use in their area and how this could be changed.

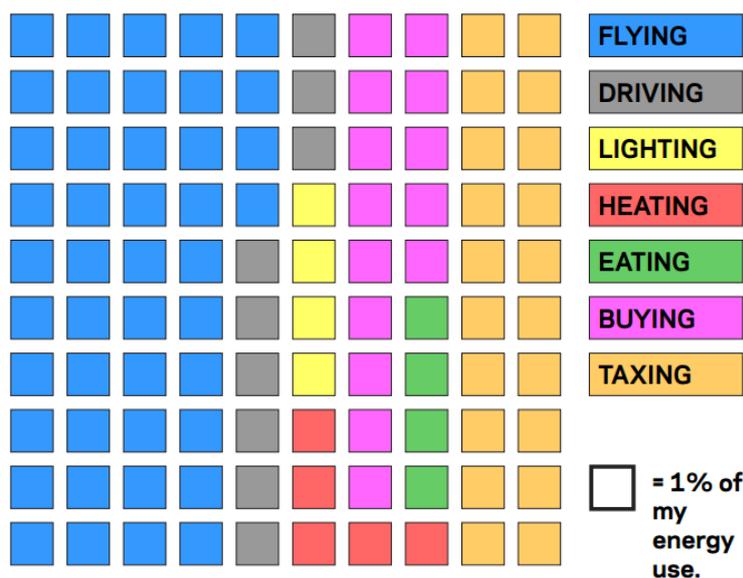


Figure 3-2 Personal Energy Use by Percentage Energy Literacy (2014)

As local authorities will not be tracking personal use of energy, it would be useful to find a unit of measure that clearly and accurately presents the challenges and concepts of renewable energy. Lambert et al (2014) propose a unit of measure called EROI, which measures ‘the energy gained from a unit of energy spent in the process of obtaining energy (p. 1). An accompanying study found that EROI was an accurate predictor of a healthy economy and quality of life. This measurement unit could be useful for tracking energy use and encouraging energy proficiency.

4.1.2 GRAPHIC REPRESENTATIONS OF ENERGY BEHAVIOUR

The Republic of South Africa (2012) report on survey data for energy behaviours has a range of graphs that depict large datasets in a comprehensible way. Figure 12 gives two such examples.

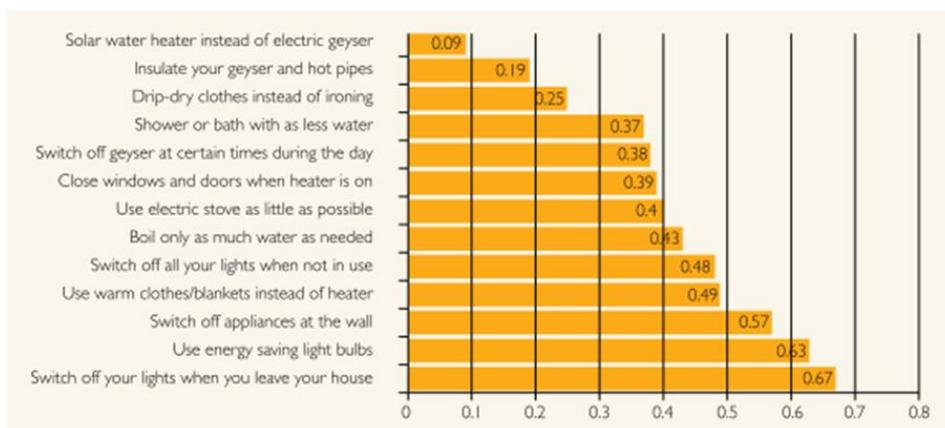


Figure 3-3 Ratio between awareness of an energy-saving measure and taking action RSA (2012)

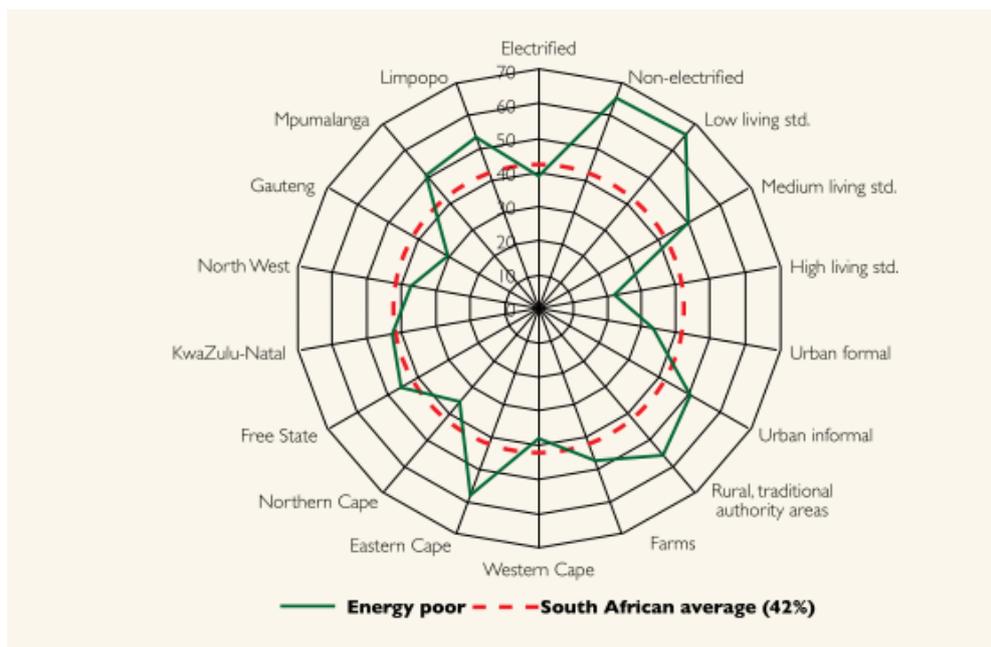


Figure 3-4 Subjective energy poverty, by household attributes (percent) RSA (2012)

Kukui Cup

Another useful tool was created by Brewer et al (2013), who developed an extended simulation/game called the Kukui Cup with online and real-world activities to teach energy literacy. It was piloted to change behaviour for energy use for university students at the University of Hawaii. '[The] Kukui Cup challenges blend real world and online activities, all tied together through game mechanics. In the real world, players participate in workshops, excursions, and creative events. They compete to win prizes, and in the process, learn about their current behaviors and their impact on resources such as energy and water. The online game environment allows players to earn points, achieve badges, increase their sustainability "literacy" through readings and videos, and use social networking mechanisms to engage with friends and family. The Kukui Cup is designed to make the real and online world activities complementary and synergistic' (Kukui Project, 2014). The project aims to expand to new contexts and provides an open-source software for sustainability called Mahikiki (Lee et al, 2012; Makahiki, 2014) that can be freely adapted to other contexts by developers. This type of extended simulation could bring a useful element of positive competition and a more enjoyable framework for officials to participate in tracking and changing energy behaviours.

Practical Action: Poor People's Energy Outlook 2013

Practical Action published the Poor People's Energy Outlook 2013, which focuses on the contribution that improved energy access can make to vital community services such as health, education and infrastructure services, including water and street lighting. The approach of Practical Action to achieving universal energy access focuses on total energy access, taking into consideration who has access to energy across households, businesses and in the community, and how that energy is used.

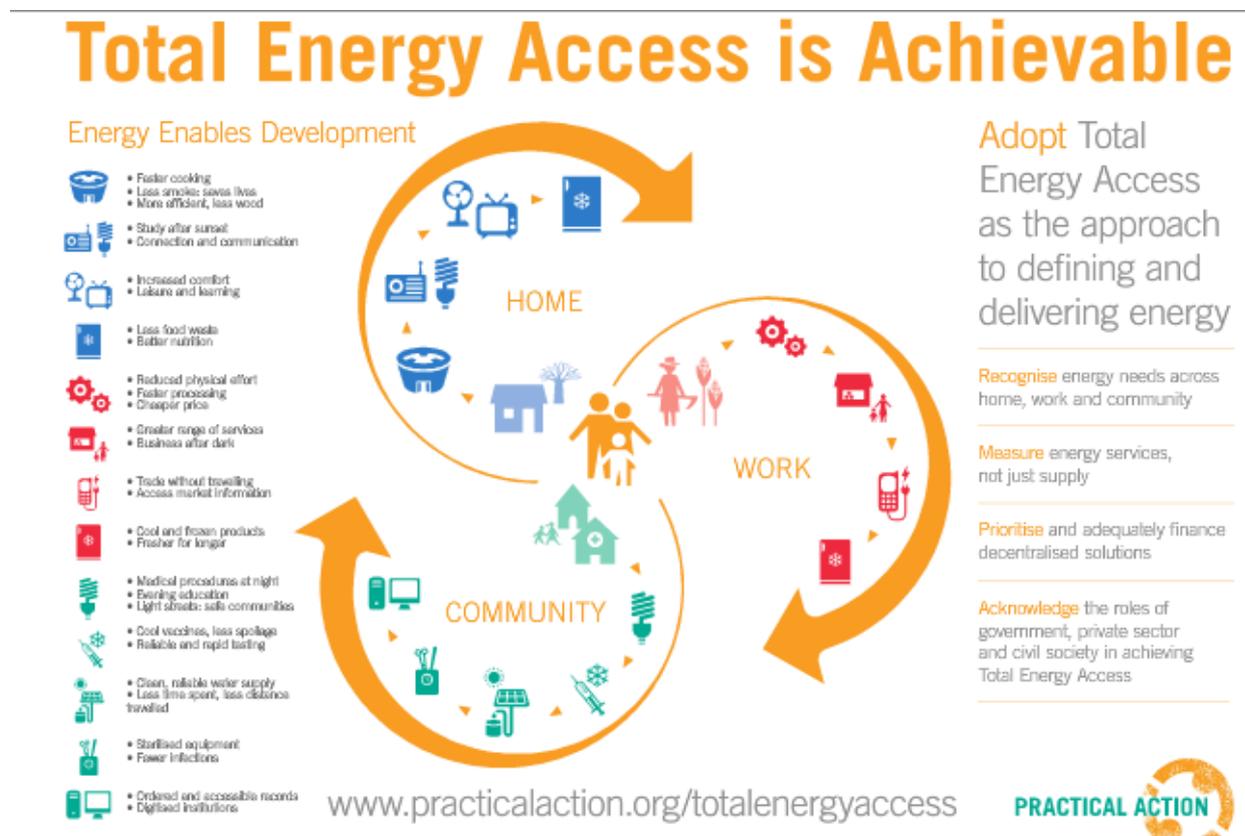


Figure 3-5 Total energy access: Poor People's Energy Outlook Practical Action (2013)

Practical Action, and HIVOS. 2012. “Catalyzing Civil Society to Deliver Sustainable Energy For All.”

The objective of this working group session was to get a good overview of the situation in each country regarding the SE4ALL status and, especially the policy environment.

Each group was tasked to discuss most important improvements of the current thinking and preparation of the SE4ALL plans that are needed in their country,

- a) Map out the national process for national implementation plan (important moments, opportunities for influencing)
- b) List most important stakeholders (government organizations, research institutes, private sector, media etc.)
- c) Complete a power analyses especially for the SE4ALL implementation plan. See also results from last year workshop

In reporting back, participants were asked to focus on the following:

- Three issues they want to focus on (improvements needed)
- Three stakeholders they want to target
- Three moments for influencing they want to act on

An example of this report is given for Uganda.

National Situation – Uganda

IMPROVEMENTS NEEDED	OPPORTUNITIES	STAKEHOLDERS
<p>Uganda’s focus currently is on oil and gas other than renewable energy which was booming in the last ten years. There is need to bring back the agenda of renewable energy.</p> <p>SE4ALL is lacking a framework which needs to be backed up by a strategic plan.</p> <p>No standard for renewable energies (except for Solar) limits the financing component.</p> <p>There is need to redefine the methodology of engagement of civil society.</p>	<p>Civil society can lead on the agenda for renewable energy, Civil society has the opportunity to influence the gap analysis.</p> <p>There is an opportunity to engage the wider civil society sector.</p>	<p>Need better ways of getting information out of the government and ministry of energy; Parliamentary committee on natural resources and climate change issues; Ministry of water and environment; Uganda national bureau of standards; Donors – UNDP, WB, GIZ, HIVOS; Research institutions; Key financial institutions; Formal and informal energy entrepreneurs, such as retailers and jua kali people; Energy associations and networks.</p>

Table 3-1 National Situation in Uganda for SE4All Practical Action and HIVOS (2012)

Another workshop by Practical Action aimed to map out current status of the SE4ALL process in individual countries.

The objective of this working group session was to get a good overview of the situation in each country regarding the SE4ALL status and – especially – the policy environment. Each group was asked to:

- discuss most important improvements of the current thinking and preparation of the SE4ALL plans that are needed in each country
- map out the national process for national implementation plan (important moments, opportunities for influencing)
- list most important stakeholders (government organizations, research institutes, private sector, media etc.)
- complete a power analyses especially for the SE4ALL implementation plan.

The groups presented in plenary the three most important:

- improvements needed
- moments for influencing
- stakeholders to be targeted

An example is presented from Mozambique.

MOZAMBIQUE: Presented by Gilda Monjane

Mapping out national situation – Mozambique

I. Improvements needed

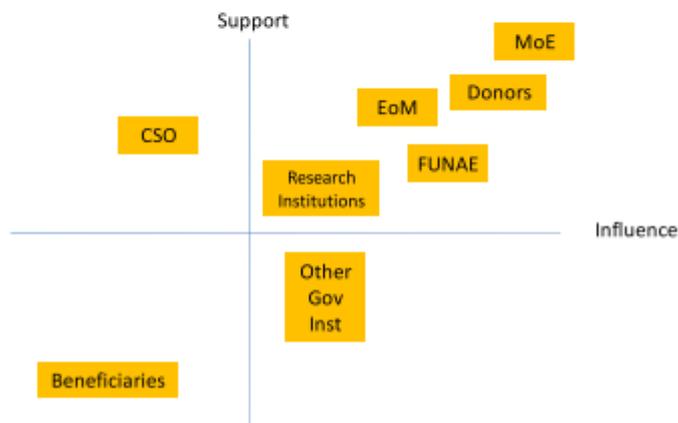
- Concentration of donors in some provinces
- Low coordination in the energy objectives (national and provincial level and between organizations)
- Dissemination of information on what the energy stakeholders are doing
- Policy adoption but no immediate strategies for operationalization
- New energy resources are being exploited - what the local communities will win with that; Social Responsibility is not clearly outlined
- There is a need to promote information and education on how to use energy, benefits, environmental issues, how to get connected to the grid or get access to electrification in off grid communities;
- Still no incentives for use/ sell of renewable energies;
- National information not adjusted to the reality
- There is a need for Gender- targeted policies

- Households cooking - Promotion of environmentally - friendly technologies (improved stoves, briquettes, ethanol, etc.)

2. Moments for influencing

- Energy Steering Committee Meetings (Beginning and end of the year)
- Annual donors meeting (1st semester of the year)
- Ministry of Energy Annual Meeting (2nd Semester of the year)
- Annual Energy Forum (Civil Society, Donors, Private companies and Government)
- When new initiatives/ Projects are to be implemented
- Public debates in media
- Poverty Observatory Sessions
- Influence the local Development funds to support energy (Funds aiming to develop districts)

3. Stakeholders to be targeted



Observations/Comments: The moments for influence for Mozambique seemed achievable, given the right political will as funds could be sourced internally and from outside.

Figure 3-7 Mapping out the national situation in Mozambique for SE4All Practical Action and HIVOS (2012)

4.2 RENEWABLE ENERGY AND ENERGY EFFICIENCY

The Efficient Public Lighting Guide by the City Energy Support Unit (2009) 'offers an introductory overview of a range of lighting options for public buildings, street and traffic lights; comparing technologies, capital and operating costs, and electricity savings. The information is designed to support municipal EEDSM strategy and business planning processes. This is the first energy efficiency strategy for South Africa and was compiled by the then Department of Minerals and Energy.'

The Municipal Electricity Efficiency Response 'examines the potential efficiency impact of 100% penetration of a variety of tested interventions within a municipality: based on current municipal electricity consumption data. Associated electricity savings and costs are detailed. The tool has been developed around electricity efficiency alone and does not look to load management planning.' The tool can be found here:

[Download Tool \(.xls\)](#) [Download Documentation \(.pdf\)](#) [Download Both \(.zip\)](#)

The City Energy Support Unit (2009) has created a manual for use by city officials and planners. It is a practical handbook, which identifies easy to achieve energy interventions that will save money (for cities, businesses and households), promote local economic development and enhance the sustainable profile of a city. This manual is specifically aimed as a support tool to achieve the implementation of key interventions within South African municipalities.

5 PUBLIC AWARENESS OF ENERGY

In this final section, we note that the local authority has a responsibility to enable the public to become energy aware, and to take action at a household level where possible. We discussed this as an added set of skills within the energy proficiency framework.

Energy proficiency framework for the governmental type of local governance (represents community interests in policy choices locally and nationally)

Attribute	Characteristic (developed/prioritised in consultation with stakeholders)
Knowledge	<ul style="list-style-type: none"> • Energy flows, systems, and sources both within their control and within their influence • Sustainable and renewable energy • Units of measure for energy use • Impact of individual and societal decision on energy development and use • Impact of energy on development and economy • General trends and initiatives in decentralised energy • Basic scientific facts related to energy
Skills	<ul style="list-style-type: none"> • Assess the credibility of information about energy • Communicate about energy and energy use in meaningful ways, both to peer colleagues and to wider citizens • Make informed energy decisions based on an understanding of impacts and consequences • Obtain, evaluate, and utilise energy information from a variety of sources • Identify energy aspects of personal and community concerns • Reframe energy concerns where necessary to go beyond centralised delivery.
Attitudes	<ul style="list-style-type: none"> • Awareness/concern with respect to global energy issues • Positive attitudes and values for sustainable energy • Assumption of personal responsibility for implementing sustainable energy • Civic orientation (concern that knowledge benefits all and is distributed equally)
Actor networks	<ul style="list-style-type: none"> • Creation of space for dialogue within local authority • Creation of linkages to actors outside authority concerned with energy (Locally and Nationally) • Creation of space for dialogue with citizens and citizen organisations • Awareness of influences of 'others', and discernment of vested interests.
Changing institutions	<ul style="list-style-type: none"> • Awareness of resources available for 'energy' – within their institution, locally and nationally • Willingness to reassess resource allocation for energy concerns • Developing capacity within organisations to allow them to understand and respond to energy issues; • Influencing strategy within own and other organisations to allow them to understand and respond to energy issues. • Influencing strategy for citizens to allow them to understand and respond to energy issues
Behaviour	<ul style="list-style-type: none"> • Communicates information about energy issues not only as a personal concern but also as a problem affecting the larger community; • Implements and evaluates effective policies and projects • Encourages others to implement effective policies • Shares information and learning

Table 4-1: Energy proficiency framework for the governmental type of local governance (efficient delivery of services) Batchelor and Smith (2014)

What tools are available for enabling the public to make informed choices about energy use? Again a lot of work has been done in developed economies, and there is considerable room for more to be done, especially in developing economies.

5.1 ENERGY AWARENESS AND BEHAVIOUR

Although it is a relatively new area, there are some specific tools around raising awareness of the public in sub-Saharan African about energy use and behaviour that have been created.

5.1.1 ENERGY CULTURES

Bleichwitz et al. (2010) developed a framework for what they call Energy Cultures. By mapping the factors that drive energy use, it is possible to find out what type of intervention might be successful.

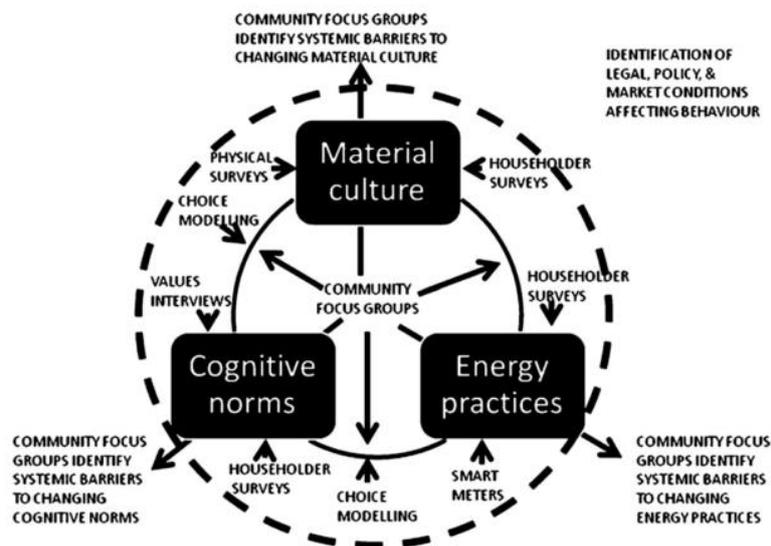


Figure 4-1 Using the energy cultures framework as the basis for designing multi-method research project to investigate household heating behaviours and barriers to behaviour change Bleichwitz et al. (2010)

5.1.2 ECO-LABELLING

UNEP (2007) has a report that assesses initiatives for eco-labelling in Africa, a promising option for raising energy awareness. It notes that

‘There are a number of eco-labelling schemes operating in the region, the majority are international eco-labelling schemes relevant to a sector (i.e. fisheries, forestry, organics, etc.). These include eco-labelling schemes such as the Marine Stewardship Council (MSC), Forestry Stewardship Council, Fairtrade and the range of organic standard labels. A number of sectoral eco-labelling schemes are being implemented on a regional basis such as the East African Organic Standard and the West African Cotton initiatives. There is currently only one national eco-labelling scheme currently in operation in Africa, which is the Tunisian eco-labelling scheme. A further national eco-labelling scheme is under development in South Africa. There are a number of national energy-efficiency appliance labelling schemes which have been initiated.’

5.1.3 49M INITIATIVE: [HTTP://WWW.49M.CO.ZA/1024-1500/ABOUT](http://www.49m.co.za/1024-1500/about)

Similar to the 10:10 initiative in the UK, the 49M initiative ‘aims to inspire and rally all South Africans behind a common goal - save electricity and create a better economic, social and environmental future for all...Saving power is really about changing our attitudes. By simply making small changes in our everyday life, collectively we can make a massive difference...[49m] is government, Eskom, big players in industry and commerce, and it is you – all 49 million of you South African citizens. Be a part of the solution, make a difference and take the 10% pledge.’

5.1.4 ENERGY EFFICIENCY AWARENESS CAMPAIGN

The City Energy Support Unit in South Africa has a number of tools for raising energy efficiency awareness. One of these is a step-by-step guide for municipalities running an energy efficiency campaign.

‘When municipalities take the lead in campaigning for energy efficiency they have the power to make Municipalities have a much greater influence over energy use patterns within their boundaries than is often realised. They have direct contact with their target audience and can reach them more effectively than national or provincial government can. As towns grow, municipalities are faced with ever-larger service provision requirements, while the many small changes count. Behaviour change is an increasingly important feature in ensuring that municipalities can stretch their resources further.’

5.1.5 SMART LIVING ACTIVITY SHEETS

The Government of Cape Town (2009) has developed a series of activity sheets that can be used by individual citizens to raise awareness about energy use.

Household energy cost per week				
1	2	3	4	5
Fuel type	Service	Amount per week (litres, kg, number)	Cost per unit (litres/kg/number)	Fuel cost/week (amount x cost per unit)
Paraffin	Cooking	1 litre	R3,55	R10,60
Total Cost				

Household carbon emissions				
	1	2	3	4
	Amount of fuel	Ratio	Kg CO ₂ /month	Kg CO ₂ /year
If electricity (kWh)		x 1,08 kg CO ₂ per kWh		
If LP Gas (kg)		x 3,09 kg CO ₂ per kg		
If paraffin (litre)		x 2,58 kg CO ₂ per litre		
Total energy related household emission from your home per month and per year in kg				
Total energy related household emission from your home per month and per year in tonnes				

Compare your household's carbon emissions with typical annual CO₂ emissions from Cape Town homes (note that this excludes transport).

Household type	kg CO ₂ /month
Average low-income non-electrified home in Cape Town	146
Average low-income electrified home in Cape Town	193
Average mid-income home in Cape Town	737

Figure 4-4. Examples of Smart Living Activity Sheets for household use Government of Cape Town (2009)

5.2 COMMUNITY CONSULTATION AND PLANNING

Changing energy behaviour involves a process of community consultation and planning rooted in an understanding of community development.

5.2.1 NEEDS ASSESSMENT OF THE DEVELOPMENT PROJECT CYCLE

In Batchelor et al 2001 the emphasis given to the use of common participatory techniques is on gathering information on the role of energy in the daily lives of the community, and on promoting discussion of the issues raised in order to help people understand the importance of energy. This application of techniques is

targeted at the **needs assessment stage of the development project cycle**. It will enable them to **prioritise needs** (including any energy requirements), which will then lead into the planning and design stage.

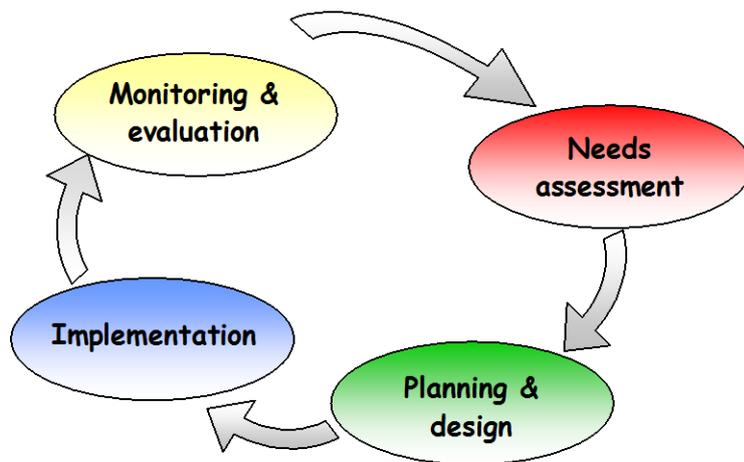


Figure 4-5 Development Project Cycle Batchelor et al (2001)

5.2.2 MAPPING THE IMPORTANCE OF ENERGY IN LIVELIHOODS

According to Batchelor et al (2001), at the **needs assessment stage** the community is being asked what its **priority needs** are, and which of those it chooses to work on – for instance, needs may include a lack of a clean water supply, a dilapidated school building, and deteriorating access to firewood, and the community may choose to act on the problem of firewood first. At the **planning and design stage** the community and the assisting organisation then have to look at the **choices available** – for instance, if the problem is firewood, then is the best way forward to try to grow more firewood, to improve the way we use firewood, to encourage a transition to kerosene, or to mobilise the people to lobby the government for an electricity supply? Considerable experience has been gained in the use of participatory techniques in the planning and design of specific energy projects e.g. natural resource assessment, energy consumption, but these are at the Planning and Design stage and are beyond the scope of this document. However, readers interested in this phase can contact us for details of tools produced by others (e.g. IRENet and AEA Technology Environment).

There is no doubt that energy issues do indeed come up in baseline studies. Where agencies work with women, issues of water, cooking and shortage of firewood come up frequently; this is because women often have to walk long distances to collect wood. The question of energy also comes up in food processing (e.g. smoking fish) because some form of energy is needed for processing activities. Delegates in Ghana drew up the process chart in the figure below, which illustrates the importance of **energy in livelihoods**.

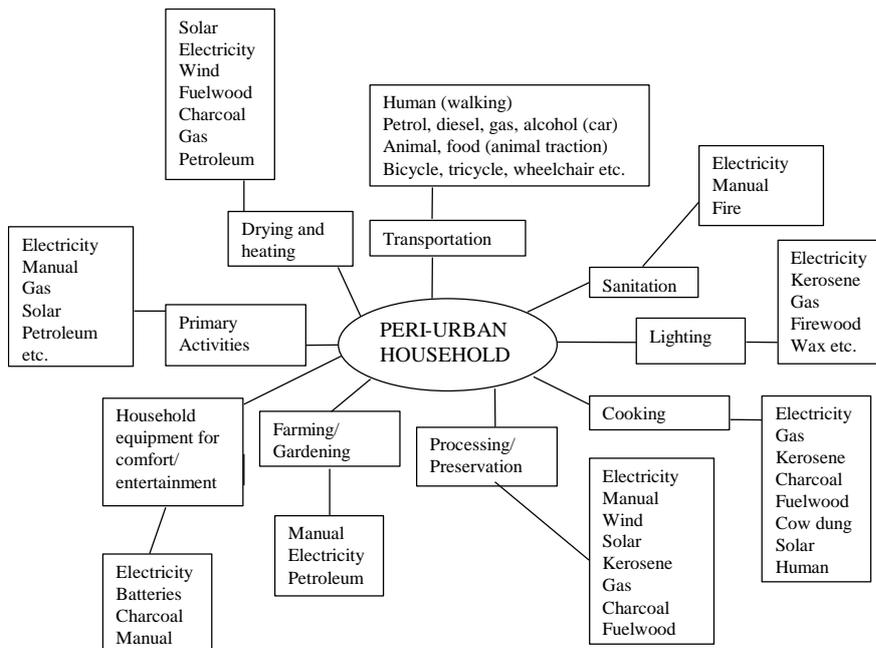


Figure 4-6 Mapping importance of energy in livelihoods Batchelor et al (2001)

5.2.3 LINKS BETWEEN ENERGY AND DEVELOPMENT SECTORS

Batchelor et al (2001) has also created a mind map to show the links between energy and other development sectors.

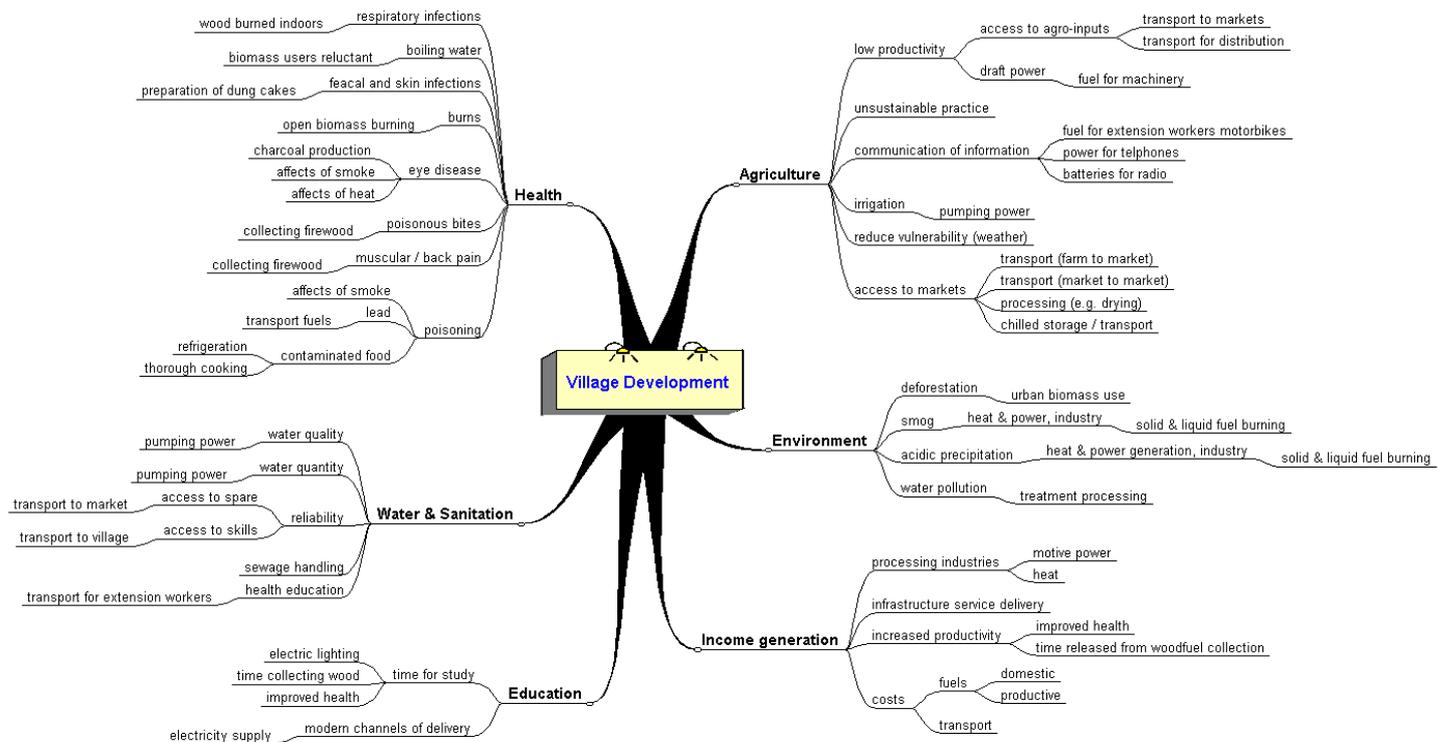


Figure 4-7 Links between energy and other development sectors Batchelor et al (2001)

5.2.4 DISCUSSIONS FOR REFLECTION AND ACTION (FOCUS GROUPS)

In some programmes, one on one or group discussion over a period of time is all that is required to help a community move towards solutions to poverty and improvements to livelihoods.

Focus groups discussions are a particular form of discussion that "focuses" in on a subject. They are more "agenda led", and seek to find the views of a group of people on a particular subject.

In either general discussion or focus group discussions it is worth asking questions the standard questions what, where, when, who, how, for instance: -

- what energy sources do you use and for what activities (e.g. fuel wood for cooking)?
- where do you get energy from (e.g. for an urban community - who is the electrical supplier or for a rural community do they collect their own firewood?)
- who provides or collects the energy
- how much time do you spend getting fuel?
- how reliable is the source of energy supply?
- how much does energy cost

5.2.5 DAILY ACTIVITY CHARTS

Daily activity charts show how people spend their time. Asking different groups of people to draw activity charts can help identify differences in what people do and what resources they use, and can help foster an understanding of the pressures on time experienced by the different groups. Tracking the use of time throughout the day helps gain an understanding of where time constraints lie. If these "bottlenecks" can be overcome, then people should be released to spend time on more important activities.

Many of the activities listed by women will involve domestic energy e.g. cooking. It is important to remember that these are essential activities that are taken for granted. It is a very simple step to ask people about the energy implications of these activities. Again, remember the direction of discussions arising from drawing an activity chart can be guided by the facilitator. For example, the "cooking" activity can be used to raise issues of diet, and its impact on health, leading to crop choices and agricultural planning, and so on. Alternatively, cooking can raise issues of health and sanitation, such as storage of food, cleaning of utensils and so on.

5.2.6 HISTORICAL TRANSECTS

Transects record information relating to different types of land. Changes in land characteristics tend to occur slowly and go unnoticed. The purpose of the historical transect is to try to piece together what things were like in times gone by - comparing maps can make people aware of how natural resources have changed. Discussion can highlight causes of changes and current problems, and trying to project into the future can help people identify what action can be taken now to avoid potential problems.

Although the starting point for a historical transect is a present day transect, the amount of detail required is much less. Bear in mind that information will need to be based on people's memories and perceptions, and that the further back in time you go, the fewer people will be able to contribute.

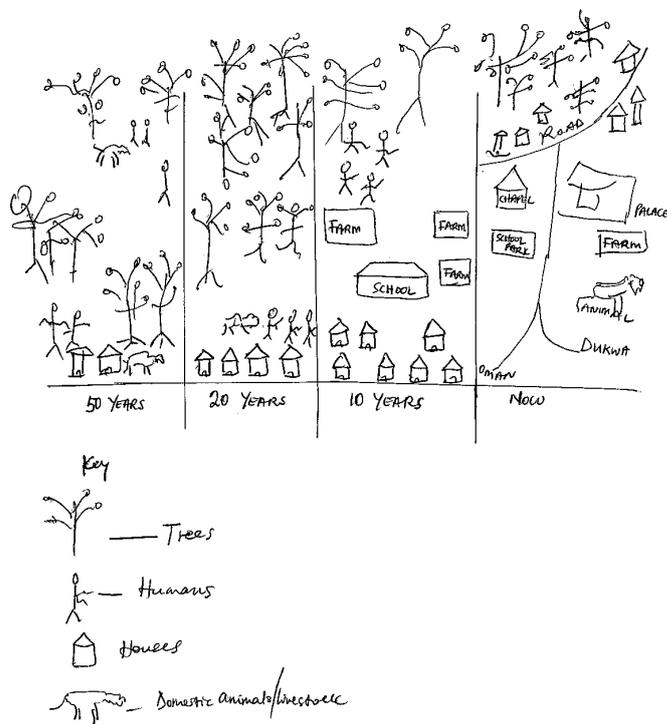


Figure 4-8 Historical transect of the Nyamendam Community, Ghana Batchelor et al (2001)

The simple detail given illustrates the change in land use over the past 50 years from predominantly forest and vegetation to accommodation and farms.

An historical transect can also be used to illustrate the levels of one kind of fuel wood. For example, the figure below shows the change in fuel wood availability over a 20 year period.

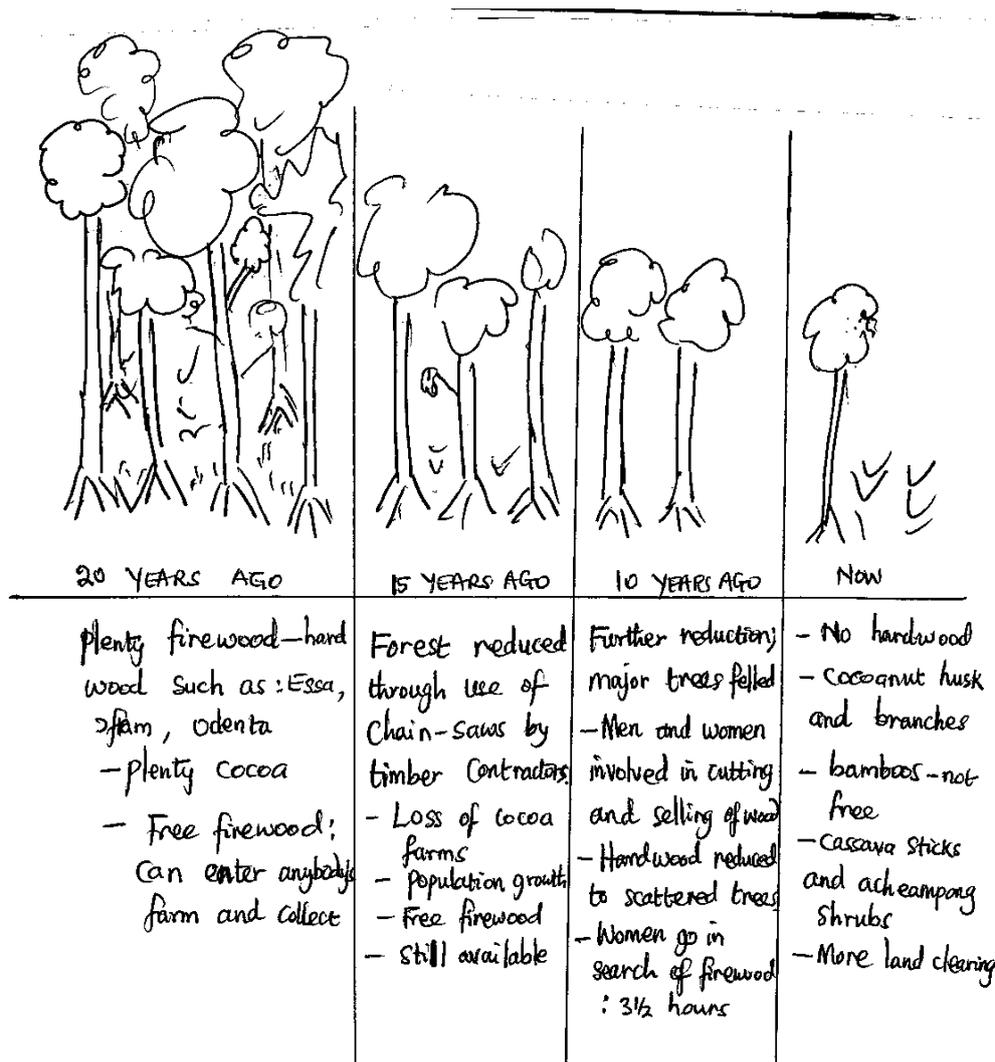


Figure 4-9 Changes in tree numbers over twenty years in Agona Kwanyako, Ghana Batchelor et al (2001)

Whilst creating the diagram the group also began discussions around the causes of the firewood reduction. These included noting that 20 years ago firewood was free for all. Today about 30% of the women purchase their firewood, whilst the remaining 70% now spend about 3.5 hours searching for firewood. Other fuel oriented transects include the change in types of energy used for cooking, the position of electricity supplies, hydro sources, markets or shops (for purchasing charcoal, kerosene) etc.

5.2.7 NETWORK MAPS

A network may be defined as groups of people with common concerns who interact with each other. Drawing a network diagram helps people clearly identify the different groups involved, and to think about how they interact with each other.

Before you can start drawing a network diagram, you have to agree what the theme is for the network i.e. what is the common concern that groups share? Having said that, there may be energy related interest groups that might not seem immediately obvious. For example, if you are considering the use of an area of land, you might concentrate on which groups have access and use the land, traditional rights and land tenure, but would you remember that the electricity utility will need access to maintain their distribution system?



Figure 4-11 Ploughing a field Price J. (2000)

Issues that could arise in discussing this figure include:

- what sources of fuel are people likely to use?
- how far do people have to go to collect fuel wood?
- what pressures are there on wood resources?
- what agro-inputs are required for agriculture? How are they transported to the village?
- where do people sell agricultural produce?
- how do people travel to markets? What are the energy implications?
- what would be the implications of using a tractor for ploughing? e.g. use of diesel.
- are there other benefits of oxen? e.g. dung for burning.

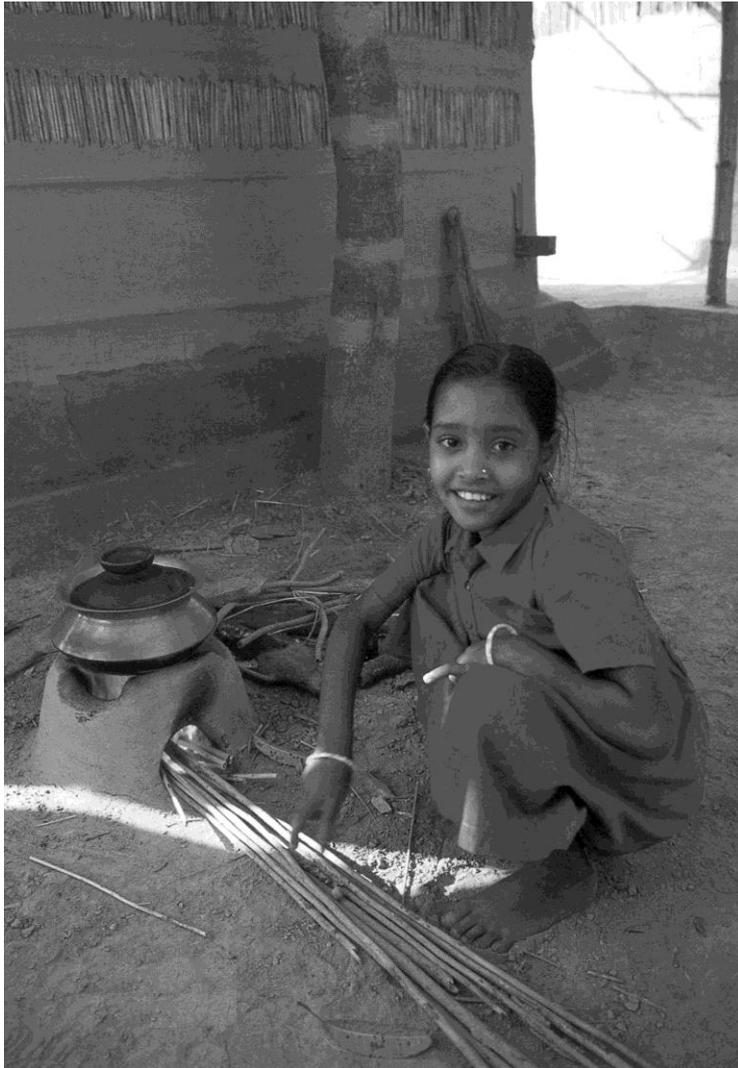


Figure 4-12 Ploughing a field Price J. (2000)

Similarly, this figure could be used to start discussion on a range of issues including:

- choice of fuels for cooking
- what range of cooking stoves is available?
- what makes a good stove?
- who usually does the cooking, and collecting firewood?
- how often will the girl have to collect firewood?
- what else could she be doing with the time spent collecting firewood?
- what are the best types of wood for cooking fuel?
- why is she using such small bits of wood? Has all the mature wood gone?
- what are the pressures on wood resources? e.g. building houses
- how does she keep her clothes so clean? How is the water pumped?

5.2.9 PROBLEM TREES

Problem trees identify issues that are regarded as problems, or constraints to development, within a community. They are most useful for helping people think about various causes of these problems, which enables them to think about ways of tackling the **causes** of poverty rather than the symptoms.

Once the problem tree has been completed, it can be turned into an “objective tree” by simply replacing problems with ideas of what can be done to overcome problems.

Although the problem tree is another tool for helping an extension worker gain an understanding of how the community view their situation, there is a role for the facilitator in guiding discussion, for example, to ensure that the views of different groups are aired. In the same way, if the facilitator has an awareness of energy issues, they can use the technique to explore cause and effect across a range of issues:

- what is the affect on fuel resources?
- how is access to fuels affected?
- how will the cost of fuels be affected?
- how will energy consumption change?
- how will fuel choices be affected?
- what are the knock on affects of reduced access to fuels?
- what changes are there to workloads? e.g. more time spent collecting wood;
- what will be the impact of alternative fuels on, for example, health, income generation etc.?
- what will be the affect of reduced energy consumption? e.g. reduced cooking, curtailment of income generating activities etc.

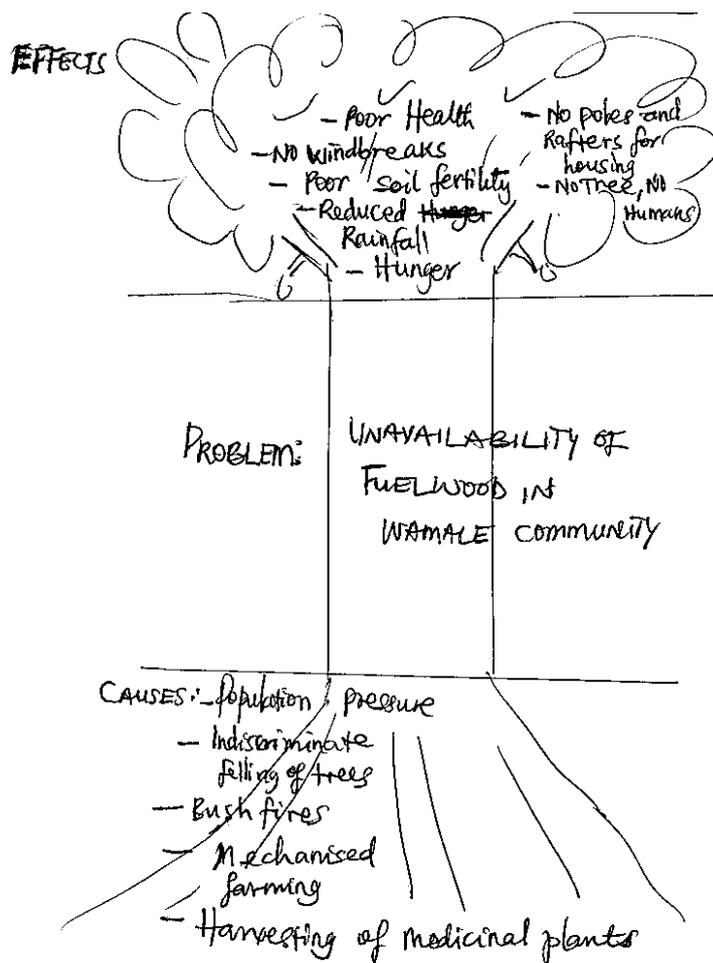


Figure 4-13 Lack of Fuel Wood problem tree, Wamale Community, Ghana Batchelor et al (2001)

5.2.10 MATRIX RANKING

Matrix ranking is a way of helping analyse opinions and preferences on a wide range of topics. People are asked to score a range of options against a set of criteria; the overall scores then serve as a quantifiable way of sorting the options into an order of preference. Differences between people can be explored later during discussion (or individual interviews).

It is important that the facilitator is aware of the importance of energy across a range of community issues, so that they can raise energy issues in the discussion concerning the criteria to be used for ranking. The figure below presents an example of a ranking exercise on the preferred energy sources which are available currently in the community.

ENERGY SOURCES	GAS	FIREWOOD	ELECTRICITY	KEROSENE	CHARCOAL
GAS	X	FIREWOOD	ELECTRICITY	KEROSENE	CHARCOAL
FIREWOOD		X	FIREWOOD	FIREWOOD	FIREWOOD
ELECTRICITY			X	ELECTRICITY	CHARCOAL
KEROSENE				X	CHARCOAL
CHARCOAL					X
SCORING	0	4	2	1	3
RANKING		1 st	3 rd	4 th	2 nd

Figure 4-14 Pair Wise ranking of preferred energy sources in Nyamendam community, Ghana Batchelor et al (2001)

It is important for the facilitator to not only use the scores to rank the energy sources, but also to understand the scores; for example, why does charcoal preferred over kerosene?

5.2.11 MAPPING

The aim of a map is to show the layout of physical elements of the landscape (e.g. village land, watershed area), as might be seen from an aerial photograph. However, the participatory process of drawing the map can reveal more about people's perceptions of the land and its use than could be read from a photograph. Typically uses of maps are to represent physical vegetation (forests, trees), land use (cultivated, uncultivated wasteland, grazing land, forestland, irrigated land, etc.), land ownership patterns, land productivity, cropping patterns etc.

Mapping can be done on whatever scale you want. For example, where people have little experience of conventional maps and literacy is low, large-scale ground maps can be created using stones, twigs, leaves, seeds etc. to represent characteristics (see Figure 13). If, on the other hand, people are comfortable with pens and paper, then people can draw directly onto a large piece of paper. Note that it is more difficult to make changes on a paper map – disagreement and discussion often lead to revisions!

A range of physical and social issues relating to energy can be included in resource maps:

- access to fuelwood by different socio economic groups;
- areas for household use, and areas used commercially e.g. for charcoal;
- ownership of resources;
- different types (and uses) of wood;

- distance travelled, and time taken;
- health and security hazards (e.g. swamps, secluded areas);
- availability of dung, crop residues;
- seasonal factors affecting fuel resources (including transport to community);
- electricity distribution;
- sources of coal, kerosene, peat etc.
- where energy is used e.g. village (domestic use), brick firing (commercial);
- how fuel enters / leaves the village e.g. by road on vehicles, by track on donkeys or headloads;
- cost implications of transporting fuels to the community.



Figure 4-15 Ground sketch map Chipurpal Village, India Batchelor et al (2001)

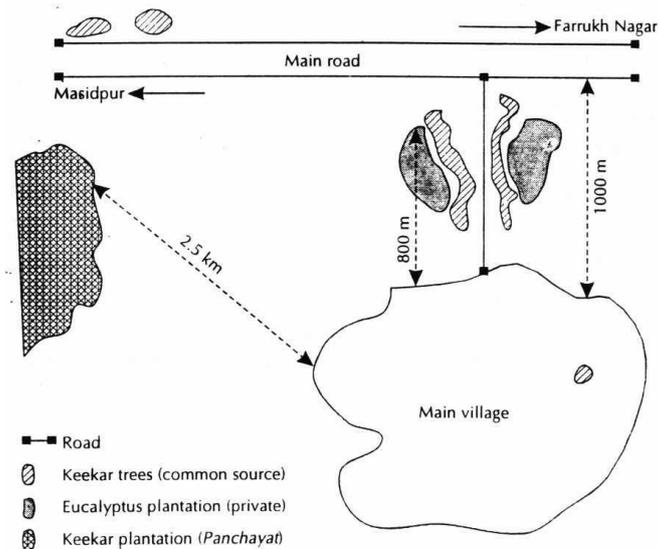


Figure 4-16 Resource (fuel) mapping Malhotra et al. (1998)

5.2.12 SEASONAL CALENDAR

A seasonal calendar identifies the activities that people do throughout the year, and helps identify priorities and responsibilities. It helps us to understand time as the local people understand it. It highlights periods when people are **busy**, when people are affected by seasonal **weather** factors (e.g. disease, rains), **economic** pressures when cash is needed (e.g. buying seeds, school fees etc.), and so on. It can be particularly useful for planning programmes on the basis of patterns that emerge e.g. ask for people to provide labour when they are not busy.

Seasonal calendars commonly include:

- availability of food (shortages and surplus);
- subsistence agricultural activities
- income generating activities
- livestock management
- diseases (human, livestock, and crop pests);
- availability of water
- vulnerability to weather e.g. monsoons, storms.
- social events e.g. Christmas, Ramadan;
- movement of people e.g. migration for work and education;
- when cash is needed.

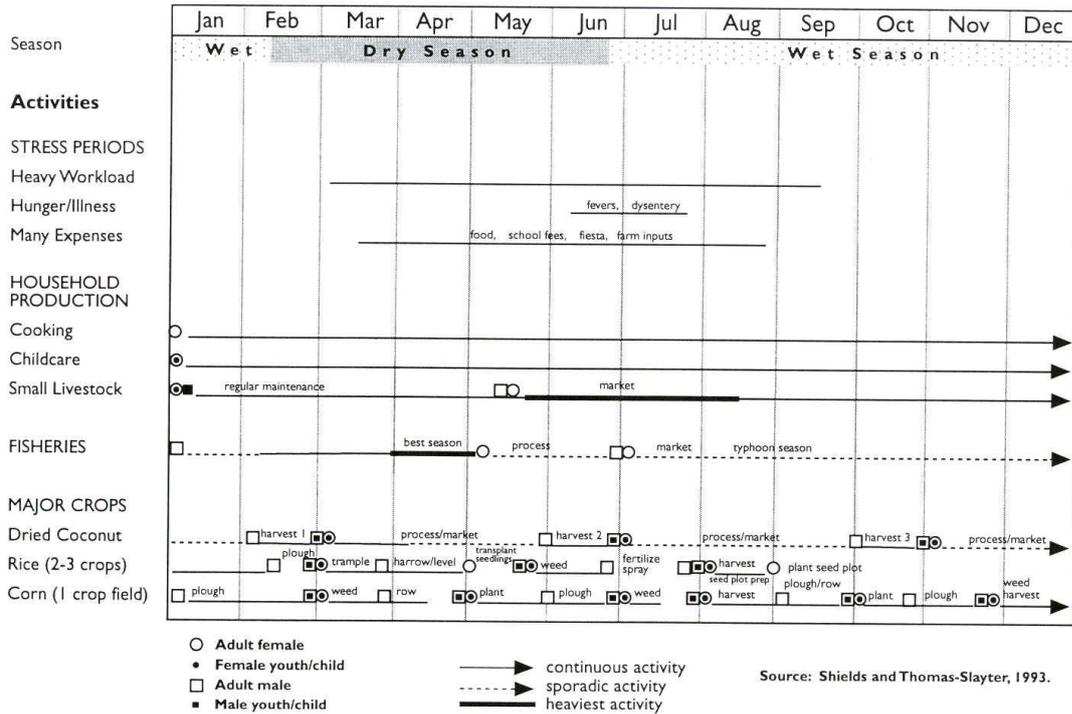


Figure 4-17 Seasonal calendar example Poffenberger et al. (1992)

This type of calendar can easily be adapted for energy by the inclusion of a section on energy, including lines for “fuel availability” and “fuel consumption”, in the same way that the activity on fuel wood is recorded the figure below, for example. You could then cross check consumption of various fuels (e.g. wood, crop residues and animal dung) with the seasonality of cropping patterns, availability of fodder, etc.

SEASON	ACTIVITY ON FUELWOOD			
	availability of fuel wood	consumption of fuel wood	collection of fuel wood	expenditure on fuelwood
WUNI ○	○○○○○ ○○○○○ 10	○○ 2	○○○○○ ○○○○○ 7	
WOLUGU □	○○○○○ 5	○ 1	○○○ 3	
SALANGA ⤿		○○ 2	○○ 2	○○○ 3
STALI ⦿		○○ ○○ 4	○○ 2	○○○ 3
SHEGU ⦿		○○ ○○ 4		○○○ ○○○ 8
GBANZEGU ⦿		○ 1		
KIKAA ⦿	○○○○○ 5	○○○ ○○○ 6	○○○ 4	○○○○ 4

Figure 4-18 Seasonal calendar for Activity on Fuel Wood in Wamale, Ghana Batchelor et al (2001)

The next figure is an example of a different view of a seasonal calendar, representing the continuous nature of seasons – there is no end. This example concerns an energy issue – forest resources; the idea could easily be applied to other energy issues such as household energy consumption.

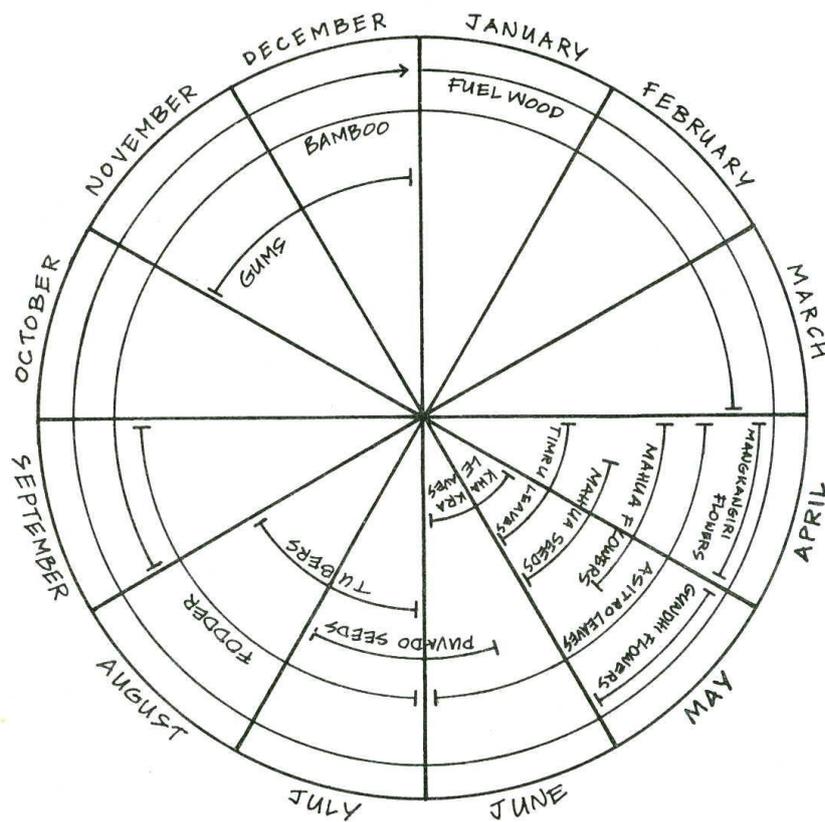


Figure 4-19 Seasonal calendar of forest product flows Poffenberger et al. (1992)

The construction of an energy section for a seasonal calendar can be based around issues such as:

- how do household energy needs change throughout the year e.g. heating and lighting, amount of cooking needed by different foods?
- what different sources of household energy are used throughout the year? e.g. crop residues after harvest, dung cakes when livestock grazed near the home, electricity when the rains don't short circuit the transformer.
- what are the main problems associated with different fuels e.g. poor harvests, livestock disease.
- what energy inputs are required for agricultural processing? e.g. fish smoking, crop drying, transport to markets.
- what energy is used for income generating activities? e.g. grain mills, saw mills, brick making

5.2.13 SOCIAL MAPS

This involves asking people to make a map of the current situation in the village. Once the layout of the village has been completed (showing the main features such as housing, temples, churches, stores, and other infrastructure), they can then add onto it different types of information, depending on the issues to be explored e.g. animal and human census, education and health status, land holding and economic status.

The next figure presents two social maps prepared by groups of men and women in an African village. They have been used to explore issues of well-being. Both show more or less the same items, although differences in the detail illustrate differences in perception between men and women; for example:

- women show more houses than men – wives traditionally live in separate huts from men, and these were not shown by men;
- the garbage dump and community farm are of importance to women;
- the stature of public buildings is of importance to men;
- men provided more detail of roads – ownership of a car was one of the criteria described by men for being “rich”.

The type of information typically represented on a social map can be extended very simply to include energy. For example, infrastructure and well-being can include:

- layout of infrastructure e.g. electricity poles;
- transport infrastructure e.g. type of roads, bus stops;
- fuel availability e.g. battery recharging point, bottled gas retailers;
- fuel poverty;
- categorise households according to fuel type.

Again, an important part of the participatory process is the discussion arising from doing the exercise, and this is where the facilitator can influence things by guiding the discussion and raising topics. For example, in the example above, there was lively debate over defining wealth and well-being, with assets, harvest yields, and God-fearing all being mentioned – the concepts of access to, and amount of energy consumed, could have been introduced to this discussion.

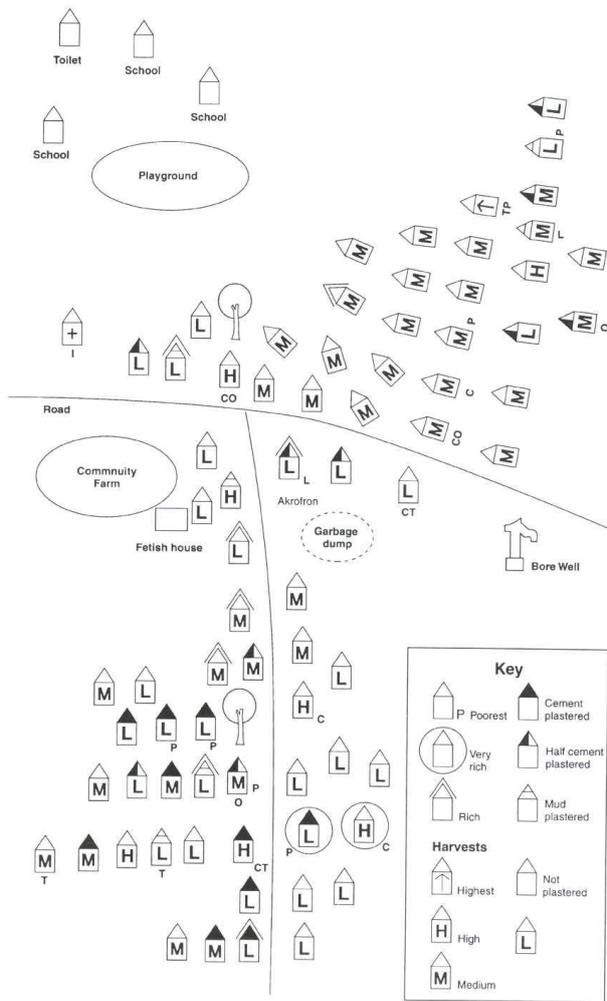


Figure 4-20 Social maps prepared by women Guijt and Kaul Shah (1998)

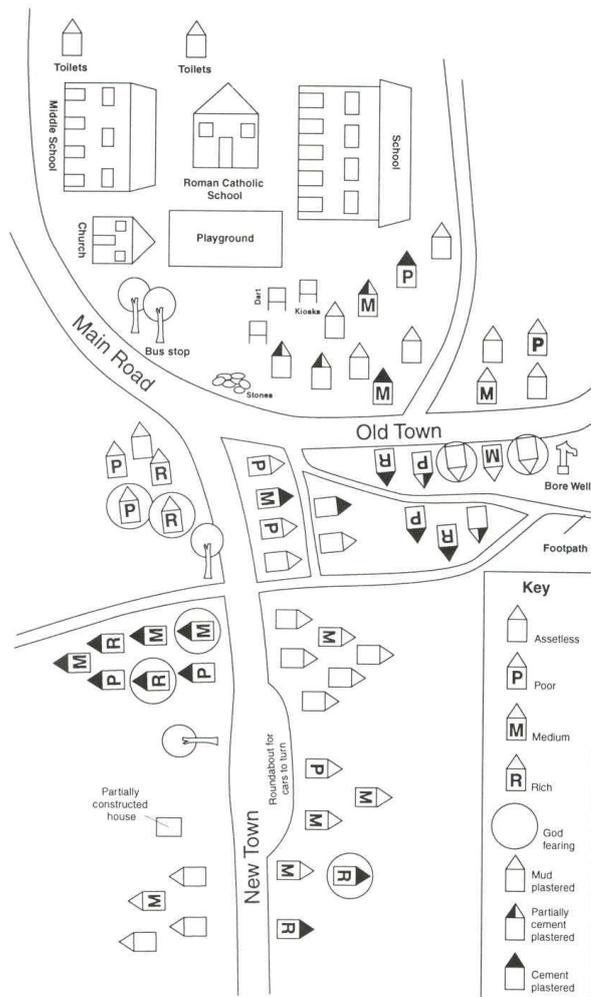


Figure 4-21 Social maps prepared by men Guijt and Kaul Shah (1998)

5.2.14 A SYSTEMS DIAGRAM

A systems diagram shows how a commodity (e.g. information, money, energy) flows between all the components involved in the system. It is a useful tool for making people think logically about a topic e.g. who is affected (i.e. who are the stakeholders), what resources are used (inputs to the system), what is achieved (outputs from the system). A simplified version, which only represents relationships between stakeholders, is often referred to as a systems diagram.

The next figure presents a systems diagram representing the flow of energy within a household.

The construction of this diagram started with identifying the main activities common in the rural society; which provided a framework for discussing energy issues:

Activity	Subdivision of activity
Water lifting	Head - <2m, <7m, >7m
Land preparation	Ploughing, Seeding, Transplanting, Harvesting
Food processing	Transport, Drying, Milling, Cooking
Transport	Bicycle, Animal cart, Motorbike, Vehicle
Fertiliser	Natural, Chemical
Miscellaneous	House building, Radio, lighting, etc.

Table 4-2 Energy flows for a typical household in Cambodia Batchelor (1993)

The diagram shows the various sources and uses of energy; the links show flow of energy:

- potential energy in the water supply goes to the household and the fields;
- people work in all the fields, but livestock only work the rice paddies;
- Fuel wood is obtained from far off forests, and animals are used to pull loaded carts, so work animals provide an energy flow into fuelwood;
- Demand for fuel is regulated by food supply and fuel consumption patterns (Stoves or Stone fires)
- dung from work animals is used as a fertiliser;
- Collection of wood, and processing (either carbonisation or chopping) are both significant uses of human energy.
- transport of food and the milling of rice (processing) are uses of energy
- transport of rice to and from markets

Although not strictly an "energy" flow, fertilisers have been included as a great deal of energy is used in the production of fertilisers, so much so that the energy involved within the chemical fertiliser is a disproportionate part of the whole energy flow used to grow rice;

5.2.15 HISTORICAL TIMELINES

These are useful for finding out about historical events which are regarded as significant in the life of a village or household. Time lines can be a useful way to start discussions on changes (in the past), and how things might change in the future.

Time lines can be “guided” according to the type of information that is required e.g. political events, agricultural events, natural disasters, village development milestones etc. Such a mixture can be useful for prompting discussion on cause and effect relationships on topics of interest e.g. land use can be affected by land tenure legislation.

The key is in the “guiding”. The next figure shows how a time line can be primarily dedicated to the history of forests (wood source). When drawing up a more general time line of village events, it might be necessary to simply prompt people to consider energy related events e.g. forest protection, tree planting, extension of electricity grids, availability of LPG, provision of lighting in health centre etc.

1922	Original Gamtalao village established
1925	Phulwadi falia founded
1947	Independence
1950s	private land allocation and titling
1968 – 1970	commercial clear-felling of forests in the area
1970	Kotwalia basket-makers begin to settle in Phulwadi
1980 – 1987	repeated attempts and failures to reforest Gamtalao area with <i>Acacia auriculiformis</i> and <i>Eucalyptus</i> .
1988	Circle Conservator and GFD staff hold meeting with Gamtalao villagers to discuss reforestation, community needs and collaborative

Figure 4-22 Time Line of Gamtalao Poffenberger et al (1992)

When trying to get people to think about changes to the energy situation in their village you could ask questions such as:

- When was the village electrified? This could lead onto discussions on the subsequent uses of electricity e.g.
 - when was the grain mill electrified?
 - when was the electric irrigation pump installed?
 - when did the health centre get electricity?
 - when did people start to use electric lights in their homes?
- When was the first LPG cylinder / PV lighting system etc. acquired in the village?
- what were the benefits / problems associated with new energy technology?
- When did the forest department pose restrictions on extraction of wood from the village forest?
- when did the tarmac road reach the village?
- what political processes or changes led to energy improvements in the community?

5.2.16 LAND USE TRANSECTS

Land use transects show the different types of land in an area, and are useful for investigating how people use the land (and resources) and for exploring problems that people experience.

Land may typically be split into zones according to ecological zone types, land use, topography, productivity, indigenous technologies etc. People can list a range of information under each category. Information typically covers issues such as soil type, agricultural use, ethnic grouping of residents, ownership. Transects help not only to locate and pin-point various physical aspects of the village, but also to understand and discuss with the people the backgrounds of these items e.g. causes of deforestation, use of common lands, access to forest lands, etc.

Transects can be used to gather information on a range of topics, so the exercise can be managed to include energy related topics e.g. energy related products, tree species and management problems.

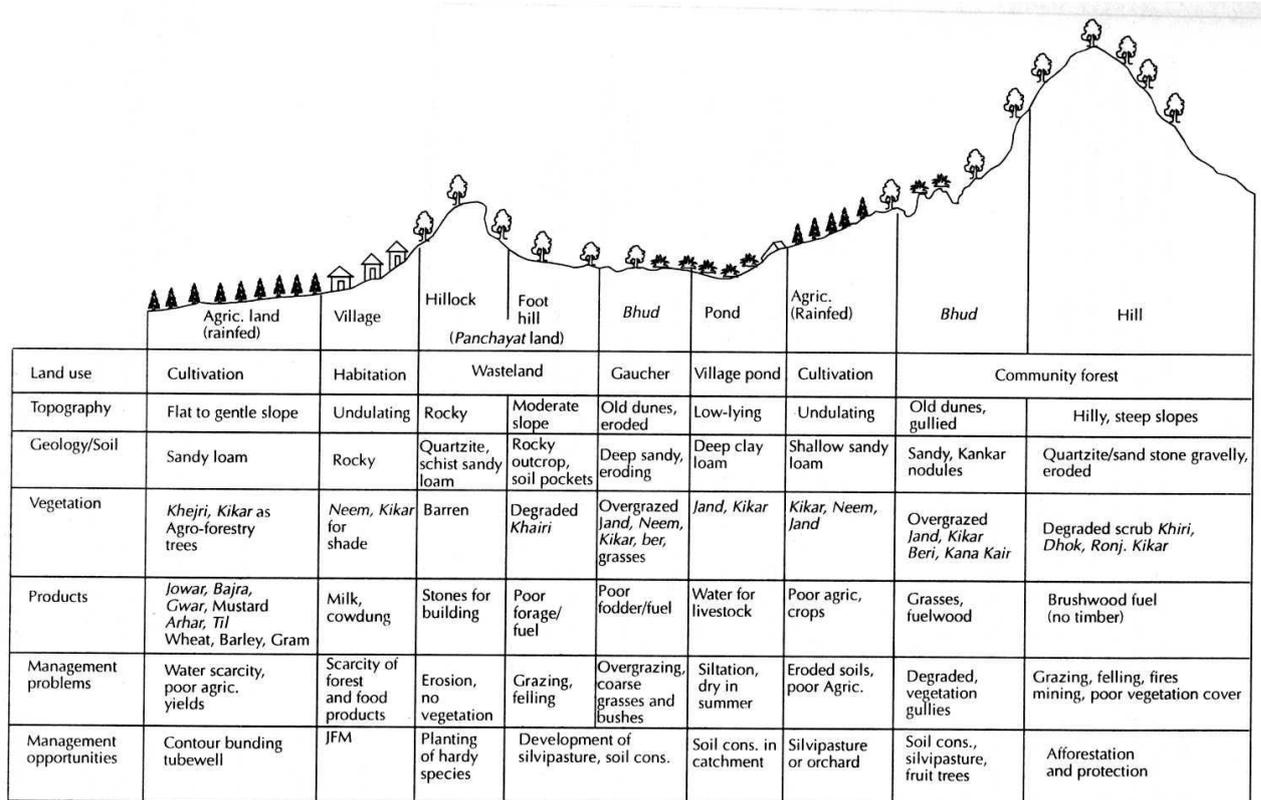


Figure 4-23 Land use transect Singh and Varalakshmi (1998)

Even if alternative means of zoning the land is taken, energy related information can be recorded:

- sources of fuel – wood, dung, crop residues etc.;
- seasonal availability of fuels;
- access to fuel e.g. hazardous areas, seasonal obstacles;
- use of energy resources e.g. household, commercial.

A simpler and more common form of land use transect is shown in Figure 22. Following on from the information gathered producing this land use transect the village decided to plant more trees.

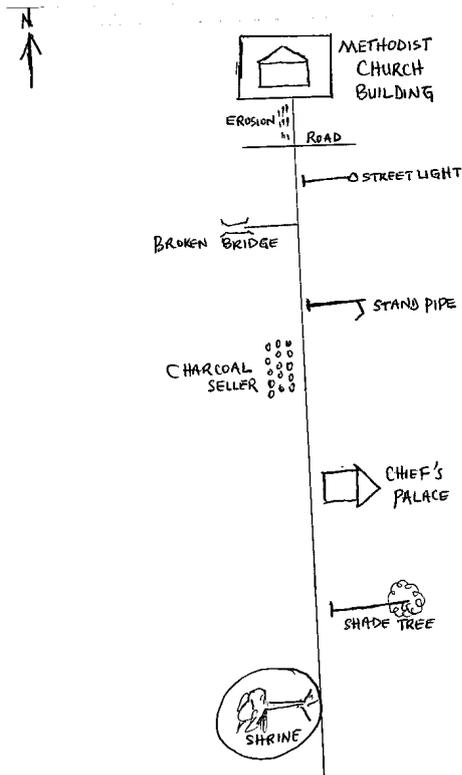


Figure 4-24 Land use transect walk findings from Agonya Kwanyako, Ghana Batchelor et al (2001)

5.3 EXPERIENCE SO FAR

When these community involvement tools were tested in a local authority situation the researchers found the following responses

PRA Tool / method	Whether/how used by:		Information transacted	Issues raised / identified
	Tamale	Agona Swedru		
(Focus) group discussion	Used to introduce topics and as basis for introduce other techniques	Used to discuss issues relating to natural and physical capital.	Importance of fuelwood as an energy source. Extent of changes to forest cover, and causes. Exploring use of alternative fuels (by the wealthy only) and coping strategies adopted by people affected by changes in resources.	Type of forest cover has changed dramatically over last 20 years. People have resorted to using alternatives to fuelwood e.g. husks, palm leaves. Sales of fuel wood is a significant source of income, especially when farming is lean.
Transect walk	Walk concentrated on fuel wood resources.	Group (mostly women) discussed energy issues arising during a walk from the centre of the community.	Tree cover over the course of the walk, availability of fuel wood, charcoal sellers.	
Daily activity	Introduced in the	Applied in mostly	Time spent on farm, household	Women do more work than

chart	context of gender analysis of workloads	female group; applied in the context of group discussion	chores, cooking, and collecting fuel wood. Alternative fuels to overcome scarcity of fuel wood. Selling of fuel wood. Allocation of land for fuel wood.	men Women waste time and energy collecting fuel wood. Potential for introducing alternative fuel cooking technologies. 10 years ago it was men who used to collect fuel wood, now it is women.
Seasonal calendar	Availability, consumption, collection, and expenditure on wood throughout the year	Used with group members in discussion. Used to identify periods of sickness.	Seasonal availability of a variety of fuels. Most common diseases and when they are prevalent	Identified alternative fuels available during periods of scarcity of fuel wood. Women cannot collect fuel wood when they or their children are sick. It is difficult to get wood in the wet seasons. Hot water is needed for bathing during the cold season.
Problem tree	Explore unavailability of fuel wood	Introduced to structure discussion arising from forest depletion problem evident from time trend.	Causes of lack of fuel wood (e.g. tree felling, charcoal production), and the effects of lack of fuel wood (e.g.hunger, pollution).	Something can be done through tree planting, and leaving some trees on farms during land clearing.
Social map	Not used	Clarify ownership and control of land.	Structure of ownership and control of land – regarding tree planting	There is indiscriminate felling of trees, and clan leaders have control of trees.
Historical trend	Track decline in fuel wood availability over a 10 year period.	Used to explore depletion in natural resources, availability of land	Decrease in trees, and changes in type and number of dwellings in the community. Land ownership and authority structures.	Population pressure. Exploitation of fuel wood resources linked to land tenure.
Pairwise ranking	Ranking importance of energy resources.	Promote discussion through exploring availability of tree species. Preferred energy sources.	Availability of trees. Fuels available.	Mahogany is no longer available. Preferred fuel is wood, followed by charcoal, then electricity, and finally kerosene. Need for agro-forestry projects to revamp depleted vegetation.
Network diagrams	Identify relationships within social and family structures as they relate to fuel wood use.	Used in context of group discussion to illustrate how farmers use land	Land ownership and acquisition	Large scale farmers and contractor acquire land directly from landowners. Youth migrate to urban areas because they are not able to acquire land. All stakeholders have a common interest in sustainability of tress.
Semi-structured questionnaire	Not used	Introduced to gather data on alternative cooking fuels arising from use of daily activity chart	Use of charcoal pots, sawdust, kerosene and gas stoves.	80% use charcoal, especially at the rainy season.
Resource mapping	Drawn up by community members; done	Not used	Various species of trees, roads bounding community, sacred groves, dwellings and community	Lack of fuel wood is a problem, but trees remain in the sacred groves.

	using information from the transect walk		buildings	
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Table 4-3. Findings of Piloting Tools and Guidelines in Ghana Batchelor et al (2001)

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