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Information Systems for Natural Resource Management:
Building District Capacities

Sound management of the environment is based of balancing two concerns:
- that natural resources are used wisely and efficiently so that they are not depleted and continue to exist for future generations;
- that there is a fair distribution of resources so that people can use resources to gain a livelihood, a source of income, and reduce poverty.

Balancing concerns for posterity of natural resources with livelihoods
Achieving the right balance between these concerns ensures that communities benefit in sustained wealth creation. Overprotection of resources at the expense of people narrows the livelihood options of people, impoverishes communities, criminalises popular livelihood strategies, results in state policies being regarded as unjust and anti-poor, and leads to alienation of people from policies and a lack of cooperation in implementing policies.

The need for relevant information and dialogue in the policy process
Achieving the right balance requires information about natural resources and people's livelihoods, and dialogue and consensus building on policies between different community interest groups and policy makers. For information to be relevant it needs to be constantly updated and communicated between policy-makers and communities. This communication should be two way. Policymakers need to inform communities about policy options, and why they have decided to implement particular policies based on available information. Communities need to inform policy makers of their needs and the policy options they prefer. There must be dialogue to achieve consensus.

Decentralising information management
Information building processes need to be established at the lowest administrative levels, where government technical staff and development workers interact with communities. If policies are not based on information, dialogue and consensus at this level, a series of progressive interventions at higher levels of policy will fail to materialise in better policies and will merely be empty rhetoric. All too frequently, we have a set of policies that proclaim to be equitable, participatory and democratic, while conditions within the rural areas deteriorate and rural people continue to be alienated by bad policy frameworks. We have a framework for collaborative forestry management enshrined in the 1994 Forest Policy, while the military is brought in to prevent bush burning and chainsaw felling of timber, and chiefs are encouraged to ban certain livelihood practices without debate and consensus.

The role of evidence and consultation
In many instances environmental policy is based on assumptions rather than detailed research or open discussions and consultations with resource users. All too often stakeholder workshops are dominated by indirect stakeholders while the actual users of the resource have a minimum and token presence. Within the districts, environmental committees exist and are vocal in making policies.

However, these policies are rarely based on direct evidence of conditions within the district. They are often based on hearsay or on assumptions made in higher policy circles and transmitted in a top-down fashion.

Lack of data and information within districts

Data within the districts is often minimal and not managed and analysed in a methodical way. It is rarely used in policy-making. Most districts have out of date information. Maps of districts are based on 1970s aerial survey photographs rather than present distribution of settlements. There is no attempt to keep existing data on the district in a systematic way, or for departments to share data they have at their disposal and use it in a meaningful way. Projects operate in isolation, repeating data collecting processes and not sharing and exchanging data. It is possible to generate data from existing revenue collecting activities within a district. For instance collating the revenues collected on various crops and natural resources by settlement gives some idea of the importance and distribution of resources within the district. Yet, this is not carried out because the importance of institutionalising information and communication in departments and agencies is not recognised.

Poor planning capacities

This failure to carry out institutional learning and build the capacities of agencies to base decision-making on information and communication, results in poor planning capacities within the districts. Planning is rarely based on finding out existing and changing conditions within the district and policies are rarely monitored. Information gathering is largely considered to be the activity of experts with sophisticated equipment, which is transmitted downwards as prescriptions. However, these prescriptions often hide a lack of knowledge of what happens in specific locations. They are also used to hide the inefficiencies of existing institutions. Rural producers are blamed for not following policy prescriptions, when the prescriptions are often flawed and do not reflect the reality in the communities End users frequently want to know the reasons for particular policies rather than been told what to do and what not to do. They want to be provided with information with which they can make their own decisions. Information and communication are not seen as an essential part of making institutions and policy work.

Examples of policies that do not work because of poor information communication

- Districts ban bush fires without understanding and considering the range of possible strategies for fire management, which includes early burning and many local adaptive strategies. The ban policies do not work because they do not reflect local strategies and concerns, which often have elements of managing fire. Ban policies are developed without dialogue and consultation with the people. They are dictated to the people in "educational" campaigns, and byelaws imposed by traditional authorities. They are often imposed on the districts by regional coordinating bodies and sector agencies. They command little respect among the people. Therefore the districts and national bodies resort to desperate measures during the dry season, such as sending in the military to deal with "recalcitrant" rural communities. Frequently, there are few prosecutions for violating the ban on bush fire, but many openings for collecting payments from rural communities by security agents and department officers. This reinforces the rural communities distrust of policy. The capacity of the district to manage natural resources has not increased. The policy is essentially reactive, a desperate attempt to be seen to be doing something to manage bushfires.

- District administrations or chiefs (with the backing of the district and national agencies) introduce bans against charcoal production. Charcoal production is assumed to destroy the environment. There is no attempt to justify this with evidence: no figures for rates of destruction, no identification of areas in which charcoal has destroyed the environment. Chiefs introduce bans in communities which do not provide them with enough payments. Bans are removed when the charcoal burners collect "something" for the chief. Chiefs ban charcoal in some areas chiefs while continuing to give out concessions to large-scale migrant

charcoal burners for payments. The banning of charcoal hurts the rural poor for whom it is an important supplementary livelihood. The bans hurt the district, which gains much revenue from charcoal. Policies are perceived by the rural communities to be unjust.

Information and discussion is important for policies to work

When policies are not based on evidence and justified by evidence, and when there are no discussions and consensus building on policy, policies do not work. They reflect poor institutional capacity to diagnose problems, plan solutions and monitor and evaluate the implementation. They create lack of transparency and avenues for corrupt practices. They reflect a lack of constructive engagement with the communities that make up the district.

The requirements of districts to manage information

The importance of information is recognised in the national framework for decentralisation. Several of the laws on decentralisation establish modalities for district policies to be aired before community meetings and ratified by communities. Assembly members are expected to discuss the agenda and findings of district assembly meetings with the communities in their electorate. The 2004 *Guidelines for Operationalisation of District And Regional Planning Coordinating Units* (National Development Planning Commission and Ministry of Local Government and Rural Development, 2004) requires districts to establish a District Planning Coordinating Unit (DPCU), which is responsible for coordinating planning across the various sectors, provide technical advice to the assembly, collate all data relevant to planning within the district, and managing a database for district development processes, activities, projects and programmes across the various sectors. The DPCU is responsible for assisting sub-districts (Area Councils) in developing community planning and reviewing and validating their development priorities. To DPCU is required to hold quarterly meetings with the Area Councils to dialogue on local development issues and inform the Area Councils on the planning and budgeting decisions of the Assembly. The Area Councils are responsible for submitting "monthly reports and data to the DCPU Secretariat through the District Coordinating Director" (p. 13). The DPCU is responsible for updating its data annually and quarterly. Although districts are made responsible for information, no clear national guidelines exist on how districts are to achieve this and the support structures they can call upon to build their capacity to generate and manage information.

The role of the sub-districts

The sub-districts are critical to information flow since they bridge the information gap between what happens within the communities and what is conceptualised in the district planning process. However, the district administrations are making little efforts to activate and build the capacities of the Area Councils. All too often district administrations do not release the revenues that are due to the Area Councils (50 percent of the revenues collected in the Area Councils. This prevents the Area Councils meeting and developing council plans. Failure of the Area Council to meet, plan and participate in information exchange results in poor district planning for all the Area Councils that make up its electorate. Districts that attempt to marginalise their Area Councils are characterised by poor management practices, an inability to plan for their districts and respond to the needs of the electorate. Districts need to play a pro-active role in building the capacities of the Area Councils and bringing them into the planning process as functioning institutions that consult on the basis of information and communicate the needs of the constituents.

Building district capacities for managing information

The requirements of information management are that districts are able to generate information on the existing conditions within the district and update that information. Therefore they cannot depend on outsiders to provide them with information since this will rapidly go out of date and cannot be verified when it is not accurate. Districts must invest in the management of information, institutionalise information collecting, analysis

and updating in their departments, and build their human resource capacity to manage information.

Current information and communication technologies (ICTs) based on the personal computer make the creation of district information systems relatively easy and cheap. These have to be adapted to the district institutional framework. Information systems need to be developed that are easy to use and can be used by many people with minimal training. The tendency to make computers the preserve of a few specialists who have received training should be resisted. Access to computers should be open to all. Districts need to exploit the many funding opportunities to provide access to ICTs to rural communities and rural youth. Given the important role assigned to Area Councils in information, computer training for information management should be open to them.

The district needs to take stock of all the sources of information available within the district and build upon all of these to improve its management of information. This includes the various technicians in departments with knowledge of information technology and the knowledge that various departments have of conditions on the ground. It also includes the knowledge in local communities and Unit Committees of their locality. While local communities have few skilled trained personnel the people have a lot of knowledge of their communities, the economic activities in their communities and what different people do. The Assembly persons and Unit Committee members are well known and they know a lot of people in their neighbourhoods. The challenge is to mobilise these informal networks of people and their knowledge for development. Their intimate knowledge of their communities makes it relatively easy for them to collect information within the communities. There are many people within these communities with sufficient education to involve in data collection, including teachers, technical staff, and those who have Junior Secondary School education. These people have the capacities to learn to use ICTs when provided with suitable training.

Where it may not be feasible to establish Information systems in communities or at the Area Council level, facilities can be provided for the Area Councils to use in the district capitals. At present there are some information initiatives at the regional level, which collect information for whole regions. They design questionnaires and send them to districts and Area Councils to implement. They questionnaires are returned to specialised information units within the regions who process the data. These do no build up skills at the sub-district and district level to collect and update their own information, and make decisions about what relevant information is. The lower administrative levels merely carry out pre-designed surveys initiated by higher level agencies. They do not build upon the potential of existing local knowledge and build up local capacities to use information in a relevant way. Building participatory information systems is important, since this is one step further along the line to creating planning systems based on the exchange of information and consensus-building.

Natural resource management is often erroneously considered a luxury as compared to infrastructure development. However, natural resource management is based on processes of consultation, planning for current and future needs, and managing conflicts between different interest groups, improved livelihood opportunities and wealth creation. Good natural resource management reflects good district planning across sectors that responds to the needs of people, and is also a prerequisite for appropriate infrastructure development processes.