

PART I. WORKSHOP SUMMARY

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INTRODUCTION

Many governments are adopting policies to devolve responsibility for natural resource management to local bodies. Devolution is fuelled by privatization trends, growing fiscal constraints at the state level, and a search for more sustainable resource management. Programs such as Joint Forest Management, Irrigation Management Transfer, or Fisheries Co-Management are all examples of this trend. Successful devolution, however, requires that effective institutions be in place at the local level and that the policy environment be supportive of local management. The particular make-up of these institutions and policies varies across resources and regions, although there are many common elements and lessons to be learned which cut across experience in devolving management of forests, rangelands, aquatic resources, and irrigation, in Africa, Asia, and Latin America.

Although the theoretical advantages of user management have been convincing and the impetus for devolution policies strong, the actual outcomes of devolution programs in various sectors and countries have been mixed. The stated objectives of such programs in terms of positive impact on resource productivity, equity among stakeholders, poverty alleviation, and organizational and environmental sustainability are often not met. Experience has shown that the emergence of strong local management cannot be automatically assumed.

Key questions that have emerged in the process of expanding local authority over natural resources range from property rights and arrangements for collective action and resource use, to supportive institutional and policy frameworks. Among these are:

- How do different property rights and collective action arrangements affect devolution?
- Do these arrangements lead to more equitable, sustainable, and productive use of natural resources?
- What institutional and policy frameworks contribute to a more enabling environment for devolution to be successful?

This report summarizes the discussions and conclusions that were reached during the Workshop on Property Rights, Collective Action and Devolution of

Natural Resource Management, convened June 21-25, 1999 in Puerto Azul, The Philippines. The workshop was sponsored by the System-wide Program on Collective Action and Property Rights (CAPRI) and the German Foundation for International Development (DSE). The International Center for Living Aquatic Resources (ICLARM) hosted the workshop and provided key support in bringing the event to fruition.

CAPRI proposed the workshop as a means to take stock of the various bodies of research surrounding one of the program's priority themes, 'structuring devolution' and draw together cross cutting lessons across what has primarily been sector-oriented approach to devolution issues. One of CAPRI's primary goals is to foster increased collaboration between policy makers, researchers and development practitioners. By co-sponsoring a workshop on devolving rights to natural resources to local communities, CAPRI sought to share and learn from the experiences of different resource sectors and regions, and fuel productive partnerships among different actors in the devolution process that will pave the way for successful implementation.

DSE is particularly supportive of workshops and trainings that ultimately contribute to improving the food security of the poorest one-fifth of the world's population who lack sufficient food to develop their full potential. Hence, this workshop, which sought innovative ways to address the livelihood needs of the poorest, fit in well with their priorities and made them an ideal partner in sponsoring the program.

ICLARM was asked to host the workshop for a number of reasons. The Center has undertaken substantial research on the interactions of property rights and collective action with fisheries and aquatic resources. Such studies have involved analysis of devolution and co-management arrangement. The decision to hold the workshop in the Philippines not only related to ICLARM's presence in the country, but particularly because the country has been a pioneer in promoting local management of natural resources through processes of devolution, decentralization and co-management. In addition to fisheries and coastal management, their efforts have also encompassed the forestry and irrigation sectors. Hosting the workshop in the Philippines provided participants a first hand look at the practical experience of implementing devolution processes and an opportunity to engage with the people leading these initiatives.

The workshop brought together policymakers, researchers and development practitioners with expertise in aquatic resources, rangelands, irrigation and forests. Participants also came from countries in Africa, Latin America and Asia (see Participants' List, Annex 2 at the end of this volume). Despite the diversity of sectors and countries represented, all are engaged in various degrees of devolution of

resource management. This mix proved successful in fostering a rich cross-fertilization of perspectives, experience and knowledge.

The overall goal of the international workshop was to contribute to more appropriate and successful devolution policies and programs by drawing on the insights of policymakers and researchers to identify the conditions for successful devolution, especially the role of property rights and collective action. In particular, workshop participants sought to identify:

1. factors that facilitate collective action for resource management by communities.
2. critical issues and problems that have emerged as devolution policies have been implemented, especially the role of property rights.
3. priorities for further research, based on information needs of policymakers.
4. policy recommendations that will facilitate effective, sustainable, and equitable devolution of natural resource management.

This summary of the workshop discussions begins by addressing the language of devolution in an effort to clarify concepts and terminology that enable a more productive discussion of the issues. This is followed by some of the key arguments made by the workshop participants for devolving rights to resources to local users. Policies and factors that have the potential to strengthen or constrain devolution are addressed at a broad level before looking specifically at how property rights and collective action institutions can shape devolution outcomes. Whereas some factors cut across resource sectors and regions, others are more specific to their contexts. In all cases, proponents of devolution of rights to resource users struggle to understand better what elements facilitate collective action and what factors hinder its creation and sustainability. Finally, a set of recommended frameworks formulated by the workshop participants highlight the potential for fostering a devolution process that leads to the simultaneous improvement of natural resource management and the livelihoods of the poor.

CONCEPTS AND TERMINOLOGY

A lot of complex terminology and meanings surround the subject of devolution of rights and authority. Whereas some use words like ‘devolution’ and ‘decentralization’ interchangeably, others prescribe distinct meanings to these two words. It is therefore useful to begin with a brief introduction to the language and definitions that were adopted during this workshop, as well as clarify the specific themes that this forum sought to address.

‘Devolution’ was used to indicate the transfer of responsibility and authority over natural resources from the state to non-governmental bodies, *particularly user groups*. ‘Decentralization’ on the other hand referred to authority and management

transfers to *lower levels of government* (e.g. the Philippines' Local Government Code of 1991 or India's Panchayati Raj). Another term which sometimes is confused with devolution and decentralization, but was not treated in this workshop is 'deconcentration'. This describes the reallocation of administrative duties from ministry or department headquarters to branch offices of the central government. In this case, there is no transfer of power and authority from the national level. By contrast, 'co-management' involves the sharing of power and responsibilities among multiple stakeholders, and most often includes government and local resource users.

The workshop dealt chiefly with issues pertaining to devolving authority and rights to community and resource user groups. However, issues of decentralization and co-management were also treated, particularly since resource characteristics and political circumstances often warrant such alternative models of authority transfer.

Property rights and collective action lie at the heart of the devolution process because of the legal and organizational implications of transferring authority over natural resources. However, the workshop highlighted differences in the ways these terms are used by social science researchers and by policymakers.

For many policymakers and lay audiences alike, property rights refers to ownership, and is usually thought of as private or state ownership. Researchers often use a broader definition. For example, Bromley defines a 'property right' as "*the capacity to call upon the collective to stand behind one's claim to a benefit stream*" (1991:15, emphasis in the original). Therefore, a right is not a physical entity, but rather an assurance of being able to derive benefits due to the legitimacy accorded by one's smaller or larger society. Implications of these differences are discussed in the papers by Meinzen-Dick and Knox, and Agrawal and Ostrom in this volume. Although the differences in concepts surfaced in several of the discussion groups, the workshop generally adopted the broader concepts of property rights.

Similarly for collective action, what often comes to mind for policymakers are formal organizations. For researchers, however, collective action includes many forms of "action taken by a group (either directly or on its behalf through an organization) in pursuit of members' perceived shared interests (Marshall 1998)." It embraces levels of cooperation ranging from a one-time, informal act to that which is undertaken on a continuous basis by formal organizations that adopt shared rules.

Definitions of these and other terms used in the workshop and in this book are contained in a glossary that was distributed at the workshop (Annex 1 at the end of this volume). This glossary draws extensively from definitions provided by the social science literature.

DEVOLUTION: OPPORTUNITIES AND CONSTRAINTS

OPPORTUNITIES

Over last several years, there has been mounting support for development policies and projects that aim to transfer rights and responsibilities from central governments to more localized bodies, whether local government units, civil society organizations, or informally organized community groups. Both internal and external pressures have yielded a shift away from a more paternalistic view of centralized administrations as the primary authority on what is best for all levels of society. With respect to natural resource management, the last decade has brought increased international attention to environmental issues, fueled by high profile global conferences and international conventions advocating practices that will lead to a cleaner environment and combat resource degradation. Other pressure has been exerted from local communities and non-governmental organizations (NGOs) demanding greater political democracy, including people's rights to manage and reap benefits from the resources they depend on. Examples of this are the devolution policies that were spurred by civil strife in the Philippines and, to some extent, in Indonesia.

In other cases, the impetus for devolving rights and responsibilities is less philosophical, but rather motivated by fiscal constraints. This is particularly true for countries undertaking structural adjustment programs that mandate drastic cuts in government spending. Unable to effectively shoulder the demands of administering and enforcing the rights and responsibilities of the state, governments are looking to pass the responsibilities on to others. Fiscal crisis motivated much of the Philippine government's earlier efforts to invoke decentralization policies, although influences also emerged from the ranks of civil society.

In many instances, a dichotomy exists between rights that are upheld by statutory legislation and those that are actually in practice. While sometimes this contradiction is allowed to persist due to lack of legislative enforcement capacity or tacit sanctioning by a government that does not wish to invoke conflict, the potential always exists for disputes to erupt between competing bases of authority. Because of governments' dominant position of authority, tenure insecurity faces those whose claims are not upheld by the government. Devolving rights to resource users is therefore capable of bridging the gap between customary and statutory rights, heightening tenure security, and harmonizing relations between governments and local resource users.

CONSTRAINTS

As much as there are forces in favor of devolution, there are at least as many counter forces and obstacles that impede its application, which likely account for the fact that its practice is not more widespread. Perhaps most apparent is the lack of political will for governments to hand over power to either local government units or communities. Restructuring and downsizing the role of government agencies implies job losses both for agency employees and contracted personnel. Although agencies may undertake new roles and functions, the reorientation process is likely to be costly and necessitate a different skill mix. Particularly if states are facing fiscal cutbacks, devolution policies may bring about a vacuum in administrative and support functions by neglecting to allocate sufficient investment in developing capacities that respond to new needs.

However, lack of volition may not simply stem from bureaucratic self-interest. Without a track record of local people's capacity to manage resources, states are being asked to take a leap of faith in entrusting a fundamental source of national wealth to those whose management capacity has not been well-tested or documented. This reluctance may be exacerbated if superficial evidence links local communities to natural resource degradation. Closer examination may show that it is not so much a capacity issue, but rather that weak or absent rights have adversely shaped management incentives. Furthermore, governments (as well as other influential interests) may place higher priority on resource conservation than improving the welfare of the poor, and fail to appreciate the potential for mutual progress on both fronts through devolution. But regardless of how they rank different priorities on the political agenda, states do have a responsibility and are held accountable to the welfare of their people and that of their natural resources. Committed policymakers cannot be expected to take unnecessary risks that jeopardize the broader interests of the nation.

Several constraints to effective devolution can also emerge from the local level, many of which relate to property rights and collective action. Weak tenure security dampens user incentives to protect natural resources and invest in sustainable management technologies since they cannot be assured of garnering the benefits. Property rights that extend this assurance and are backed and enforced by legitimate authorities have the potential to favorably alter NRM behavior. Policies that assign responsibilities to local people to manage resources without transferring the associated rights stand to yield few, if any, improvements and are likely to result in feelings of frustration or apathy on the part of local populations. It should be stressed that secure tenure is not confined to titled private property (which can even weaken tenure security for some), but instead can include many bundles of rights

that provide people the necessary assurances in the context of their local environment (for examples, see Agrawal and Ostrom's paper in this volume). Tenure security can be derived from common property as well as private property.

Spatially extensive resources (e.g. rangelands, forests, fisheries, irrigation works) are often better managed by groups as compared to individuals or households, particularly when there are disadvantages to parceling a resource and input requirements are significant. Lack of institutions for collective action can stifle or retard the prospects for devolving authority to these landscape-level resources or technologies. If communities have not developed management rules or do not have experience in cooperating to manage large scale resources, the prospects for generating these processes are less promising than if such institutions are already in place or there is a recent history of collective action. Likewise, insufficient technical knowledge of ecological dynamics and resource husbandry may also hinder local management, although there is ample evidence that most communities possess a high degree of indigenous knowledge and skills in dealing with their local resources. When it comes to technologies like irrigation that require substantial investments, communities may be reluctant to undertake the necessary operations and management burdens, or the costs of rehabilitating structures previously neglected by the government agencies. The issue may be one of technical or financial or labor capacity. It may also stem from an ingrained expectation that resource management is the responsibility of the government and lack of confidence that rights and other benefits will accompany transfers of responsibilities.

PROPERTY RIGHTS, COLLECTIVE ACTION AND CO-MANAGEMENT

Throughout the agricultural research community and among policymakers whose countries rely fundamentally on agriculture, it is becoming increasingly apparent that technology improvement by itself is not sufficient to combat the pervasive poverty that afflicts the rural areas of many developing countries. And although structural adjustment policies have been prescribed in the hopes of freeing up prices and attracting new markets for developing country goods, widespread market failures have prompted highly uneven patterns of development and often discriminate against the poorest, especially those who live in biophysically and socio-economically less-favored areas. Failures of the market have often been addressed by creating larger roles for governments. However, shortcomings in many states' administrative capacity have both fostered local institutions that serve as substitutes and coping mechanisms (e.g. strategies that replace traditional insurance and credit facilities) and carved out opportunities for creative solutions that are administered more effectively and democratically at the local level. A sharp understanding of the existing ability and potentials of local institutions to address

poverty, as well as the impact of policies and political-economic systems are critical to identifying and developing opportunities to alleviate poverty, such as that which can be achieved by devolving rights to resources to those whose livelihoods directly depend on them.

Compared to industrialized nations, developing country governments have moderate to severe capacity constraints when it comes to administering governance. Much of these stem from shortages of financial resources which place restrictions on getting the quantity and quality of personnel needed, building essential soft and hard infrastructure, and developing systems to ensure administrative efficiency. Political factors that shape how funds are allocated and the presence of corruption can also hinder effective governance.

When it comes to governing forests, rangelands, watersheds, fisheries and irrigation technologies, local people and their institutions frequently have a distinct advantage over distant centralized management by the state. Their knowledge of the environment and resource characteristics is typically superior since they constantly interact with these resources and rely on them for survival. They therefore have a strong stake in continued resource availability and are in a better position to understand the ways to sustain resource production in a manner that is responsive to dynamic livelihood needs and environmental conditions. Furthermore, local people are already in place to undertake sustainable onsite management, monitor resource use and enforce rules designed to protect resources—provided there are incentives for them to do so. Consequently, local management has the potential to be cheaper and more efficient than management by distant government administrators.

Property rights and collective action institutions are fundamentally related to how natural resources are managed locally and the efficiency, environmental, and poverty outcomes that emerge from management practices. Property rights specify the different types of claims people have to resources by specifying what one can and cannot do and what benefits one is entitled to. They determine long-term incentives to invest in, sustain, and improve resources. Depending on their distribution, property rights shape patterns of equality and inequality with respect to resource access. And depending on who participates, collective action by multiple resource users may enable a more equitable distribution of resource benefits.

Although the large spatial scale of many natural resources and their accompanying technologies may call for group management on efficiency grounds, collective action also requires voluntary adherence to a common set of rules and coordinated contributions by its participants. The success of collective action will therefore depend on the whether the conditions are present to evoke and sustain it.

PROPERTY RIGHTS

For an effective devolution process to emerge, consideration will need to be given to what type of property rights create incentives for people to manage resources sustainably and productively, while at the same time ensuring access to those whose livelihoods depend on them. Managed common property institutions are often appropriate for landscape level resources and involve different combinations of property rights and collective action institutions depending on ecological and socioeconomic conditions. Because they restrict access to a limited group of users, managed common property arrangements better assure that the benefits of investments in resources are confined to the investors. This is particularly important when resources are scarce in relation to the population that relies on them. By contrast, unmanaged common property (or 'open access') unleashes incentives for users to capture maximum private benefits with minimum investment simply because there is no mapping of the two. Assuming neither the group nor the area covered by the resource units are too large, common property arrangements also allow members to monitor use among the group, thereby dissuading them from taking more or investing less than their agreed share. At the same time, to be effective, common property regimes must be able to exclude outsiders. Where economically or politically powerful outsiders attempt to use the resource, local user groups may need backing from local and/or central government to protect their rights, or penalize outsiders caught breaking the rules. On both the fisheries and forestry field trips, local managers identified this as a critical issue (see Workshop Field Visits in Part II of this volume).

Property rights to resources that are held in common also tend to accommodate many different users (e.g. women, men, pastoralists, agriculturalists, fishers, hunters, etc.), who exercise a variety of resource uses (e.g. animal grazing, irrigation, firewood, collecting tree products, preserving mangroves that augment fish production, etc.). Access and use rights may be simultaneous among different types of uses and users, or in cases where they conflict or the uses fail to coincide, they might be structured to overlap. This is possible even with private property that provides for secondary use rights. For example, many areas of sub-Saharan Africa have crop-livestock arrangements whereby livestock graze the residues on fallow cropland and deposit organic material that enriches soil for the next growing season. In other contexts, men hold primary use rights to agricultural land, but are obligated to provide wives and daughters secondary use rights to cultivate their own crops.

Although common property and overlapping private property arrangements do not guarantee equity and have been known to exclude those with less power and voice, the outcome of these systems is often greater equality that would be achieved under traditional private property regimes. Devolution efforts will therefore do well

to consider the equity and social security values of these arrangements, particularly in environments where viable market alternatives are limited or non-existent. Care should also be taken to examine the inequities in these arrangements and search for means to empower the less enfranchised and foster their inclusion.

The extent to which local people currently exercise rights to natural resources and the history of their control vary tremendously across regions, resources, and social groups. In some cases, local people have occupied an area for a long time and either currently or historically held extensive rights to the surrounding natural resources. This has not only been possible for sedentary populations, but also nomadic herders whose cyclical grazing patterns enable them to make claims to established resource clusters. Over the past two centuries, however, the formation of nations and centralized governments in Africa, Asia and Latin America have led states to impose controls over natural resources in the interest of preserving these stocks of wealth. Yet, where these controls have provided for exclusive state ownership and severely restricted use by local residents, the implications have been mostly expensive, ineffective, and contributed to resource degradation.

Both the history of people's rights to resources and the length of their occupation in an area fundamentally determine the nature of a devolution process. Are rights really being *devolved* from the state to local people, or is it that the state is *restituting* rights to users who have a recently history of resource ownership? Is this a case where the state profoundly intervened in taking rights away from people and restricting their use or one where the state's weak enforcement capacity translated to local users retaining *de facto* rights in spite of the laws on the books? If it is a case of restitution, institutions for local resource management may already be in place, or they may only need to be revived or modified to better meet equity and poverty alleviation goals.

In situations where local residents have little or no recent history in managing resources and creating and sustaining the necessary institutions to support their management, much more work will be needed to fill knowledge gaps, negotiate property rights and other management rules, and generate and sustain a process of collective action. This applies, for example, in some large-scale irrigation systems where the state has built the systems and delivered water to farmers.

COLLECTIVE ACTION

A number of other factors influence whether collective action will emerge and how resilient it is. Resource scarcity may evoke an inverse-U relationship: when the resource is abundant, there is little need for collective management. The need grows as resources become scarcer. But when resources are very scarce, intense

competition among users may overwhelm incentives to cooperate. Growing integration of rural communities with markets can have mixed effects. As the resource increases in value because of links to markets, this may lead to greater incentives to protect those resources to assure a continued stream of benefits, or it may create incentives to degrade them faster. Much will depend on the degree of tenure security offered by the prevailing property rights system. Markets can also provide people with alternative livelihood options (e.g. insurance) that enable them to forego collective action designed to meet these needs.

If people have experience with collective action in other spheres (e.g. advocacy and political organization, credit and savings groups), they are more likely to be successful in jointly managing natural resources. However, collective action for resource management is very often not a new phenomenon, although institutions and social capital arrangements may have been suppressed by state intervention. Reviving collective action to sustain devolution then requires rebuilding people's trust in government programs as well as integrating local values and norms in the process of reinstating institutions.

Collective decision-making mechanisms and the consequent distributional impacts of devolution are influenced by existing power distributions. Simply imposing majority rule does not ensure devolution is democratic since oftentimes those who lose out are those who can least afford to, namely the poor. Majority rule also tends to lead to alienation and mistrust by those whose interests are marginalized, thereby undermining the potential for collective action.

Other critical factors shaping collective action outcomes include the degree to which resources are central to people's livelihoods, group heterogeneity and wealth distribution, political rights to organize and manage resources locally, the level of investment needed to make resources productive, and the support of the state in facilitating collective action (projects that lack this backing are usually not sustainable).

In addition to these factors, many more such conditions for evoking and sustaining collective action have been put forth by various scholars. Several of these are outlined in the text box included in this chapter.

CO-MANAGEMENT

Devolution can take on various forms depending on their contexts. Resource characteristics, community cohesion, financial considerations, political dynamics and power distributions are major elements in determining the extent to which communities assume the lion's share of authority and responsibilities for resource

management versus engage in more even sharing arrangements with government agencies.

Governments that are reluctant to let go of a large degree of power or are dubious of local people's capacity to assume control over resource management may find a gradual process of rights transfer more palatable or reassuring. Under these circumstances, caution must be exercised to keep devolution of responsibilities proportional to rights, otherwise efforts may fail due to lack of incentives for local people to assume those duties. Systems need to be put in place to monitor community track records in managing resources or to monitor institutional restructuring of government agencies—as well as indicators that signal when to undertake the next level of rights transfer.

Other advantages of co-management are related to resource scale, coordination capacity and power. The large scale and transboundary nature of resources like river basins, rangelands and oceans limits the extent to which small user groups can manage them effectively as a single unit. Whereas local management of subsets of these resources may be quite effective, coordination of more macro management needs may be more effectively carried out by the state. When many stakeholders are involved, governments are better positioned to identify and coordinate various stakeholders in a negotiating forum. They wield significantly greater power in negotiations with international governments and commercial interests compared to community groups or even federations. Enforcement is a key area where governments can often be more effective than local communities due to their scale and power advantages or simply because people face social ramifications if they have to sanction their own community members. However, the difficulty often lies in the capacity of resource users to galvanize the support of government authorities in enforcing laws they are assigned to uphold, often because doing so does not correspond to their political interests.

Co-management often involves devolving power, decision-making, rights and responsibilities to lower levels of government as well as resource users. It is more likely to be an effective capacity building tool for resource users when government functions are well decentralized and principles of subsidiarity are upheld. Subsidiarity involves assigning authority and responsibilities to the lowest level that is capable of managing and implementing them effectively. Proximity to resources and their users usually makes local government units more effective administrators and managers of resources than those closer to the center, while the former are also in a better position to train and be responsive to local users.

Co-management is effective when it is based on a democratic process that permits local communities to become involved in designing policies, legislation and codes, plus monitor resource use. Like devolution, part of its success relies on an

extended negotiation process among resource stakeholders, clearly defining roles and responsibilities, assigning procedures, and adopting conflict resolution mechanisms.

FACTORS THAT ARE PARTICULAR TO RESOURCE SECTORS AND REGIONS

Thus far, this summary of the workshop discussion has focused on property rights and collective action issues that generally cut across resources and regions and can therefore be considered when structuring devolution in multiple contexts. Nevertheless, structuring working groups according to the resource expertise enabled the workshop participants to come up with a number of factors that distinguished resource sectors from one another and therefore shed light on implications for what types of property rights and collective action institutions and policies would be most conducive to effective devolution.

In addition to differences in the resources themselves, the workshop also highlighted differences in the degree of attention that devolution has received from policymakers and researchers in that sector. The workshop built upon research on devolution in each sector that has been conducted by CGIAR centers and others, which is summarized in the plenary papers in this volume.

Box: *Theoretical factors commonly cited as conditions for collective action and local organization*

The likelihood and success of collective action and local organization tends to be greater when:

- Resources are relatively small in size and resource boundaries are more clearly defined (Ostrom 1990; Wade 1988; Bardhan 1993).
- There is the capacity to exclude others from use of the resource (Oakerson 1992; Nugent 1993)
- The number of resource users is fewer (Ostrom 1990; Tang 1992; Wade 1988)
- There is homogeneity of user norms and interests (Lawry 1990; Bardhan 1993; Tang 1992; Johnson and Libecap 1982). At the same time, other authors have pointed out that member diversity can be important in lowering risks (Williams, 1997) and for injecting the necessary leadership and legitimacy into local organizations (Baland and Platteau 1996; Ostrom 1997)
- Rules, arrangements, and/or governance structures exist for defining membership and access, establishing and monitoring resource use, raising

and negotiating resource problems, decision-making, and sanctioning those who violate rules (Ostrom 1990; Wade 1988; Nugent 1993; Oakerson 1992)

(Source: Rasmussen and Meinzen-Dick 1995 and Knox and Hazell 1999)

In general, the likelihood of success increases the greater the degree the features of the resource, the users and the governance structures they apply enable minimization of the assurance problem (the possibility of free-ridership) and the smaller the financial, transaction, and opportunity costs of organizing and excluding others from the resource. Other aspects shaping collective action outcomes concern the legitimacy accorded to collective action organizations, the value attributed to the resource, and power relations within the group (Knox and Hazell 1999).

Of these, irrigation has generated hundreds of studies addressing various forms of farmer irrigation management over the past two decades. A number of international conferences and an International Network on Participatory Irrigation Management have highlighted issues surrounding irrigation management transfer and made policymakers aware of them. Thus, the irrigation group was able to develop the most detailed set of recommendations for research and policy (see the appendix at the end of this chapter). By contrast, research of this nature on rangelands is still in progress, and there have been far fewer international policy conferences on their devolution. There was therefore much groundwork to be covered in understanding the complexities of the resource base and institutions, such that participants found the discussions fruitful for establishing common understanding.

RANGELANDS

Rangelands are typically characterized by their capacity to support livestock and herder populations. Unlike pastures, they are spatially extensive, often arid and unable to support intensive agriculture, and subject to a high degree of climatic variation and drought. Large areas of sub-Saharan Africa, West Asia and North Africa (WANA) constitute rangelands, including the Sahel, large parts of the African Horn, the majority of Botswana and Namibia, as well as significant portions of Syria, Morocco, Algeria, Jordan, Egypt, Tunisia, Iran, Iraq, Mongolia and Afghanistan. Some of the dry or mountainous regions of India, China, Pakistan and Nepal support significant pastoral populations.

Particularly in sub-Saharan Africa and WANA, weather patterns consisting of erratic and short heavy rains followed by extended dry periods contribute to a non-equilibrium ecosystem where resource production is dynamic and unpredictable, and

often yields low returns. For this reason, mobility is a central characteristic of many herder populations. It allows them to graze their animals and exploit rangeland resources on an opportunistic basis that is consistent with irregular resource availability. Because of the marginal nature of land and resources, pressures from commercial interests trying to claim rangeland resources is rare. More often, competition arises from agricultural and agro-pastoral populations, either when land pressures drive farmers to migrate to less arable areas or when droughts force pastoralists into more humid agricultural regions.

High degrees of environmental variation also make it difficult for scientists, development practitioners and herders to agree on indicators of degradation and rangeland sustainability. What appears to be considerable deterioration in the resource base at a given point in time may recover when climatic conditions improve. To understand what constitutes cyclical versus lasting degradation, one needs to have a firm understanding of the resilience of the resource base in a particular regions and how much pressure it can withstand. Since herders possess tremendous insight and experience on these matters, efforts to assess rangeland degradation would do well to involve them in the identification and measurement of indicators.

Not only are rangeland ecologies dynamic and varied, but so are socioeconomic, political and cultural values. Pastoralists in Africa tend to be members of large, tribal-based groups. Strong social networks steeped in behavioral norms and kinship obligations are the basis for much collective action behavior, including management of rangeland resources. Many tribes in Africa are inherently hierarchical with significant degrees of asset and power inequalities. In some cases, the leadership of elites will serve to bolster cooperation, particularly since elites often look after the more disenfranchised members of their tribe in times of stress, instilling a sense of reciprocal obligation in the latter. Negative judgments about the inequity of these institutions have to be weighed carefully against their social security provisions.

Yet, despite this potential, the large scale and lack of infrastructure in most African rangelands, coupled with the spatial mobility of herders, contribute to high organization costs. Moreover, weak political power at the national level places herders at a disadvantage when it comes to devolving rights to them. In many Sahelian countries, there is little legislation when it comes to rangeland management, whereas mobility (including cross-boundary migration) exacerbates their political marginalization. This contrasts with the situation in Mongolia where herders make up the political majority, such that national policies tend to reflect their interests.

FISHERIES

Aquatic resources, including fisheries share several characteristics with rangelands in that both resources often are characterized by their high variability, species mobility, and non-equilibrium environments. Coastal management and ocean fishing in particular have many transboundary implications. The dynamic nature of these two resources and the tendency for widespread overlapping claims underscores the need to develop procedures for devolving authority, rather than simply assigning rights.

Unlike rangelands, however, many small-scale aquatic resource users face considerable competition from commercial fishers equipped with superior technologies. In some cases, tourist activities also present threats to aquatic environments. Given the enforcement challenges to small fishers presented by these more powerful interests, as well as the transboundary considerations, devolution of coastal and ocean resources has generally leaned toward a co-management model. Governments are likely to have comparative advantages in international negotiations and in enforcing policies and laws that restrict the activities of large scale fishers, while quota systems and other use restrictions need to extend beyond the local or even national level to be effective. Nevertheless, the participation of user groups and federations of small-scale fishers in these dialogues is essential to ensure their interests are upheld.

IRRIGATION

Irrigation stands out as being a combination of both a natural resource (water) and a physical technology. Although the sector is one of the most advanced when it comes to negotiating the transfer of rights and management to local users, its devolution is still sensitive and controversial. Large-scale canal irrigation systems typically embody a substantial level of government financial and manpower investment in both construction, maintenance, and water supply. There may be fiscal benefits associated with devolving rights to irrigation management, but it is also likely to be accompanied by the retrenchment of numerous administrators, extension workers and irrigation agency staff or contractors.

Like fisheries, governments may have comparative advantages in certain aspects of large-scale irrigation management, namely construction of the larger infrastructure as well as coordination and maintenance of the headworks. Unlike most other sectors, devolution of local irrigation management has by and large involved organization by formal groups, known as Water User Associations (WUAs). This derives from the need for formalized rules and procedures when it comes to assigning water allocations, contracting service delivery, and paying fees.

Recognized associations may also have greater bargaining power when it comes to negotiating their interests compared to informal groups.

Many small-scale systems were built by groups of farmers and have remained under their authority unless taken over by the state (often in the context of external “assistance” projects to rehabilitate certain structures). Many of the early management transfers (e.g. of the communal irrigation systems in the Philippines) mostly involved restoring such systems to farmers’ control. As in the case of rangelands, the critical question in these cases is whether the former management institutions are strong enough to take over again, or if they have been eroded enough that they need assistance of some form to take over the systems.

FORESTS AND TREES

Forests and trees supply poor people with a vast number of goods and services that vary with agroecological, social and economic conditions. Forests often accommodate an especially wide array of multiple uses and users who exercise overlapping, and sometimes competitive, claims. Complex relationships sometimes exist between trees and the land on which they are planted. In parts of Africa for example, local institutions recognize clearing forested land of trees as establishing a claim, while at the same time, planting trees is also viewed as instituting or confirming rights to land.

However, the imposition of restrictions on forest use by states has been linked to widespread degradation on the grounds that it robs people of incentives to manage them sustainably. A particularly rich set of case studies documents experiences in India with state efforts to restrict local forest use as well as to carry out shared management with local users (see Agrawal and Ostrom in this volume). Evidence from Uganda documents an increase in tree cover densities on private agricultural land against a decline on state-owned and common woodlands and bushlands between 1960 and 1995 (Place and Otsuka 2000). (No indication was given in the study as to whether common lands were managed or unmanaged.) Countries implementing devolution of forest resources will need to be cognizant of the intricate interactions of uses, users and local rights underlying them, and the extent to which local management institutions have been weakened by state control.

As with coastal resources, there are many instances where competition from commercial interests threatens local management of forests. International environmental groups can also be powerful stakeholders, many times advocating for heavy restrictions on forest use including that of local users. Where influential stakeholder interests clash with those of small scale users, devolution efforts will

need to consider the capacity of the latter to defend their claims as well as the incentives of government officials to uphold local resource users' rights.

POLICIES THAT HINDER DEVOLUTION

Although there is increasing support in many countries for devolution of natural resource management to local users, or in some cases decentralization to local government units, numerous policy constraints exist which can fracture the process by preventing devolution from taking off, impeding progress, or contributing to failures. Some of the most common policy failures are those that assign responsibilities for managing resources without allocating corresponding rights. Without rights to claim the benefits derived from their investment, resource users lack the necessary incentives to manage resources in a sustainable manner. Uncertainty about whether the government or others will lay claim to resources will rather induce people to quickly draw on the benefits of resources and degrade them.

Policies or systems of political patronage that favor the wealthy or elites (e.g. commercial or tourists interests) can weaken local institutions for resource management. Unable to compete with these interests or constantly finding themselves sacrificing their investments to the more powerful, small-scale users become frustrated and demoralized. At the same time, it is often small-scale users who are implicated as being the major sources of resource degradation, when it is actually commercial and large-scale resource users who contribute the most to degradation and negatively affect the resource management incentives of small-scale users.

The policies of international agencies and donors can also block the path to successful devolution. Studies of irrigation management transfer demonstrate that subsidies are typically needed to facilitate the initial devolution process to offset investment costs and lower the risks of participation and collective action. Yet subsidies are widely discouraged in the international aid community for fear they will introduce market distortions and create dependencies. Nevertheless, temporary subsidy structures that induce local investment rather than hinder it are practicable.

RECOMMENDED FRAMEWORKS FOR DEVOLVING NATURAL RESOURCE MANAGEMENT TO LOCAL USERS AND FOSTERING AN ENABLING ENVIRONMENT TO SUPPORT IT

Countries that opt to undertake a process of devolving rights to local resource users must be prepared to encounter and deal with many complex issues, make difficult choices, and live with certain tradeoffs. The process of defining rights is even more complex when we consider the array and multitude of uses and users,

levels and types of rights, bases for upholding claims, and interactions with other inputs and resource sectors. It is difficult to define whom the users and stakeholders are, and structure negotiating forums and conflict resolution mechanisms that are participatory and equitable. The conditions and incentives that contribute to successful collective action are not always present, and as the text box would indicate, often challenging to engender. Where incentives and mechanisms are lacking, they will require careful cultivation in ways that respect the priorities of the poor. Moreover, policy environments in developing countries have traditionally not favored local management.

Nevertheless, if carried out successfully, devolution of rights to local users promises many rewards such as poverty reduction, greater democracy and empowerment of marginalized segments of society, less costly and bureaucratic government administration, and fewer large-scale conflicts over resources. Policymakers who are convinced of the merits of devolution will need guidance on what types of policies have the potential to yield the best results. Whereas part of the answers to the questions of policymakers, extension workers and development practitioners implementing devolution will need to evolve from experience (including trial and error), research can play a key role in informing the process through developing well-grounded theoretical hypotheses and analyzing the experience of others.

The following section presents a number of the recommendations posed by the workshop participants. They are structured according to whether they are recommendations directed at researchers, development practitioners and extension workers seeking to strengthen local institutions, or policy makers—although in several cases they straddle more than one audience. Although most proposals are of a more general nature, participants also stressed that small differences in socioeconomic, political and ecological contexts can have large implications for what devolution policies and institutional elements will be appropriate. Significant consideration was therefore given to the diagnostic and negotiation phases of a devolution process, which enable the generation of unique solutions to unique situations.

RESEARCH AND DIAGNOSIS

Although devolution of rights to local users of natural resources is gaining greater acceptance and recognition in the international community, implementation has yet to become widespread in most countries that have opted to embark on this path. If substantial progress is to be made in transferring rights, research efforts on devolution will have to be stepped up. Otherwise, the risks of venturing into

unknown waters may limit government action, or lack of guidance contributes to implementation failures.

Adaptive frameworks

There is a profound need for adaptive frameworks that enable policymakers to identify opportunities and constraints to devolution, envision various devolution options and processes, and evaluate their benefits, costs and tradeoffs—considering various ecological, economic, sociological, political, and infrastructure conditions. Significant empirical justification should accompany theoretical arguments and models, along with an analysis of what has contributed to the performance of different devolution models and implementation practices. In particular, what impact have they had on poverty, asset distribution, women’s livelihoods and that of other marginalized groups, natural resource production and sustainability, and economic growth? What are the necessary components for creating an enabling environment in support of devolution? Useful research that will add to the robustness of these frameworks includes empirical examinations of:

- what factors encourage, discourage, and otherwise shape the nature of collective action and organization for resource management,
- what types of property rights need to be considered and what procedures for allocating and upholding those rights can address devolution goals,
- what changes are needed in government roles and functions, public administrative structures, legislation, and human and technical capacity to enable devolution,
- what types of negotiating forums and conflict resolution mechanisms have proven effective and how do they link to judicial and legislative systems, and
- what types of incentives encourage policy makers and government agencies to support devolution and how can they be instituted?

Understanding incentives for sustainable resource management calls for research to assess the value of resource uses and services from local to global levels against the costs of their management. Such studies also need to take account of transaction costs, such as those that are inherent in collective action. If such costs overwhelm the benefits people derive from having rights to resources, devolution may flounder from lack of support from resource users rather than the state.

Diagnostic Action Research

If policy frameworks are to be truly adaptive and appropriate, they need to be grounded in local realities and respond to local needs. Moreover, devolution cannot simply take place at the national policy level, but requires coordination and complementarities among various levels, beginning with local communities and local government units. Diagnostic action research is a fundamental ingredient for successful devolution. If it is carried out using multidisciplinary and participatory methods, it enables the process to be appropriate, democratic and empowering.

Diagnoses should ideally begin with understanding the challenges rural communities face and what their priorities and objectives are. Does devolution present a potential solution to improving people's livelihoods? Are they likely to support and contribute to a process that involves transferring rights and responsibilities to them? What kind of information needs do local people have that will better enable them to make these decisions?

Carving out appropriate devolution mechanisms means assessing both institutional and environmental conditions, and seeking to understand the interaction between the two. Examining the stock of local knowledge on resource characteristics, interactions, uses, and management technologies—as well as the performance of property rights and collective action institutions will shed light on local people's capacity to manage resources successfully and what kind of support they might need.

Other important components to be assessed in a diagnosis include:

- Resource characteristics (including *scale, mobility, scarcity, centrality to livelihoods*), climatic conditions, and ecological interactions,
- Resource uses and property rights to resources: multiple uses and users of resources, types of rights—both statutory and locally practiced, who has rights to resources and how do they access them, what are the bases for legitimizing claims, how are rights negotiated, what sort of conflicts occur and what types of resolution mechanisms exist and how do they function?
- Collective action: the need for collective action to manage resources, community cohesiveness and social capital relationships, existing collective action institutions and organizations, collective action for natural resource management, the potential for successful collective action given resource and community characteristics and the policy environment, equality and representativeness of collective action forums, organizational formality and structure, organizational powers and functions, enforcement capacity of collective action.

- What sort of support do communities desire from the state if they are to be held accountable for resource management? This may include the state providing back-up enforcement (especially against outsiders), co-financing some investments, providing of financial services (e.g. credit), supplying information, education, extension or other human capacity development. Conversely, what is the capacity and willingness of the state to provide these services and support? What is the potential for structuring negotiating forums that bring together representatives of both local communities and the state? What are the likely outcomes of various arrangements between the state and local people?

Diagnostic action research can be an even more effective and attractive tool if innovations are developed on ways to lower the costs of implementing participatory and multi-stakeholder methodologies. More exploration is also needed on means for engaging policymakers in the research and diagnosis process, effective mechanisms for filtering research into the policymaking process, and low-cost monitoring and evaluation tools to track the implementation and performance of devolution.

INSTITUTION BUILDING AND STRENGTHENING

The process of strengthening or adapting institutions for resource management or even creating new ones builds on the action research phase and an understanding of people's circumstances, capacities, and aspirations. The more distant local people are from managing their natural resources, the more likely the process will be slow to take hold and require greater investment. Nevertheless, the promise of increased self-reliance and livelihood security that accompanies local control over natural resources should motivate widespread support for these investments.

Together, policymaker, practitioner and researcher participants outlined several recommendations for what they considered to be best practice in institution building and preparing the ground for successful devolution.

Methods

Similar to their application in research, participatory and multi-stakeholder methodologies greatly enhance the prospects of identifying appropriate and sustainable solutions that reflect the needs and desires of local resource users. In fact, the process of enhancing community-level rules and institutions to support devolution is hardly conceivable without the involvement of those who are to uphold those rules. In all cases, efforts will need to be undertaken by practitioners to amplify the voices of more marginalized societal groups and prevent local elites from taking over. Participatory techniques also promote the incorporation of local knowledge and skills into institutional growth. Although decision-making processes

are likely to be more time consuming, multi-stakeholder negotiations offer more enduring solutions.

Property rights

Property rights are significantly more likely to address the interests and needs of local people when they are not imposed from outside, but rather are based on existing rights institutions and reflect local values and norms. Many rural communities acknowledge rights in common to natural resources, particularly those that are spatially extensive and are relied on by many members to meet their livelihood needs. Therefore, devolving rights in common to natural resources, rather than to individuals, is often more in line with local people's values as well as promises to be a more effective tool to combat poverty.

The process of building strong property rights institutions involves negotiating and defining rights, their underlying procedures, and corresponding responsibilities (including labor and fees). Not only must rights to different resources be considered, but also the type of right. Does a particular right entitle one to have access to, alter, and/or make productive use of the resource? Is transfer or alienation of the resource permitted? Beyond rights to resources, there are also rights to technologies and infrastructure (e.g. irrigation works), membership rights to groups or organizations, and organizational rights that specify what an organization may do as a group. Consideration needs to be given to who has access to these rights, and who is excluded from them.

Negotiation over rights will also have to involve external stakeholders such as governments, service deliverers, neighboring communities, etc. However, governance and decision-making on local resource management should remain the domain of resource users. Care needs to be taken that responsibilities are well-supported by incentives and the promise of benefits from investment. Recognition should also be given to different forums for legitimizing claims. However, where different types of rights are contradictory and cause conflict, efforts may be needed to ensure they are reconciled. Even with extended and participatory negotiations, conflict may be a natural outcome of rights transfers (although devolution may reduce conflict as well). Sustaining good local resource management practice will therefore depend on ensuring local conflict resolution mechanisms have coherent rules and efficient processes, and are governed by authorities that carry legitimacy both with local communities and the formal justice system.

Collective action and organization

In addition to building on indigenous knowledge and local property rights systems, developing viable institutions for devolution relies on capturing the

successful dynamics embodied in existing collective action groups and organizations and learning from their weaknesses. Where local communities must interact extensively with external stakeholders, such as with large-scale irrigation systems, more formal organizations may be warranted. However, informal collective action may suffice where contractual arrangements are unnecessary and most management functions are carried out at the community level.

Whether to convince governments to transfer rights to local users, expand rights, or defend existing rights, advocacy and organizing beyond the community level can substantially enhance the political power of resource users. In some cases, resource users have aligned themselves with or formed civil society organizations. Regional and national federations representing the united interests of a large number of resource users are becoming more widespread (e.g. pastoralist federations in West and Central Africa (see Hassane case study in this volume), irrigated farmers' associations in India and Nepal, watershed associations in Nicaragua and fisheries coalitions in the Philippines). Large scale organizing both enables their voices to be heard and allows them make connections with those in power, thereby opening up the path for political feasibility of devolution. In addition to representing user group interests in policy forums, federations also have the potential to serve as conflict resolution forums between different communities and user groups, enable the cross-fertilization of knowledge and sharing of best practice among their members, and garner public support for localized resource management. Efforts to facilitate the formation of civil society organizations should find ways to make sure they function democratically and are not misused by their leadership, enhance leadership capacity and professionalism, as well as promote the inclusion of less powerful resource users.

Collective advocacy efforts can also be strengthened by engaging the support of local NGOs and donors in the devolution process. Often their involvement is useful in ensuring collective action forums and rights to resources are not taken over by local elites or more vocal interest groups. They can also play a role in bridging the gap between governments and civil society, identifying and assembling stakeholders, and facilitating the institutional development and devolution process. Because of their capacity to offer large sources of financial support, international donors and lenders are often effective at pressuring governments to pay heed to the priorities of civil society. Whereas donors and NGOs may be helpful to the efforts of local resource users in acquiring resource rights, they should not act as a substitute for grassroots capacity building that empowers local people to effectively advocate their own priorities.

Other capacity-building measures

Additional measures recommended by participants to strengthen the local institutional environment to support devolution were:

- extension and training to communities in resource governance,
- provision of external financial support to offset the initial investment costs of devolution. Government subsidies should be contingent on local contributions. Credit facilities are another option and may offer a more long-term mechanism for supporting the financial requirements of local resource management.
- structuring forums to foster information sharing among local communities, and between communities, researchers and policymakers—not only to improve decision-making outcomes, but also to build cohesion and relationships. Technical and management aspect of resources, production and income generation opportunities, and viable frameworks for structuring collective action and property rights systems are just some of the critical information needs that could be addressed by systematized, multi-level information delivery mechanisms.

POLICIES

A holistic approach to devolution is one that closely integrates policy making with institution building. Many aspects of these two processes overlap and need to be developed simultaneously. Even though some research should be undertaken in advance, monitoring and impact evaluation research are fundamental to ensure the devolution process is continuously refined and improved. Effective devolution will emerge from a confluence of research, institutional strengthening, and policymaking.

Policies to enable devolution will not progress far unless there is a willingness to devolve rights to resources. Even if legislators favor devolution and put the rules on the books, if government bureaucrats and administrators do not support them, implementation will be hampered. Recognition of the socioeconomic, cultural and ecological diversity of communities and regions is also essential, whereby people are viewed as a resource and not a nuisance or obstacle to resource preservation.

Property rights

The crux of devolution policy making is transferring property rights to resources to local users and strengthening tenure security—not always through ownership rights, but also devolving access, management, withdrawal and other types of rights. Devolving rights in common to resources that accommodate multiple users may help ensure a more equitable distribution of resource benefits. Specifically, policy makers

need to address allocating rights to women and other marginalized groups. In countries where rangelands and pastoralism support livelihoods, herders tend to be politically marginalized. Their rights may even be weakened by devolution policies that favor agriculturalists, unless conscious efforts are made to highlight their interests and strengthen pastoral organizations and networks.

Ecosystem Perspectives

It is important not to treat resources in isolation, but rather as overlapping and interactive. Rangelands are a typical case where outsiders often tend to consider only the livestock production system, when in fact these resources cater to multiple uses and people occupying rangelands have different levels of dependency on livestock. An integrative approach to devolution policy that recognizes ecosystem interlinkages and seeks to coordinate government treatment of different resource sectors will strengthen how policies are put into practice and reduce the potential for conflict and redundancy on the part of government policies and programs. Policies need to be compatible with the institutions governing resource management in terms of their specificity in response to resource attributes, including scale and ecological dynamics. For example, the case for devolution may be especially compelling when resources are dynamic and unpredictable because more flexible and adaptive management styles are necessary to sustain them. Such management skills come from the experience, knowledge and on-site capabilities of local users.

Reconciling rights and responsibilities

A key flaw underlying failed devolution attempts has been the practice of devolving responsibilities to resources without transferring the necessary rights to give users the authority and motivation to undertake the responsibilities. Policies that turns over resource protection duties to people, but restrict their ability to engage in sustainable production of those resources are destined to flounder and do nothing for improving people's incomes and livelihoods. By transferring rights that are consistent with local institutions and structuring policies that recognize local authorities and forums for staking and enforcing claims, policy makers can expect to generate stronger incentives for people to protect natural resources. At the national level, flexible policies that operate within a broader framework are better equipped to accommodate local realities and institutions. Compatibility (not duplication) between local rights and institutions and formal legal statutes is critical for devolution to function smoothly.

Other policy measures

Specific policies and actions that were advocated by the workshop participants to support devolution included:

- Recognition of people's rights to organize.
- Provision of financial services and facilities to communities (credit, savings, co-financing funds, etc.) to help finance local investment in natural resource management and foster economic diversification.
- Improvements in rural infrastructure that contributes to expanded market opportunities and increased profitability of agriculture and other rural income generating activities.
- Government investment in local management and rehabilitation, particularly in ecological 'hot spots', as well as creation of incentives for private investment.

Restructuring government roles and functions

Policy recommendations also extended to what actions were necessary for governments to undertake in order to be able to deal with the shocks and opportunities emerging from a shift in governance roles.

Transition periods may be smoothed by recruiting knowledgeable experts to advise government agencies on how to restructure their role from one of being owners and principal managers of resources to providers of technical guidance and information support to local users. Also, government bodies may need to take on enforcement functions. These functions need to be clearly defined and the appropriate manpower installed either through retraining existing government staff or recruiting new personnel. Applying principles of subsidiarity will assure that government functions and authority are decentralized to their lowest level of capacity, thereby enhancing responsiveness to local priorities. In some cases there may be a need for a three-way partnership between central government, local government, and user groups (e.g. for enforcement of marine protection areas.) More coordination of government efforts and agencies is needed to reduce overlap, wasting of government resources, contradictions in implementation, and creation of confusion and misunderstandings.

Changes in legislation and the allocation of governance functions also call for modifications to formal judicial systems so as to complement and support community-based justice and enforcement systems. Devolution does not only imply new laws, but also new jurisdictions of authority. Many cases that previously would have been heard and judged by higher courts are likely to fall into the jurisdiction of lower courts that are in a better position to uphold local legislation. Recognition of

community-based conflict resolution forums will enable people to handle disputes more efficiently while providing them with greater assurance that the decisions made by less formal authorities will be sanctioned by the formal system. Where grassroots conflict management devices are weak or non-existent, NGOs may be effective interim arbitrators and help facilitate their formation.

Governments will need to remain as key actors in negotiating transboundary issues and the legal frameworks surrounding transboundary resource allocation between countries. However, these negotiations need to consider local property rights systems and livelihood needs of the poor, as well as involve representative resource user organizations and federations where they exist.

Both the financial and the transaction costs incurred by these governance transitions calls for major investments so that implementation is not only feasible, but also effective. Major donors may be sources of funding to support transition periods and help offset the costs of retraining and redeploying workers. Careful analysis of infrastructure needs and policy instruments is likely to shed light on where transaction costs are incurred in the system and what actions can serve to minimize or eliminate them. Macroeconomic policies should also be reviewed to ensure they are consistent with devolution principles and goals of improving the livelihoods of the poor.

Transparency and accountability in policymaking

How the policymaking process itself is executed also demands attention. It is not enough to call for participation. Transparent procedures need to be put in place that outline how credible representatives from civil society and local government will be identified, how multi-stakeholder negotiations will be composed, and how these dialogues will inform the policy process at all levels of government. The development of comparable impact assessment methods and measurable indicators that are linked to the accountability of different actors are instrumental to improving transparency and the overall performance of devolution.

EXAMPLES AND PRECAUTIONS

The appendix contains a comprehensive set of research and policy recommendations outlined by the working group on irrigation, that address negotiations between government representatives and resource user groups, infrastructure rehabilitation, operations and management, irrigation fees, and irrigation agency roles and responsibilities. This group stressed the importance of secure land rights accompanying rights to water as a key condition for collective action and successful devolution.

Hasty devolution (e.g. in response to fiscal crisis) carries a high risk of shoddy implementation imposed in a top-down fashion. A negotiated participatory process takes time in order to develop human, technical, institutional and administrative capacities. One cannot assume that there are local governing structures and capacities in place. The sudden disappearance of the state as an authority in resource management may leave a power vacuum. In these instances, NGOs often come to fill that vacuum, which may or may not benefit local communities. Injudicious governance transfers may also result in the loss of important natural resource champions in government who take stances favoring the environment against commercial and other interests who may have less regard for sustainable resource management. More thoughtful, planned approaches are able to retain these advocates by shoring up support from civil society organizations.

SEQUENCING

Sequencing is a key element of deliberately and carefully crafted devolution. It is not just important that research, institution building and policy measures are carried out. Their timing is also critical, since certain measures build on the capacity created by others, while other actions yield the most positive impact when they are carried out simultaneously.

The working group on rangelands developed the following sequential framework designed to guide policymakers, researcher and practitioners in structuring a coherent and effective path toward localized governance.

1. Undertake a participatory **diagnosis** to enable understanding of context and ensure collective action/organization and devolution is not being imposed on local communities. This includes the identification of collective action groups and organizations.
2. Promote **organization and advocacy** across user groups and up to a national level, including participation in international forums. A satisfactory means of communication within communities and between the community and the state is needed to broaden intra-community advocacy and cross-fertilization as well as involve the state in the organization process.
3. Redefine the **role of the state** as that which establishes legal and regulatory frameworks integrating user interests and applies subsidiarity principles.
4. Facilitate the development of **conflict resolution mechanisms** and ensure their integration from local to national levels.
5. Articulate **property rights** that complement local conditions and build on existing institutions.
6. Provide **state support** to enable the initiation and sustainability of the devolution process. This support, designed to facilitate local capacity to

undertake new functions and responsibilities, should be temporary and backed by local contributions as well as build in incentives for continued sustainable resource management.

Although this framework broadly tries to anticipate what groundwork will need to precede different steps (e.g. conflict resolution mechanisms are likely to be needed in arbitrating property rights), different processes may emerge depending on the outcomes of the diagnostic phase and what already exists on the ground. Often, it will not be a matter of creating institutions, but rather verifying, strengthening or adapting them. Implementation of devolution process within the government structure will depend a lot on the extent of subsidiarity and what levels are responsible and accountable for different functions. So called 'hot spots' where resource degradation has reached a critical level, conflict over resources is acute, or where there is potentially a high payoff to devolving rights may be deemed priority areas.

CONCLUSIONS

Many developing countries are working toward localized control over natural resource management, despite the challenges and disincentives for devolving control over valuable resources. Although many theories have predicted tragedies of mass resource degradation if resources are placed into the hands of local users, there is now ample empirical evidence that demonstrates not only users' capacity to perform better than the state, but also users' contributions to sustainable resource management.

Property rights and collective action institutions fundamentally shape the outcomes of resource governance. Efficiency benefits derive from collective management of large-scale resources like rangelands, forests, coastal zones and waterways. Group monitoring of resource use can also improve the environmental health of these resources. Nations that are concerned with poverty alleviation and enabling greater self reliance by the poor are more likely to devolve rights in common in an effort to both ensure multiple uses and users are provided access as well as support local livelihood security mechanisms. However, intensified competition to resources in many regions will warrant increased efforts to make sure that marginalized groups are not left out.

The quantity and allocation of rights that are devolved to local users will depend to a considerable extent on resource conditions, local capacity issues, and political realities. Local institutions may lack the capacity or the leverage to manage resources that are very large or cross over critical boundaries. Competition for resources from powerful private sector interests can overwhelm a community's capacity to enforce rules curtailing resource use. Within the group, cohesive social capital arrangements can also reduce incentives to sanction group members. In these cases, partnerships whereby governance is shared with different levels of government may constitute the most effective devolution models. Co-management can also be a means for government to test local management capacity before moving to more far-reaching reforms. Regardless of how comprehensive devolution is, central governments still retain a role in natural resource management via setting and administering policies and standards, upholding legal frameworks and backing local laws, undertaking monitoring and evaluation, and possibly providing a coordination and training role.

Many issues like the value of tenure security as an incentive for sustainable management, the merits of employing local institutions and local knowledge, and the benefits of collective action in achieving productivity, environmental and poverty objectives—cut across resources and regions in their importance to successful devolution. But there are also critical differences that must be accounted for to understand the best institutional options for managing them. Ecological uncertainty

encountered in arid rangelands, dynamic cross boundary resource movements in fisheries, natural resource-technology interlinkages in irrigation, and complex rights structures surrounding tree resources are just some of the myriad issues that differentiate these resource sectors. When the distinctive features of each resource are combined with the social and cultural diversity of regions, it is easy to understand that broad, adaptive frameworks are the most appropriate tools. The previous section outlined numerous recommendations gained from the experience of researchers, development practitioners, and policymakers who occupy natural resource management fields. Although these recommendations offer valuable guidelines for launching a viable devolution process, policymakers and development practitioners will learn the most about how to shape these frameworks by examining their own ecological, social, economic and political circumstances as well as giving voice to the various local interests concerned with natural resources, in particular the rural poor whose livelihoods directly depend on them.

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APPENDIX: RECOMMENDED POLICY RESEARCH AND ACTION FOR DEVOLVING IRRIGATION RIGHTS TO LOCAL WATER USER ASSOCIATIONS

Five types of rights were seen as essential for successful devolution: water rights, land rights, infrastructure rights, membership rights, and organizational rights. Approximate time frames for implementation are given in parentheses.

WATER RIGHTS

1. Identify users and uses at scheme and basin level, and project demand (0-2 years)

Research

- Identify multiple uses, users, and trends (projections)
- Develop replicable methods for identification that specify minimum essential data on uses and users

Policy

- Select representatives from various stakeholders
- Ensure that stakeholders are involved in planning
- Provide legal literacy training where necessary to elevate understanding and fortify the bargaining power of users in negotiating rights

2. Basin-level water balance and analysis of the relationship between water resources and land use practices (2 years)

Research

- Conduct an analysis of basin level water balances and the relationship between tenure arrangements, land use practices and water resources to better match supply to changing demand levels (1-2 years, ongoing)
- Develop spatial models to analyze these relationships and project trends in land use changes and the impacts on water resources

Policy

- Conduct water balances for basin development
- Set allocation below basin's reliable water yield
- Define policy and stakeholder objectives within the basin (1-2 years)

3. Define policy and stakeholder objectives within the basin (1-2 years)
Policy
 - Various stakeholders involved in various meetings (temporary) to derive: 1) principles of allocation, 2) equity of distribution, 3) priorities of distribution, 4) guaranteed minimum levels of access.
 - Identify existing systems of water rights (1-2 years)*Research*
 - Identify and classify different arrangements of water rights and other resource tenure systems
 - Develop methods to identify and classify tenure systems
4. Analyze and discuss the gaps between policy and different tenure/rights systems (< 1 year)
Research
 - Identify complements and contradictions between different rights systems
 - Develop replicable methods (practical planning tools) to facilitate this research process
5. Negotiate and allocate water rights (2 years +)
Policy
 - Provide a forum for resolving differences
 - Establish operating principles for the forum
 - Provide legal rights with fixed terms for allocation

LAND RIGHTS

1. Identify land uses and tenure patterns (1-2 years)
Research
 - Identify different types of land uses within the basin and irrigation scheme
 - Identify parcels within irrigation schemes for fee collection and membership
2. Differences between preferred and current cropping patterns (< 1 year)
Research
 - Conduct an analysis to evaluate the impact of existing and preferred cropping patterns

Policy

- Reform quotas or other constraints on crop choice, particularly those that impede the capacity or incentives for Water Users' Associations (WUAs) to manage the irrigation system

3. Land conversion (1-2 years)

Research

- Evaluate the actual/potential impact of land conversion, land sales and removal of crop and other restrictions on the viability of irrigation systems and the capacity of farmers to finance irrigation

Policy

- Give rights to WUA to regulate the sale of land and water where needed
- Remove unnecessary restrictions that inhibit farmers' income generating capacity

4. Land tenure within the irrigation system (2 years+)

Policy

- Develop policies to clarify land tenure prior to devolution (conflict prevention)
- Resolve conflicts over land tenure within the irrigation system
- Design land tenure arrangements that encourage farmer investment within the WUA

INFRASTRUCTURE RIGHTS

1. System management (1-2 years)

Research

- Identify how operation and management practices are likely to change with devolution and what rights and responsibilities for use of irrigation infrastructure should be transferred
- Analyze existing management and relationships to rights and responsibilities

Policy

- Negotiate options for realignment of rights and responsibilities for devolution

- Assign rights and responsibilities between WUA and others to support management changes

Note: If irrigation infrastructure is fully or partly constructed, WUAs may not have rights to modify or repair the scheme. These rights need to be established. Management transfer is likely to change system needs, so negotiations are necessary for realigning rights.

MEMBERSHIP RIGHTS

1. Users within the irrigation system (1-2 years)

Research

- Identify multiple types of uses and users and their needs for the irrigation system
- Develop methodologies to assess the different types of users/uses and their needs for the irrigation system

Policy

- Establish clear criteria for membership – to be negotiated among all users
- Identify requirements to obtain and retain membership, consistent with devolution policy and interests of the WUA

Note: Identifying multiple uses and users and overlapping claims is highly complex. Communities need to structure organizations that can accommodate many types of users and manage this complexity.

ORGANIZATIONAL RIGHTS

1. Structure and operations (1-2 years)

Research

- Explore options for appropriate structures of WUA and other agencies

Policy

- WUAs to define services it will provide (WUAs to define powers and functions (deliberation process) Functions should complement services)
- Ensure legal standing commensurate with rights and responsibilities of WUA
- WUA members should be able to elect and recall leadership
- Additional services of WUAs to be kept separate to ensure the viability of the core function

- Federating may be important so that representatives are able to defend their members' water rights in national level negotiations (e.g. in the face of competition from urban and industrial water uses), as well as to capture the interests of other less powerful water users (e.g. drinking water, pastoralism, fishing, etc.), which are often undervalued.
2. Enforcement
 - Policy*
 - Develop incentives and sanctions around rights and responsibilities granted to WUAs to enforce sanctions
 - Ensure WUAs have the means to enforce sanctions
 3. Dispute resolution
 - Policy*
 - Develop process for resolving disputes within and beyond WUA: arbitration, penalties, rules/offenses, appeals processes, and a tribunal where necessary
 - Allocate authority to WUAs to arbitrate disputes within their boundaries, to the extent that they have the capacity

Note: Informal WUAs may not be able to manage a complex system. For medium to large scale irrigation systems, federating may be necessary as a means to filter up the voices of farmers to the scheme level.

RECOMMENDATIONS: DIFFERENT STEPS

1. Conduct analysis on strengths/weaknesses of existing user organizations. Depending on the state of knowledge, this can be:
 - research on a sample of organizations,
 - diagnostic analysis,
 - self assessment.
2. Based on the results of the analysis, provide services and information as needed
 - community organization,
 - capacity building of users and/or agency staff,
 - providing information in resource availability,
 - technical matters,
 - organizational issues,
 - rights and responsibilities,

- appropriate mechanisms for conflict resolution.
3. Develop and conduct a consultation process through stakeholder workshops, learning laboratories, media campaigns. Content:
 - Negotiations on actions/responsibilities
 - Ensure decisionmaking is by user groups
 - Agreements on service delivery
 - Counterparting
 - Cost-sharing between user groups and external support
 - Recognition of labor contributions
 4. Develop clear policies on the following:
 - Recognition and negotiation with user groups
 - Role and restructuring of irrigation agency
 - Irrigation fees: reasonable, affordable, negotiable, and transparent
 - Long-term plan for rehabilitation and preventative maintenance
 5. Promote federations of water user groups
 - Catalysts/organizers: WUA leaders, NGOs, government
 - Assign clear roles in the scheme and at the governance level
 - Promote networking and lobbying functions
 - Purpose: conflict resolution among user groups and outsiders; contracting for services, other socio-economic activities, clarifying boundaries, defining water rights; inclusion of other water users and user groups