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The Many Meanings of Collective Action: Lessons on Enhancing Gender Inclusion and Equity in Watershed Management

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ABSTRACT

Collective action in agriculture and natural resource management is all too often perceived of in terms of the mere number of participants, with little consideration given to who participates, why, and the outcomes of inequitable participation. The literature is replete with cases of how uncritical approaches to participation structure positions of privilege vis-à-vis project benefits and the natural resource base. Yet lessons on how to engage with local communities in ways that promote equitable participation of women, the poor and other stakeholders are only now coming to light. This paper focuses on approaches under development under the rubric of the African Highlands Initiative to bring collective action principles to bear on gender-equitable change processes in natural resource management. The paper utilizes a number of case studies to illustrate the relative strengths and weaknesses of different approaches for enhancing gender inclusion and equity throughout the stages of problem diagnosis, planning and monitoring. The analysis suggests that an arbitrary definition of collective action is insufficient for assessing the relative strengths and weaknesses of different approaches, and that method evaluation should consider the different forms that collective action can take. A typology of different forms of collective action is proposed, and then utilized to assess the relative strengths and weaknesses of different approaches for fostering gender inclusion and equity in watershed management.

Keywords: Watershed management, gender, collective action

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THE MANY MEANINGS OF COLLECTIVE ACTION: LESSONS ON ENHANCING GENDER INCLUSION AND EQUITY IN WATERSHED MANAGEMENT

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INTRODUCTION

The role of collective action in natural resource management is gaining attention worldwide. Collective action scholars have looked at the relationship between the role of collective action in enhancing farmer participation and human capital (Coleman 1988; Heinrich 1993; Uphoff and Mijayaratna 2000; Woolock and Narayan 2000); determinants and operational principles of collective action (Ostrom 1990; Pandey and Yadama 1990; Wittapayak and Dearden 1999); and the conditions under which collective action can be a vehicle for enhancing equity in natural resource management (NRM) (Kelly and Breinlinger 1995; Leach et al. 1999; Molyneux 2002). Despite the vast body of literature emerging from these studies, lessons on how to promote equitable collective action in practice receive much less attention due to the emphasis on empirical over action research methods.

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This paper summarizes ongoing experiences in participatory watershed management in the highlands of eastern Africa, in which attempts to forge equitable approaches to participatory watershed management have been treated as both a development challenge and an action research objective. Following a literature review and a methodological overview, a series of case studies are presented to illustrate diverse approaches under development to foster collective action in natural resource management. The strengths and weaknesses of each approach in fostering equitable collective action processes are highlighted in a framework that contrasts two typologies: one emphasizing the diverse forms or "faces" of collective action, and the other the diversity of roles or functions collective action assumes within participatory watershed management. The authors argue that a more nuanced assessment of collective action in watershed management is required, to acknowledge both the diverse social goals that may characterize these processes and the trade-offs inherent in diverse methods.

LITERATURE REVIEW

Collective action in watershed management

It is by now widely recognized that collective action is a fundamental pillar of landscape or watershed-level natural resource management. Different from farm-level management, collective action is required to regulate rights and responsibilities to common property resources and public goods (Gaspart et al. 1998; Gebremedhin et al. 2002; Munk Ravnborg and Ashby 1996; Ostrom 1990; Scott et al. 2001), to manage biophysical processes that do not respect farm boundaries (Munk Ravnborg et al. 2000), to negotiate joint investments and technological innovations for enhanced productivity, and to regulate benefits capture (Meinzen-Dick et al. 2002).

In a recent participatory diagnosis of watershed-level natural resource management problems in highland areas of Ethiopia, Kenya and Tanzania, communities identified five different types of problems (German et al. in press b). These include: a) problems associated with the management of common property resources (water, grazing lands, forest); b) problems of natural resource access and distribution; c) trans-boundary problems between neighboring farms or landscape units, including boundary disputes and negative influences on agricultural productivity; d) declining productivity due to the absence of collective action institutions; and e) livelihood problems that are best addressed through collective than individual action. Each of these classes of problems requires collective action to be effectively addressed. The first requires the strengthening of institutions for common property management, to regulate resource extraction and avoid resource degradation characteristic of open access situations (Ostrom 1990). Issues of natural resource access and distribution require collective decisions on benefits distributions within communities, as well as the reform of operating principles of service organizations so that outside interventions do not further existing inequities. Trans-boundary problems may require negotiations among neighboring landowners, or policy reforms to improve the governance of farm boundaries and biophysical processes that cut across boundaries. The last two problems call for individual resource users to come together to identify how agricultural productivity and livelihoods more generally might benefit from collective over individual action, and to negotiate rules and regulations to govern such innovations.

Collective action in watershed management also involves diverse functions. Given the sheer number of users in watersheds and the tendency for outside interventions to structure positions of privilege vis-à-vis any given resource (Munk Ravnborg and Ashby 1996; Schroeder 1993), mechanisms for *eliciting views* on problems, solutions and progress must be negotiated

and tested. The large number of resource users and the size of the watershed also require that effective and representative structures and mechanisms for *structuring the community interface* be designed to minimize the transaction costs for local and outside actors. Finally, given that natural resource management is an inherently political process (Rocheleau and Edmunds 1997; Schroeder 1993), collective action is needed for the negotiation of benefits from watershed management and related project interventions.

Defining collective action

Collective action is often viewed rather uncritically as synonymous with social structures or formal organizations (see Knox and Meinzen-Dick 2000). In line with many other researchers of collective action processes, our definition emphasizes the actions or functions of collective action. Yet we do not rely on one definition alone; rather, we make explicit diverse definitions of collective action so as to provide a framework for evaluating methods under development for fostering collective action in watershed management.

The first definition is by far the most widely used – namely, collective action as direct actions carried out by groups of people working toward common goals (Lubell et al. 2002; Swallow et al. 2001; Tanner 1995). This may range from two neighboring resource users managing a common boundary to a widespread social movement. From this point forward, this will be called the "social movement" dimension of collective action. The second definition of collective action refers to issues of "representation." Given the sheer number of resource users in watersheds, equal levels of direct participation in decision-making on natural resource management or interaction with outside actors is seldom possible. Mechanisms for effective representation of all watershed users in decision-making and benefits sharing are therefore essential to avoid extreme forms of elite capture of benefits. This form of collective action has

been included in collective action definitions of some authors (Meinzen-Dick et al. 2002), but features little in actual examples. The final concept of collective action to be addressed within this paper is one of "political equality." This dimension has not been addressed explicitly in the collective action literature, but rather tends to fall within the domain of multi-stakeholder negotiations in natural resource management. This dimension of collective action involves acknowledgement of diverse political interests around any given resource or management decision, and their effective integration into more equitable decision-making processes (German et al. in press a; Sultana et al. 2002). Issues of overall representation and stakeholder equity in watershed management have also been addressed in the literature through political ecological case studies illustrating the negative social, political and ecological consequences of failing to establish mechanisms for representative decision-making in development or conservation (Munk Ravnborg and Ashby 1996; Rocheleau and Edmunds 1997; Schroeder 1993).

A final definition of collective action merits mention here due to the tendency to treat it as a separate dimension of collective action in the literature. This definition covers collective regulation on individual action (Meinzen-Dick et al. 2002; Pender and Scherr 2002; Gebremedhin et al. 2002; Scott and Silva-Ochoa 2001). This aspect of collective action tends to be treated separately due to its distinctive linkage to property rights and common property resource governance. In the context of this paper, however, it is considered to be part and parcel of each of the above forms of collective action due to the cross-cutting role of negotiated rules and regulations to all forms of collective action.

One final note merits attention here. Our definition of collective action will inevitably structure how we evaluate watershed management processes and institutions, as well as the relative need for collective action within any given biophysical domain. Disaggregating

collective action into its various dimensions provides a more nuanced approach to evaluating social and biophysical processes within watersheds. Whereas earlier definitions led to presuppositions of those biophysical domains requiring collective action (Knox et al. 2002), for example, a more comprehensive and disaggregated definition of collective action makes no such distinction – as all natural resource management activities require collective action in one or more of its forms or functions.

Program context

This research was conducted under the rubric of the African Highlands Initiative (AHI), an ecoregional program of the CGIAR and ASARECA[6] that is convened by the World Agroforestry Centre. The program's aim is to improve livelihoods and arrest natural resource degradation in the intensively cultivated highlands of East and Central Africa. AHI works in a collaborative mode with interdisciplinary teams of scientists from National Agricultural Research and Extension Systems (NARES) in benchmark sites of eastern Africa where new approaches are field-tested and experiences synthesized regionally.

Since 2002 (Phase 3), AHI has worked to develop a *participatory*, *integrated* NRM approach at landscape/watershed scale. Different from many other watershed management programs focusing primarily on soil and water conservation, AHI is fostering an approach to integrate all components of the production system (crop, livestock, tree, soil) and landscape (encompassing common property resources such as water, communal grazing lands and forests). This requires that trade-offs and synergies between diverse goals be made explicit and managed: income generation with conservation; production of crops, trees and/or livestock; and biomass

[6] CGIAR stands for the Consultative Group for International Agricultural Research; ASARECA is the acronym for the Association for Strengthening Agricultural Research in East and Central Africa.

increases with nutrient and water conservation. It also must acknowledge that natural resource management is *inherently political*, with decisions about which management goals to foster leading to unequal benefits and often favoring some groups at the expense of others. The concept of participation must move beyond numbers of participants in community events to acknowledge these dynamics, and foster greater equity in voices, choices and benefits.

METHODOLOGY

Research sites

Areka benchmark site

The Areka site is located in Wolaita, south-central Ethiopia. The area is a mixed crop-livestock system with a high diversity of staple and cash crops (enset, wheat, maize, barley, sorghum, sweet potato, Irish potato, faba bean, field pea and horticultural crops). Livestock are grazed in a large communal grazing area or in semi-communal fenced plots. Despite the diversity of enterprises characterizing the system, landholdings are extremely small (.74 and .26 hectares on average for high and low wealth categories, respectively) and the area is subject to chronic food deficits.

A participatory watershed diagnosis identified the following NRM problems in the system:

1. Declining water quantity and quality, affecting both humans and livestock
2. Loss of indigenous crop and forage varieties due to drought and extension service
3. Poor soil fertility due to intensive use and erosion
4. Increase in pests and disease for crops and livestock
5. Poor access to and dissemination of new technologies
6. Negative effects of eucalyptus on water and cropland

7. Limited livestock feed
8. Poor natural resource governance, including poor negotiation capacity and weak by-laws
9. Loss of assets through early harvest, capture of benefits by intermediaries and seed consumption
10. Limited diversity and income generation of enterprises (crops, livestock, other)

Key challenges for watershed management in this site include: a) enhancing the productivity and returns from crop, livestock and tree components without further exacerbating system nutrient decline; b) arresting water resource degradation and resource conflicts through more optimal land management practices and improved governance; and c) increasing the viability of agriculture as a pathway to food security.

Ginchi benchmark site

The Ginchi Benchmark Site is located in Western Shewa Zone, Ethiopia. It is a mixed crop-livestock system that is more extensively managed than other sites. The system is very limited in biomass due to extensive outfields almost devoid of tree cover and perennial crops. High-value crops like Irish potato and garlic are grown on fenced homestead plots, while extensive outfield areas are used almost exclusively for barley production. Valley bottoms are used exclusively for livestock grazing. While all land is officially owned by the government, individuals have de facto ownership over all land in the watershed. Yet management is collective in certain spatial and temporal niches. Households own outfield areas on both sides of the catchment, cultivating one side of the catchment and leaving the other side for grazing during the rainy season. The side of the catchment that is left for grazing is done so by all households with contiguous plots, enabling free movement of livestock by those households owning land in the area. Valley bottoms are grazed year-round, with access during the cropping season restricted to those households owning plots of land in these areas. During the dry season, outfields and valley

bottoms are open access resources. This scenario makes systems innovation very challenging, requiring collective action not only among households living within the watershed but involving others who graze their livestock in the area.

The following problems were prioritized by farmers during the watershed diagnosis:

1. Declining water quality and quantity, affecting both humans and livestock
2. Loss of indigenous tree species
3. Loss of soil, seed and fertilizer from excess runoff
4. Low soil fertility
5. Shortage of oxen
6. Lack of improved seed
7. Feed shortage
8. Fuel shortage

The key challenges for watershed management include: a) increasing the production of crops, livestock and trees while ensuring sustainable nutrient management in the system; and b) reversing water resource degradation by fostering positive synergies between trees, soil conservation structures and water in micro-catchments. Furthermore, seasonal open access grazing makes investments in afforestation and soil conservation structures in the outfields challenging, as cattle can easily destroy such investments. Site teams and local leaders have targeted local negotiations on restricting livestock movement in certain areas of the catchment as these investments stabilize, such that outfield investments are slowly scaled out throughout the entire watershed area. The challenge is to convince farmers outside the protected areas to receive livestock from those farmers whose land is protected from livestock, in exchange for less certain future benefits.

Lushoto benchmark site

The Lushoto Benchmark Site is located in the East Usambara Mountains of Tanzania. It is also a mixed crop-livestock system, but the livestock system has decreased in importance relative to the past and to other benchmark sites as population increases and communal grazing areas have become severely restricted. A diverse array of annual and perennial staple and cash crops are found in the system, including maize, beans, tea, coffee and horticultural crops (tomato, onion, cabbage, etc.). The tree component in the system is substantial due to extensive afforestation efforts in recent decades. As the population moves up the steep slopes, cultivation moves into valley bottoms and production becomes more intensive, the following problems have emerged:

1. Decline in water quantity and quality in springs
2. Decline in access to, and poor management of, irrigation water and infrastructure
3. Decline in soil fertility, destruction of crops from uncontrolled runoff from neighboring fields, and burial of fertile valley bottom soils due to hillside erosion
4. Incompatibilities of trees (drying of water, competition with crops)
5. Destruction of neighboring crops through pests, disease, rodents, stray fire and theft
6. Poor natural resource governance, including poor and inequitable by-law enforcement
7. Poor seed quality
8. Decline in livestock productivity, including limited feed, poor manure quality and damage caused by free grazing
9. Land shortage and encroachment

Key challenges for watershed management include: a) minimize the negative and foster positive synergies among components (trees, crops and water; hillside-valley bottom interactions; crop-soil-livestock interactions); and b) improve natural resource governance.

Action research methods

Action research methods are being utilized in AHI to field-test approaches for participation and integration in natural resource management. The action research process may be broken down into an iterative series of steps aimed to enable change, including participatory problem identification, planning, implementation, monitoring and re-planning. It is essentially a process of adaptive management that seeks to understand, through implementation, what works where and why.

In AHI, action research is being used for two purposes: a) at program level, to understand how to improve our own interventions in support of program goals (collective action, equity, integration, sustainability); and b) at community or watershed level, to aid farmers in solving their own NRM problems. An "Action Research Guide" is used to structure the action research process, including planning, implementation, and reflection and change (Box 1). The "data" for action research consist of the outcomes of participatory M&E with beneficiaries and other user groups, and process documentation by program implementers. Empirical research methods can support action research through systematic measurement of the impacts identified by resource users and program implementers.

BOX 1. Action Research Guide for
Program-Level Action Learning and Process Documentation

I. PRIOR TO ANY ACTIVITY / STEP:

Objective: *What is the program trying to achieve through this activity?*

Approach: *What will be done to achieve the objective, and how?* (Steps, Participants, Rationale)

Plan for M&E: *What is going to be observed and documented as you go?*

II. FOLLOWING ANY ACTIVITY / STEP:

Approach: *What did you actually do to achieve the objective?* (Modifications of the approach in practice, Reasons for modifications)

Successes: *What went well, and why?*

Challenges: *What did not go well, and why?*

Findings: *What were farmers' (beneficiaries') suggestions on the way forward? What are your own observations about the process?*

Lessons: *What lessons or insights can be derived from these experiences?* (Insights on the approach; Insights on findings)

III. PRIOR TO ANY FURTHER ACTIVITIES / STEPS:

Recommendations: *What would you do the same and differently next time?*

CASE STUDIES: EFFORTS TO ENHANCE GENDER INCLUSION AND EQUITY

To enhance gender inclusion and equity in watershed management, it is important to move beyond the standard participatory rural appraisal approach emphasizing "community participation" during problem definition. This section presents a series of case studies to illustrate the need to explicitly manage gender and equity when structuring the community

interface, eliciting views (during the stages of problem diagnosis, planning and monitoring), and negotiating benefits from watershed management activities.

Structuring the community interface

Case No. 1: Structuring the interface through watershed "representatives"

Moving from farm to watershed level is challenging not only because the biophysical processes become more complex, but because the social challenges are exponentially greater. One of the key challenges lies in structuring the community interface given the sheer number of resource users and the need to keep transaction costs to a minimum. By far the most popular way of structuring the community interface among AHI partners has been to mobilize a watershed structure consisting of equal numbers of "representatives" by village. This approach has been utilized in both Ginchi and Lushoto sites, which differ significantly in size and number of resource users. In Ginchi, where villages are relatively small, the team started by organizing a watershed committee consisting of one representative per village. The resulting committee consisted of male farmers alone, and the team was later encouraged to include female representatives. This shifted the number of committee members from six to nine. In Lushoto there are also six villages, but villages are further broken down into hamlets given the large number of households per village. Gender considerations were integrated from the outset in Lushoto, with the resulting watershed structure at village level consisting of one male and one female representative per hamlet. Each of these village committees elected two of their members (one male and one female) to represent them at watershed level, generating a watershed committee consisting of equal numbers of men and women. While the facilitators had a crucial role in establishing or overlooking gender equity in watershed structures, these site differences also reflect a higher degree of gender awareness and mainstreaming in Tanzania.

Developing a watershed structure is relatively straightforward. The crucial challenge relates to its function. Four different "functional challenges" of these watershed structures have emerged during the pilot phase in Ginchi and Lushoto. These may be characterized as issues of representation, benefits capture, functionality (Lushoto) and incentives. Issues of representation and benefits capture relate to the degree to which the interests of all watershed residents are equitably considered and balanced in decision-making. Figures 1 and 2 illustrate the difference between ineffective and effective representation on the one hand (left-hand side of Figures 1a and 1b, respectively), and inequitable and equitable benefits capture on the other (right-hand side of figures).

Figure 1a – Illustration of a watershed structure lacking representative processes

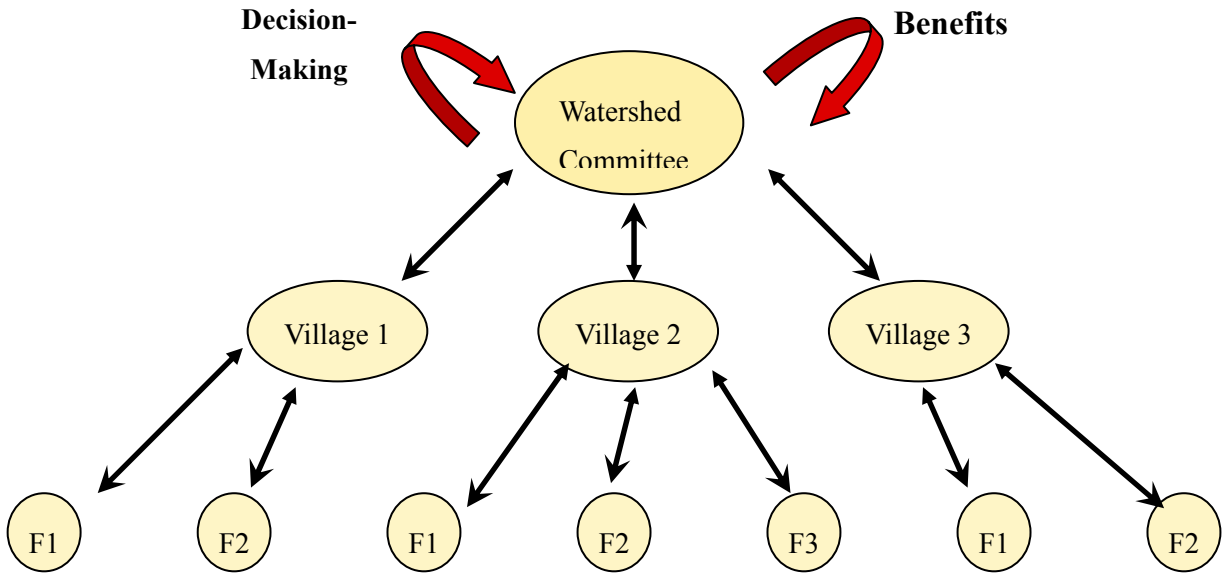
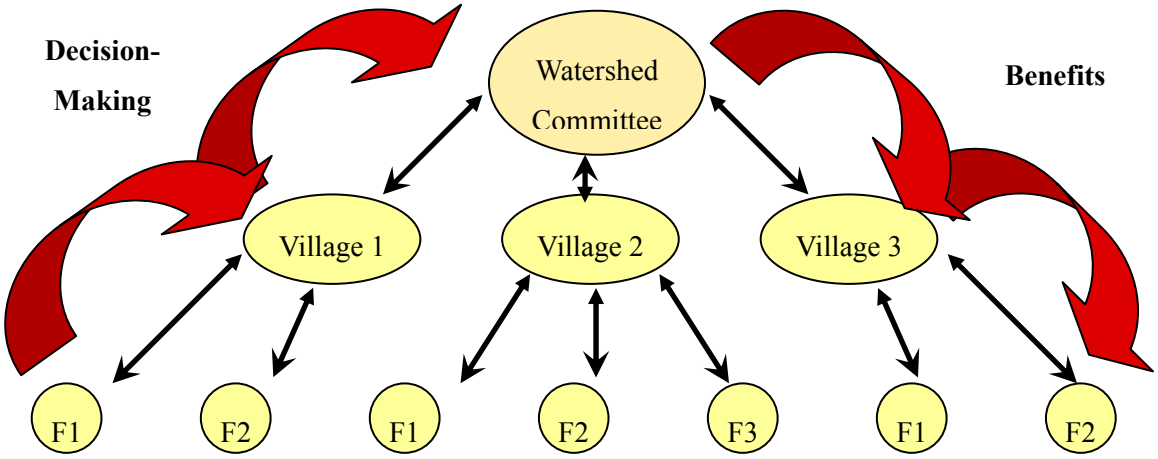


Figure 1b – Illustration of a watershed structure governed by representative processes



One key finding from AHI is that in the absence of clearly negotiated rights and responsibilities of watershed committee members from the outset, the tendency will be for these watershed "representatives" to capture a disproportionate percentage of the benefits. This has been seen in the selection of participants for activities with restricted membership capacity such as cross-site visits and Farmer Research Groups in Ginchi (25 percent and 15 percent female participants, respectively). It has also been seen in activities with unrestricted participation such as watershed policy dialogue in Tanzania, which has been relatively gender balanced in terms of attendance and participation, but has still seen poor participation overall by affected residents. Unequal participation in restricted activities can result either from biased and non-transparent processes of member selection and benefits capture, or from purposive selection criteria that are predominantly technical in nature. As an illustration of the latter, researchers tend to select "early innovators" who can serve as model farmers in the target area and to keep group size to a manageable level (to facilitate trainings and ensure that benefits do not become too diffuse). Yet there are ways to ensure that both technical and equity goals are met, as illustrated in some of the case studies presented below. Unequal participation in activities with unrestricted participation, on the other hand, may stem from lower levels of exposure and awareness of watershed

activities, or from a sense of disenchantment resulting from a perception that benefits from activities of restricted membership are skewed toward other social actors. Strategies for addressing some of these challenges are discussed in greater detail in the sections that follow.

Case No. 2: Stakeholder-Based Interface

The second form of community interface has been one organized around the concept of "stake," or political position vis-à-vis a given activity or outcome. This concept has proven to be very instrumental in involving the parties most appropriate to problem-solving in any given watershed management activity. While in many cases "stake" involves gendered distinctions, in many cases the more salient stakeholders are defined by specific interests with respect to the resource or issue at hand rather than gender per se. This is illustrated by a break-down of key stakeholders surrounding diverse watershed issues in Ginchi Benchmark Site (Table 1). Preliminary experiences with multi-stakeholder negotiations for niche-compatible agroforestry and spring protection illustrate the promise of this approach to problem-solving (German et al., in press a).

Table 1 – Interest groups for key watershed management issues at Ginchi benchmark site

Issue	Local Interest Groups to be Involved in Negotiation [a]
Livestock movement	* Owners of protected (ungrazed) outfield areas, and other farmers who must receive their livestock to graze on their own land (how to ensure benefits to both groups over time)
Spring Protection	* For springs with eucalyptus woodlots: Spring owners and spring users where eucalyptus is grown (to negotiate what the community can contribute to the landowner if the landowner agrees to remove their eucalyptus from the spring)
	* For springs with no trees or conservation structures: Owners of land around springs and spring users (to negotiate management of the catchment area for enhancing water discharge, including what the village will contribute and what the landowner is willing to do
	* Women, men and children, given the division of labor in water collection and fuel wood collection.
Spring Management	* Farmers who contributed to spring construction and farmers who did not contribute but may want to use springs in the future (negotiating use rights relative to maintenance responsibilities so that the interests of both groups are respected, i.e. new users contributing something for what they failed to contribute in labor/materials/money during construction, but making this contribution affordable to them).
Soil Conservation	* Upslope farmers and downslope farmers, given that the former benefit least from soil conservation structures but can damage crops of downslope farmers if they fail to conserve.
	* Conserving farmers and non-conserving farmers, given the need to establish common drainage channels and avoid damaging each other's structures.
	* Farmers with neighboring landholdings (who

	must negotiate the location of common waterways and contributions for gulley stabilization)
Niche-compatible	* Stakeholders involved in niches where current incompatibilities exist, agroforestry including farm, mission and estate boundaries (landowners and affected farmers); springs (landowners and *affected users*); forest margins (the State and neighboring farmers); and roadsides (the State and neighboring farmers). * Nursery managers and watershed residents, to negotiate how individual and collective interests can be balanced (i.e. getting a high economic return from labor invested in nurseries, which would favor some harmful species and limit access to poorer households, vs. niche compatibility and equitable access to trees). * Women and men, whose divergent activity domains structure different needs from trees (i.e. fuel, fodder, income, construction materials, soil fertility) and customary property rights structure differential access to tree products.
Marketing	* All watershed residents (to negotiate common benefits from collective action in marketing so that benefits accrue to all farmers– independent of wealth, gender, or outspokenness)

[a] Local interest groups with an explicit gender component are denoted by italics.

Case No. 3: Linking existing groups exhibiting certain principles

A third method for structuring the community interface has been under development by the African Grassroots Initiative for Livelihood and Environment (AGILE), a project closely affiliated with AHI. AGILE is working with the Landcare concept (Campbell 1994; Mercado et al. 2000) to enable a social movement toward sustainable land use in eastern Africa. Rather than work through prescribed social groupings, AGILE is working to capture existing social energy through strategic support of farmer groups and community-based organizations with prior

interest and success in integrating livelihood goals with environmental conservation. The Landcare approach emphasizes adding value to existing strengths and nodes of innovation in the spheres of technology, institutional capacity (organizational processes, human resources) and policy. Preliminary findings suggest that where local "champions" are found and local ownership is strong, this is a promising approach for sparking localized social movements. The impact of this approach on gender inclusion and equity remains to be seen; however, it is hoped that equity will be enhanced through involvement of greater numbers of land users.

Eliciting views: Problem diagnosis, planning and monitoring

Case No. 4: Community fora – planning through watershed "representatives" in Lushoto site

The challenge of eliciting views of large numbers of resource users in watersheds is substantial. While attention to gender and equity is required at all stages of watershed management, from problem diagnosis to planning to monitoring, it is generally only addressed during planning stages. This problem is likely to stem from the transaction costs of socially-informed and -disaggregated monitoring and follow-up, as well as from conceptual barriers leading people to equate participation with attendance. In several benchmark sites, planning was conducted at watershed level – thereby minimizing the number of participants who could realistically participate. In Lushoto, this problem was addressed by systematic involvement of diverse social groups – namely, village leaders, male and female farmers, and teachers from all watershed villages. Two challenges emerged when eliciting views at "community" level. The first lies in ensuring equal representation of views among those present at the meeting. For gender equity to be ensured, effective group facilitation is essential to minimize the tendency for outspoken farmers to dominate discussions. Culture also has a role to play; in some sites, all groups will readily participate if given an opportunity by the facilitator, in others (namely, Ginchi

site) participation by women is generally grossly inadequate. Dividing into women-only groups within community fora and holding separate meetings to validate female opinion are only partial solutions to this problem; further action research is needed to understand how to engage women more fully in decision-making.

The second challenge lies in ensuring that decision-making among those resource users present in community fora is reflective of broader community views. In the absence of an explicit acknowledgement of the need for broader "community" representation within watershed fora, participants will tend to consider their own interests alone within group deliberations. Within AHI, this problem has been addressed in two ways. First, the "terms of reference" of meeting participants must always be openly acknowledged up front by reminding participants of their role within deliberations – namely, to consider broader community interests in addition to their own. The second way is to structure feedback and validation meetings between the meeting's participants and the broader watershed community. This has been field-tested or is currently planned for village policy dialogue (Lushoto and Ginchi), cross-site visits (Ginchi), and farmer training events (Lushoto). During planning, these feedback events enable not only more widespread participation in and understanding of watershed problems and solutions, but also more detailed planning than what is possible from a single planning event.

Similar challenges are faced in problem diagnosis and monitoring at community level. Attention to "voice" during problem identification and monitoring is fundamental, given the likelihood that the perspectives of certain user groups will be excluded during community fora as a function of low attendance and/or failure to speak out during community events. This problem can be partially addressed by breaking the group down into sub-groups by gender or age, as evidenced in western Kenya where separation of youth from the elders enabled their views on

land tenure to come out much more strongly than had they been grouped together. Some perspectives will nevertheless fail to be captured as people fear repercussions of expressing politically-sensitive ideas openly. This approach also fails to address time constraints that often hinder attendance by women, unless greater time is invested by facilitators to consult women informally during their daily work routines.

Case No. 5: A Priori social categories – socially-disaggregated problem diagnosis in AHI Sites

One way in which AHI has attempted to capture diverse views more systematically has been to divide farmers according to fixed social categories when diagnosing problems, planning or monitoring. During watershed diagnostic activities, for example, resource users were grouped according to gender, wealth, age and – where relevant categories exist – landscape location. The importance of such an approach is illustrated in the relative prioritization given to different watershed problems by different social groups. In Lushoto, for example, while men prioritized insufficient irrigation water (priority number eight for men and 18 for women) women prioritized insufficient access to potable water (priority number two for women and 15 for men). This break-down reflects the division of customary rights and responsibilities in Lushoto, where men tend to control cash crop production and women household activities. Similar differences were seen in the relative priorities given to securing farm boundaries (a greater priority for men, who tend to own farmland), establishing tree nurseries (a greater priority for women, who see it as a viable income-generating activity irrespective of landholdings) and improving infrastructure (a greater priority for men, who generally take responsibility for maintenance of roads and community buildings). While such social disaggregation is more effective in eliciting diverse views, it is less effective in building consensus and common understanding of problems and actions and should therefore not be used in isolation from larger village or watershed fora.

Case No. 6: Constructivist approach – Eliciting views according to 'stake'

A third approach to eliciting views among watershed residents avoids any a priori assumption of the relevant user groups to be consulted, emphasizing instead a constructivist approach to stakeholder identification. The importance of integrating constructivist inquiry into watershed management is best illustrated by the Rio Cabuyal experience in Colombia. In this case, emphasis on a priori social categories (gender, wealth) during problem diagnosis contributed to a failure to recognize a marginalized ethnic group occupying the upper portion of the watershed. This resulted in "natural resource sabotage" as this group fought to re-claim land rights that were being eroded through the project's interventions (Munk Ravnborg and Ashby 1996).

In AHI, we have been working with the concept of constructivist inquiry for stakeholder negotiations as a means of avoiding such pitfalls. When problems diagnosed by one group implicate another user group, as in the case where one farmer expresses problems caused by another farmer, private entity (Mission, Estate) or the State, the second group is then consulted to identify their own views on the problem and their interaction with neighboring farmers. While this approach is still under development, a number of important lessons have been learnt (German et al., in press a). For example, lessons relating to the merits of a constructivist approach to problem and stakeholder identification include the identification of important opportunities for 'win-win' negotiations by equitably capturing diverse interests (and thereby enabling a more balanced dialogue where each party has something to gain). Another lesson is that land management choices may be influenced as much by historical factors and the biases of external institutions as by a strong rationale on behalf of the land user. This creates an opportunity for corrective change emphasizing more optimal land management practices

beneficial to diverse local stakeholders. As a result, many negotiation support events have enabled change through simple face-to-face dialogue.

Negotiating benefits

Equity in benefits capture has been subject to additional scrutiny during action research in AHI benchmark sites. Rather than rely solely on active farmers who are self-advocating in approaching project personnel, we have attempted to negotiate benefits to the watershed at large in several cases. Together, these cases illustrate some general principles on how to bring more widespread benefits to diverse groups by gender, wealth and 'stake.'

Case No. 7: Stakeholder-based negotiations in Lushoto and Ginchi sites

One approach for negotiating benefits has been to identify different stakeholders around prioritized watershed issues, and to engage these stakeholders in negotiations to optimize benefits to each party. One case has received special attention in Lushoto and Ginchi sites, namely multi-stakeholder negotiations for niche-compatible agroforestry. During watershed diagnosis, several problems were found to be directly or indirectly associated with the cultivation of particular tree species in inappropriate niches. Certain trees, when cultivated on farm boundaries and roadsides, or to mark the boundaries of protected areas and community forests, were found to compete with crops of neighboring farmers and to negatively affect soil and soil moisture. Other species, when cultivated around springs, were found to have an overly negative effect on spring discharge or to change the taste of water. Some species were found to create an impenetrable layer of leaf litter and enhance erosion on farms located downslope from woodlots. Finally, problems resulting from deforestation and limited availability of trees on the landscape, including limited access to tree products and soil and water degradation, were prioritized problems in some sites. An approach for enhancing niche compatibility in agroforestry was

clearly needed in the first three cases so as to harmonize interactions among neighboring landscape units or among user groups. In the last case, it was needed to ensure that actions to increase the number of trees on the landscape avoid exacerbating existing incompatibilities.

The approach under development in AHI involves: a) identification of stakeholders by niche; b) discussions with individual stakeholders so as to bring them to the negotiating table; and c) multi-stakeholder negotiations to identify "socially-optimal" solutions. Stakeholders identified for each niche in Lushoto site are summarized in Table 2; negotiations are underway in farm boundaries and springs. These negotiations can lead to nursery management to propagate seedlings targeted for specific niches, implementation of agreed upon management arrangements and/or by-law reforms to govern tree species and management of specific niches.

Table 2 – Niche-specific stakeholders, Lushoto benchmark site, Tanzania

Niche	Stakeholders
1. Farm boundaries	- Owners of boundary trees, neighbouring farmers, missions, churches
2. Forest buffer zone	- Farmers in buffer zone, Ministry of Natural Resources and Tourism
3. Springs	- Individual landowners, water users
4. Within farmland	- Individual household members (by gender, age)
5. Roadsides	- Ministry of Public Works, farmers with land along roadsides

A similar approach for negotiating program and natural resource management benefits can be applied to other watershed themes, as illustrated in Table 1. It is important, however, to ensure that emphasis on resolving more salient or overt conflicts does not undermine effective contributions by both men and women. More targeted negotiation support on the sidelines may be required to effectively capture diverse interests and diverse dimensions of "stake."

Case No. 8: Farmer research group-community negotiations in Ginchi site

The second case of negotiating benefits from program activities involves farmer research groups. While not explicitly related to watershed management, farmer research groups have been utilized as a means to bring tested technologies with high income generating potential into new watershed areas to ensure that farmer interest is maintained by ensuring early returns to farmer investments (balancing activities with short- and long-term pay-offs). When led by researchers or extension agents, membership selection in FRGs tends to be biased toward "active," "model" or "innovative" farmers and the youth, with little attention to how project interventions favor some groups to the exclusion of others. One case from Ginchi benchmark site serves to illustrate this conventional approach and how it may be overcome.

Given the limitations on crop diversification posed by the high altitude at Ginchi site, production of seed potato was seen as one of the most promising strategies for generating income through added value to an existing farm enterprise (ware potato). For this purpose, a single FRG of 26 farmers was organized to multiply a limited amount of seed potato. When establishing the first FRG, little attention was given to membership or sustainability, resulting in disproportionate membership by gender (85 percent male) and village (54 percent from Tiro, one of six villages that the team uses as their contact point with the watershed) and no attention to how benefits will be shared more broadly. This resulted in additional discussions among the site team on how to facilitate a more equitable and explicit approach to benefits capture from income-generating activities. A meeting was called to foster negotiations between the first FRG and other farmers in the watershed. Farmers jointly reached a resolution specifying that the original FRG should not remain with all program benefits. This was operationalized first by specifying equal participation by village, such that each village would have at least one FRG the following season. Second, they determined that benefiting FRGs should have an obligation to multiply and

share what they receive with other farmers. This led to the establishment of by-laws to govern access to the seed potato technology, including a regulation that farmers should return the same amount of seed as they receive at the end of the growing season and pay for the corrugated iron sheets utilized in diffused light stores (in cash or in kind). This would then be used as a loan to a new FRG. The effect of this approach on increasing gender equity has yet to be assessed.

Members of the original FRG were at first disappointed with these negotiations, as they were incorporated after the members had received seed and materials which they already assumed to be given for free and not on loan. This illustrates the need to foster negotiations on benefits sharing prior to initiating watershed activities or introducing technologies. This case study also illustrates how the addition of a single step in community entry can have a profound impact on the distribution of benefits and on sustainability of development efforts. Without an agreement on technology sharing, it is highly likely that benefiting farmers would focus on increasing their seed stock for personal use rather than sharing with others, thereby hindering technology "spillover" and increasing farmer dependence on outside actors.

Case No. 9: Village-level negotiations in Lushoto site

Benefits can also be negotiated at village level. In Tanzania, three activities required such village-level negotiations. The first case emerged during nursery establishment for niche-compatible agroforestry. Given the large size of villages in Tanzania, it was not possible to establish nurseries with all farmers. Furthermore, the program wanted to first learn by focusing on a few nurseries, and later scale up the approach to more villages. Thus at the village level, we negotiated priority hamlets for intervention by establishing criteria and on the basis of those criteria selecting a priority hamlet. Hamlets were generally prioritized according to the presence of critical waterways under threat or whether they supply water to large numbers of people. This

case illustrates how fostering the selection of decision-making criteria based on principles of equity can be utilized to enhance equitable collective action processes. By fostering greater awareness of why benefits are being channeled to particular farmers first, this approach can generate more widespread interest in the nurseries' success. A second case involving selection of priority intervention areas within watershed villages involves integrated catchment management. In this approach, diverse interventions (agroforestry, water conservation and harvesting, livestock, crops, soil conservation) are induced simultaneously to foster positive synergies among system components at catchment level. A similar approach to village-level negotiations for pilot catchment selection is underway. A collective and transparent process of identifying criteria for selecting catchments and evaluating proposals can assist in enhancing equity in this approach.

The third example of village-level negotiations emerged from participatory policy dialogue in Lushoto. Several watershed-level NRM problems had emerged or been exacerbated due to insufficient natural resource governance, resulting in large part from erosion of traditional norms with insufficient application of policies emerging from the modern legal system. This "governance gap" has increased conflict and undermined sustainable natural resource management in the area. We therefore facilitated village-level policy dialogues to discuss whether existing by-laws are well-targeted for addressing identified watershed problems, and whether the problems persist due to ineffective policies or poor policy enforcement. The approach ensured that leaders from each hamlet within the village, as well as equal numbers of male and female farmers, were invited to negotiate by-law reforms. While participating farmers engaged in a very lively discussion and saw the dialogue as a critical need, representation of invited hamlets was poor. Rather than assume that resolutions reached during these meetings

were reflective of the views of all villagers, it was agreed that village or hamlet-level meetings would be held to share and validate or revise provisional policy recommendations. This process is being led by the farmers themselves, with limited assistance in the form of compiling and printing the provisional resolutions and helping the farmers think through the process to be used within the meeting to ensure effective representation of diverse views (by gender and other parameters).

Case No. 10: Negotiating through administrative structures in Areka site

The final case of negotiation of benefits comes from Areka benchmark site in southern Ethiopia. During early focus group discussions aimed at understanding how outside institutions foster or constrain resource access among different types of resource users, a strong bias toward wealthy male farmers among extension workers was identified. One woman went so far as to declare, "in all my years, I have never seen an extension agent working with a woman." Since technology access serves as a foundation for many watershed interventions, and natural resource investments with more delayed or indirect returns must be balanced with short-term economic gains, inequitable technology access has the potential to undermine collective investments in watershed management overall.

To address the gender bias, village meetings were called by asking farmers to invite FRG members and equal numbers of men and women from different wealth levels, to discuss a way forward for enhancing equitable technology access independent of gender and wealth. During these meetings, farmers were divided into two groups by gender and asked to identify: a) technologies they would like to have access to; b) the social units through which technology dissemination should be mediated or governed so that equitable benefits would be ensured; and c) mechanisms for how technologies and associated management practices would be

disseminated. Through these deliberations, it was agreed that by-laws needed to be negotiated at the level of the PA (local government) to support the implementation of resolutions made through information negotiations. This led to subsequent meetings at the PA level involving administrators at different levels, FRG members and non-FRG members, with equal representation by gender, wealth criteria and village. By-laws governing how technologies would be scaled out were formulated, including the social units through which technologies should flow, associated cost, mechanisms for managing access by different groups, sanctions for non-compliance with by-laws and responsibilities for by-law enforcement. The benefits of negotiating benefits sharing through administrative structures include the greater importance given to resolutions and increased lobbying power to ensure outside actors (extension, NGOs, others) comply with established by-laws. Disadvantages remain to be seen, but may include the diluting effect of "voice" stemming from the integration of a variety of norms established at village level into more homogenizing policies at higher levels. They may also include the effect of economic barriers to the technology's effective application once local cultural or external institutional barriers are overcome, requiring that strategies for improved technology targeting based on resource endowments or credit be introduced to complement local by-law reforms. This process will be monitored as it evolves to trouble-shoot, to monitor impact in terms of actual benefits by gender and wealth, and to determine the ultimate success of such an approach in practice.

The many faces of collective action: a framework for assessing gender inclusion and equity in watershed management

Gender inclusion and equity in watershed management require attention to diverse processes and how they structure positions of privilege vis-à-vis the natural resource base and

program benefits. These include strategies for structuring the community interface; for eliciting views during problem definition, planning and monitoring; and for negotiating benefits from technological, organizational and policy innovations.

Collective action has been seen as a potential means of achieving greater equity and voice in natural resource management. In evaluating the effectiveness of diverse approaches for fostering gender inclusion and equity in watershed management, however, it is useful to consider multiple meanings of collective action – as the meaning chosen will structure the evaluation of an approach. Table 3 illustrates how diverse strategies for operationalizing different social processes in watershed management (left-hand column) are evaluated differently according to the chosen meaning of collective action (top row). In structuring the community interface, for example, working through a watershed-level structure has stronger merits only when considering issues of representation and when mechanisms for representative decision-making and benefits-distribution are present. When the interest is in political equity, on the other hand, a stakeholder-based approach is most effective in making explicit the different and often conflicting interests and negotiating a middle ground. When the interest, on the other hand, is to initiate a more widespread movement through which diverse groups engage in social and environmental change, a mechanism for building upon existing nodes of social energy may be most appropriate. Yet as with other approaches to collective action, it should not be assumed that gender inclusion and equity will be automatic outcomes of approaches to catalyze social movements unless accompanied by awareness raising and concrete actions to bring about social inclusion.

Table 3 – A framework for assessing the effectiveness of collective action processes by purpose

Purpose / Process	Representation	Political Equity	Social Movement
Structuring the Community Interface: a) Watershed structure (Case No. 1) b) Stakeholder-based (Case No. 2) c) Linking existing groups exhibiting certain principles (Case No. 3)	Watershed structure (a) can be most effective if processes for representation & benefits distribution are present; stakeholder-based approaches (b) can be effective if covering a large area, but transaction costs are high.	Stakeholder-based approaches (b) are most effective in ensuring that diverse 'stakes' are represented, but transaction costs are high.	Linking groups with existing initiatives (c) so as to reward social energy and innovations are most effective.
Eliciting Views: a) Community fora (Case No. 4) b) A priori social categories (Case No. 5) c) Constructivist inquiry (Case No. 6)	Use of a priori social categories (b) and constructivist inquiry (c) are most effective in ensuring diverse views are captured.	Constructivist inquiry (c) ensures that views are elicited according to existing political interests or 'stakes.'	The dialogue stimulated through community fora (a) are most effective mobilizing around common interests.
Negotiating Benefits: a) Stakeholder-based (Case No. 7) b) FRG-community negotiations (Case No. 8) c) Negotiating through village and administrative structures (Cases No. 9 and 10)	Stakeholder-based and FRG-community negotiations (a, b) are most effective in ensuring benefits accrue to diverse resource users; others can only be effective if awareness-raising, by-laws and monitoring govern the process to enhance equity.	Stakeholder-based processes (a) are most effective in ensuring that the gains to diverse interest groups are balanced to ensure "socially-optimal" outcomes.	Administrative structures and village-based processes (c) can leverage for change due to "critical mass" and political legitimacy, and are therefore able to influence higher-level processes and institutions.

For eliciting views from watershed residents, evaluations of gender inclusion and equity in collective action processes should be similarly disaggregated. While community fora are the most common way to elicit views from "communities" due to the minimal transaction costs involved for project personnel, they are perhaps least suited to ensuring effective representation

due to the tendency of more outspoken groups to dominate discussions. Effective facilitation can minimize this problem, but never fully eliminate it. Eliciting views from targeted groups (either selected a priori or identified through constructivist approaches) can help to overcome this problem. Constructivist inquiry is also best for ensuring that local political interests are effectively captured and integrated into decision-making processes. However, community fora remain one of the strongest means of catalyzing latent social energy and channeling it into problem-solving around identified watershed problems. Ultimately, a combination of approaches may be needed to balance the goals of equity with consensus-building and mobilization.

A disaggregated approach is also needed to assess gender inclusion and equity in collective action processes oriented toward negotiating benefits from land use innovations, resource capture (emanating from within the community or through outside agencies) and policy reforms. Stakeholder-based approaches are emerging as a highly effective mechanism for increasing social responsibility in natural resource management. Stakeholder identification ensures capture of political interests, while face-to-face dialogue among identified stakeholder groups enhances commitment to collective over individual goods and benefits. "Stake" may be defined along the lines of gender or wealth, but is often defined more strongly around the particular biophysical process being managed. In the case of springs for example, while management of water and trees have clear gender and wealth dimensions (women shoulder the burden of water and fuel wood collection, wealthy landowners can more easily forego immediate returns and invest in woodlots), conflicts are often strongest between the owners of land around springs and spring users.

When negotiating benefits from project interventions, openly agreeing on how benefits will be shared through time between the immediate beneficiaries (in this case, FRG members)

and other watershed residents, is essential for enhancing the equity and sustainability of these investments. Gender inclusion and equity should be two pillars of these negotiations; others may be spatially or ethnically defined. Working through village and administrative structures seldom fosters such equity due to the tendency for elite capture. However, some higher-level issues will require negotiations at higher levels and through administrative structures, such as advocating for change with more powerful actors and institutions. If issues of gender and equity can be made explicit in such discussions, then these administrative structures can enable profound change toward greater social inclusion.

CONCLUSIONS

This paper illustrates that collective action in watershed management can have diverse meanings, as well as a diversity of functions. Collective action can be seen as a means of ensuring representation among all watershed residents (irrespective of gender, wealth or 'stake' vis-à-vis the resource), a means of ensuring political equity in watershed processes and outcomes, or as a means of fostering widespread involvement in watershed management activities (a social movement as it were). While gender inclusion and equity are explicit in the first two meanings, in the last of these it is not, as the focus on innovative and charismatic individuals or groups may obscure the voice of less outspoken social actors. Ultimately, with all three meanings of collective action, translating gender inclusion and equity into practice will depend on the social context as well as the skills of the facilitator.

Collective action in watershed management has also been shown to have a diversity of functions. In addition to being a means of structuring the community interface, it may be a vehicle for more widespread consultation (eliciting views) or negotiation of benefits from natural resources

or program benefits. Given this diversity in meaning and function, collective action in watershed management must be evaluated with a clear understanding of the social objectives of watershed management. These social objectives, and the trade-offs inherent in the selection of different methods for structuring collective action, should be made explicit both to project personnel and resource users. This awareness of how watershed management structures positions of privilege vis-à-vis the natural resource base and diverse program benefits is essential to a more socially-informed watershed management process. In the absence of such collective scrutiny of social goals and outcomes during planning, implementation and monitoring, watershed management programs will represent yet another failed development experiment that serves only to exacerbate existing social inequities.

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