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## Watershed Entry: A Socially-Optimal Approach

**The community-level interface is insufficient for capturing and addressing diverse interests of watershed residents.**



*While youth in southern Ethiopia are concerned about limited access to land and unequal inheritance, elders stress negative consequences of land-use change.*



Most agricultural research and development (R&D) programs have emphasized the alleviation of farm-level productivity constraints. Due in part to the limitations of this approach for considering the integration of components and actors at broader levels (catchment, landscape, community), a number of new approaches have emerged to address new dimensions of natural resource management (NRM). “Participatory watershed management,” “integrated NRM” and “collective action in NRM” are but a few. There is currently an imbalance in the strong momentum behind this shift and the paucity of methodological guidelines for operationalizing these new approaches in agricultural R&D. AHI has been working to develop approaches to ground watershed management in local incentives for improved NRM at the landscape level, and integrating the perspectives of multiple actors during the watershed entry phase.

### Participatory Diagnosis of “Watershed” Issues

Use of the term “participatory” in watershed management discourse is a curious one, given how the watershed as a conceptual unit is in large part defined by flows of resources and environmental services to downstream and urban users. The potential discrepancy in the ultimate beneficiaries of watershed management makes it essential that we clearly identify local motives for improved NRM in upper catchment areas. Yet participatory problem diagnosis becomes more challenging as one moves beyond farm-level diagnosis, due to the diversity in “local” perspectives and the collective nature of causes and solutions at larger scales.

Tools for participatory problem diagnosis must enable local identification of constraints at multiple levels (farm, “neighborhoods,” landscapes) and remain free from rigid interpretations of watershed boundaries and processes. In AHI, we found that triangulation of questions is essential in capturing the full range of issues of concern to farmers at each level. Questions should capture, minimally, farm-level productivity constraints, problems arising from the management of common property resources, influences of NRM in one farm or village on neighboring farms/villages, sources of NRM conflict, problems and solutions that could benefit from collective action, negative livelihood impacts resulting from land use or landscape change, and influences of off-farm residence or income on land use. These areas were identified through an iterative research process, in which a number of issues affecting farmers would not have been identified without additional probing and question reformulation. Participatory mapping can also help to identify watershed issues. However, application of such tools must emphasize landscape processes and “hot spots” rather than spatial delineations of feature, and issues lacking a spatial dimension will not be captured through such diagnostic mapping approaches.

Issues identified through this approach include those with clear watershed boundaries, and those without. The former include problems associated with water use, supply and quality (for irrigation, livestock and domestic use); landscape flows of soil and water; and causal relationships between land use and soil/water outcomes. Issues that do not conform to watershed boundaries or processes include collective (higher-order) dimensions of pest, disease, weed and rodent management; trans-boundary impacts of crops and trees (namely, euca-

lyptus); management of communal resources (grazing land, livestock, paths); and issues requiring collective action (marketing, input provision, rotational credit functions, conflict resolution) (see also *AHI Brief C1*). Clearly, a rigid definition of “watershed” would exclude many of these issues from consideration.

## Defining “Local”

Emphasis on the “local community” as a means to operationalize participation has come under scrutiny due to the uncritical assumption that communities are homogeneous entities for which “one size fits all.” Experience has shown that farmers have divergent resource endowments influencing their *ability* to innovate, different priorities influencing their *desire* to innovate in

a strong influence on livelihood is affected by land use practices throughout the watershed yet is unequally accessed (i.e. irrigation water). Here the highly-skewed distribution of costs and benefits is a disincentive to improved management.

## Socially-Optimal Diagnosis and Planning

These differences make a community-level interface (community-level diagnosis & planning, PRA) insufficient for capturing and addressing diverse interests, particularly given the tendency for outspoken or dominant individuals to co-opt “participatory” interactions. AHI has found that a series of three steps is required to ensure that diverse interests are captured: a) focus group discussions with diverse groups (by



Focus group discussions with women in Lushoto, Tanzania.

**Table 1. Results of a Socially-Disaggregated Prioritization of Issues in Two AHI Benchmark Sites**

Watershed Issues	Rank <sup>1</sup> by Social Category	Explanation
<i>Lushoto Benchmark Site, Tanzania (n=28)</i>		
1. Limited availability & individual tenure of potable water	Upslope:Downslope=1:15 Men:Women=15:2 High:Low Income=2:15	Women are responsible for fetching water; water is more available downslope and to wealthier farmers.
2. Limited irrigation water	High:Low Income=21:10 Men:Women=8:18	Cash cropping is male domain; wealth stems from & enables access to water.
3. Boundary encroachment	Men:Women=13:27	Men own most farmland.
4. Need for cooperation in group nurseries	Men:Women=13:2	Source of fuel wood; potential income source irrespective of landholdings.
<i>Ginchi Benchmark Site, Ethiopia (n=18)</i>		
1. Water shortage for livestock & humans	High:Low Income=7:5 Men:Women=9:7	Same as above.
2. Shortage of oxen	Men:Women=10:5	Women bear much of the labor demand.
3. Shortage of land	Elder:Youth=6:4	Youth have limited access to land.

<sup>1</sup>Low values represent issues that are of *highest* priority to the respective social groups. Sample size (n) refers to the total number of issues ranked in each site.

different areas, and different levels of political clout influencing their ability to gain access to resources (institutions, information, natural resources). In watersheds, such differences manifest themselves in a number of ways. Incentives to invest in improved management of any resource will differ according to an individual's: a) primary domains of activity, b) primary constraints on livelihood, and c) levels of access to the resource (benefits). The first of these is clearly seen in gendered domains of activity, where the importance of fuel wood and watering points to women is a clear reflection of traditional roles (Table 1). The second is most apparent among those for whom their lesser social, economic or political status limits access to basic resources (i.e. water). The final issue becomes problematic when a resource that has

gender, age and wealth) to develop a robust list of watershed issues; b) ranking of identified issues with *individuals*, ensuring representation of relevant social parameters (gender, wealth, age, village, landscape position); and c) program- and community-level planning to ensure that diverse interests are clearly addressed in action plans. The latter can be done through a disaggregated planning process, in which diverse groups suggest solutions and define roles, and through a thorough understanding of social dynamics and stakeholders by project personnel. Only this can ensure effective participation of diverse actors at all stages of watershed entry (diagnosis, planning) and implementation.

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