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**Community History and Rural Development: Why Some
Farmers Participate More Readily than Others**

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ABSTRACT

Past explanations of why rural people respond as they do to external development interventions have emphasized the role of key limiting factors or critical characteristics (wealth, education, land tenure, etc.) which are thought to influence peoples' behavior in predictable ways. Efforts to promote tree planting and soil conservation in eight neighboring villages in the Philippines revealed that variation in participation did not reflect clear patterns based on existing household or village characteristics. Instead, specific responses to interventions reflected a complex, but interpretable interaction between existing socio-economic factors and historic trends or events. Characteristics like the degree of local knowledge, security of land tenure and community cohesion affected peoples' participation, in general, but their specific influence was neither predictable nor consistent between and even within individual villages. An appreciation of the specific historic context was often sufficient to explain these variations. The following historic trends and events were found to have important consequences for peoples' participation: migration and settlement history; family & group lineages; history of socio-political organization and conflict; history of physical isolation; labor history; economic-ecological history; environmental history; and past exposure to development agents. The paper concludes with a preliminary checklist of questions intended to assist researchers and development agents to discover relevant and interesting historical information about rural villages.

INTRODUCTION

Explaining why rural smallholders in the tropics respond as they do to external development intervention has been a goal of many studies in recent years. Understandably, efforts of this kind have often sought to develop predictive frameworks and models of human behavior. In most cases, this has involved the identification of critical factors that, if understood, would enable general predictions about the outcome of given forms of intervention across a wide variety of contexts. For example, secure land or resource tenure is now frequently cited as a necessary pre-requisite for enlisting participation in land improvement activities like tree planting (Fortmann, 1985; Raintree, 1987; Amacher *et al.*, 1993; Netting, 1993; but see White and Runge, 1994; Sain and Barreto, 1996). Other works have highlighted the importance of income, marketing and credit (Hyman, 1983; Feder *et al.*, 1985; Godoy, 1992), labor variability (Fortmann and Rocheleau, 1985; Guggenheim and Spears, 1991; Godoy, 1992; Netting, 1993; Thacher *et al.*, 1997), "rational" or economic decision-making (Vayda, 1983; Cadelina, 1985; Feder *et al.*, 1985; Cancian, 1989; Amacher *et al.*, 1993; Netting, 1993; Low, 1994; Arnold, 1995; Current *et al.*, 1995), social organization and institutions (Uphoff, 1986; Cernea, 1989; Ostrom, 1990; Guggenheim and Spears, 1991; White, 1992a, 1992b; Rudel and Horowitz, 1993; Tandler, 1993), and intervention strategies (Korten, 1980; Chambers, 1986; Jones and Wallace, 1986; Falconer, 1987; Chambers, 1994; Scoones and Thompson, 1994).

There is now a wealth of theory and practical experience that continues to contribute to our understanding and appreciation of the factors that influence development intervention. At the same time, however, placing undue emphasis on the identification of so-called key characteristics or critical factors can be misleading. For one, the more certain factors are emphasized, the greater is the likelihood that other factors--perhaps less commonly encountered, but nonetheless important in a particular context--may be overlooked. Furthermore, social and economic characteristics are always embedded in particular historic contexts which may alter their meaning or significance, often in unexpected ways.

This article is an empirical contribution to a growing literature in the social sciences which emphasizes the importance of understanding histories and local socio-ecological contexts as a basis for

explaining present-day patterns of social organization and human behavior (North, 1990; Peluso, 1992; Putnam, 1993; Vayda, 1994; Cornell and Gil-Swedberg, 1995; Taylor and Garcia-Barrios, 1995; Sowell, 1996; Vayda, 1996; Adelman and Morris, 1997; Landes, 1998). Specifically, the article describes and compares the social responses of eight, seemingly similar, neighboring villages in Negros Oriental Province of the Philippines to a development program that promoted tree planting and soil and water conservation (Walters, 1994b; Walters *et al.*, 1994; Walters, 1997). We argue that rural development agents can enrich their understanding and improve their effectiveness by attending to local social and ecological histories.

Hindsight and two years of project experience have proven many of the project staff's initial assumptions about the target villages and predictions based on these assumptions to be inaccurate. This is not surprising given that virtually all rural development projects are problem-ridden. What is surprising, however, is that our subsequent efforts to explain why project interventions were more successful in some villages than in others were not always well aided by the existing literature on the adoption and diffusion of tree planting and other agricultural innovations. This is because much of the variability encountered by this project was explained, not in terms of any one or several static characteristics or factors, but rather by better understanding specific village and peoples' histories. For example, the propensity for villagers to cooperate with program staff and with each other had much to do with their previous encounters with external agents and their prior experience working together in past situations. Similarly, the way in which land tenure security played a role in farmers' decisions to participate in land improvement activities was often made clear only as staff came to understand particular historical patterns or events in individual villages. Land tenure security, in itself, was neither a good, nor consistent predictor of participation in the project.

The first section of this paper briefly describes the general study area and outlines the methods used in this analysis. The next section provides a general historical overview of settlement and land use within the Bais Bay watershed study area. This is followed by a summary of the Bais Bay Basin Program's efforts to promote tree planting and soil-water conservation and an account and explanation of the Program's experience in each of the eight villages. The paper concludes with a synthesis of important

findings and recommendations for incorporating a more historically-sensitive approach to the study and practice of rural development interventions.

STUDY AREA AND RESEARCH METHODS

The eight villages studied were located in the mid and upper reaches of the Bais Bay Basin, a mid-size watershed that drains eastward along the southeastern side of Negros island, in the Central Visayas region of the Philippines (Figure 1). The watershed straddles three local government jurisdictions (two municipalities and one city) although most of the area falls within the City of Bais. The watershed includes about 6,000 ha of fertile lowlands, virtually all of which are held in large private *haciendas* and planted to sugar cane, and about 10,000 ha of mountainous uplands. These lands drain eastward into two shallow and productive coastal bays that are used intensively for fishing and aquaculture (Figure 1; Walters 1995). Most of the uplands have been cleared of natural forest and planted either to sugar cane, coconut or various subsistence crops, especially corn (Table 1). Soil erosion resulting from deforestation, farming and road building is widespread and severe throughout much of the uplands.

The research methods and analysis used in this study involved a combination of ethnographic and historical investigation, and participatory evaluation. Historical information concerning settlement and land use in the watershed was obtained primarily from interviews with long-time residents of the areas in question, as well as through consultations with local government officials. The village case studies were derived in large part through participant observations and interpretations that resulted from the direct experience and interpretations of the four authors, each of whom served as staff on the project between 1991 and 1993. In particular, Cardano and Visitacion lived and worked intermittently in each of the eight villages between 1991 and 1993. In addition to their roles as principal extension agents, they were responsible for gathering historical and socio-economic information on the individual villages and reporting back to Cadelina and Walters on a regular basis regarding their investigations and experience working at each site.

Walters was specifically tasked with undertaking a process documentation and evaluation of the overall project and so kept a detailed diary of events and submitted regular progress reports to the central project administration in Los Banos and in Canada (Walters, 1994b). These reports served subsequently as references for this paper. In addition, Walters engaged in ongoing, informal discussions during the

project with Cardano, Visitacion, Cadelina and other Program staff, and regular staff meetings were held to discuss the progress and problems associated with the project.

Prior to Walters' departure in 1993, he interviewed 30 of the 38 original farmer cooperators from the eight target villages, as well as twelve other residents from these villages, in order to obtain their assessments of the Program and the reasons for its relative success or failure. (The detailed results of this survey are summarized in Walters *et al.*, 1994.) Walters also did semi-structured interviews with each staff member and with the staff as a group in order cross-check facts, synthesize the project experience on a village-by-village basis, and permit individual and collective interpretations as to why the project was more or less successful in each village. Walters then synthesized these findings and applied counter-factual analysis to evaluate the relevance of specific historical events and factors as probable causes of project success or failure (see Fearon, 1990). In so doing, questions are posed as to whether or not the presence of a particular event or factor has influenced the outcome of, in this case, the project intervention. To answer this, a counterfactual question is proposed: "were this factor/event different, might the project outcome have also been different?". In cases where the answer is likely affirmative, then such factors or events can be rightly attributed causal importance.

Finally, the resulting analysis and interpretation was re-examined and confirmed by individual project staff.

HISTORY OF SETTLEMENT, DEFORESTATION AND LAND USE

This section reviews the historical patterns of settlement and land use in the Bais watershed. For this purpose, a distinction between a "north" and a "south" arm of the watershed is made because differences in topography and soils between the two arms have posed very different constraints on road building, settlement and subsequent agricultural development. Each of the arms included four target villages.

The North Arm of the Watershed

According to long-time residents, much of the uplands in Bais prior to the Second World War were still heavily forested. Access was limited to trails and foot-paths and the lands were sparsely settled by subsistence cultivators who grew corn and other vegetables using shifting cultivation, called *kaingin*.

Beginning in the late 1940's and continuing in fits and starts ever since, the local government of Bais has financed road construction up the northern side of the watershed through what are now the villages of Canlumbog, Malai-ba and later Tagpo and Amalao (Figure 1). Initial roads were constructed to facilitate commercial logging, although their expansion and enhancement has continued as part of the local government's long-term efforts to link remote areas to lowland markets and other services, as well as to establish an overland link to the eastern side of Negros island. Road construction hastened further influxes of shifting cultivators to Malai-ba and Tagpo between the late 1950's and early 1970's. Shifting cultivation has since given way to more sedentary agriculture in most areas as natural population growth and continued migration have absorbed remaining accessible lands.

Road construction also had the delayed effect of altering the land ownership and agricultural patterns by linking remote upland areas to the lucrative sugar cane markets in the lowlands. Owners of large sugar cane *haciendas* in the lowlands were the first to exploit this opportunity and several laid claim in the 1960's to virtually all of the lands in the Canlumbog/Malai-ba area, as well as a few scattered parcels further up the watershed in and around the villages of Tagpo and (what later became) Amalao. They planted sugar on the best lands and coconut elsewhere and hired locals to work and manage their farms.

In Canlumbog, in particular, absentee owners engaged in various tenant-laborer arrangements that permitted local farmers to grow corn and other crops on idle lands or amidst coconut groves. Similar arrangements were common in Malai-ba, but during the late 1970's government land reform under Marcos distributed most of the lands around Malai-ba to the local laborer and tenant population. At the time this study was being conducted, many of the lands in the community of Canlumbog were similarly being considered for redistribution under Aquino's Comprehensive Land Reform Program.

The lands around what is now the community of Amalao offer yet a different case history. Here, a lowland elite obtained a lease for about one hundred ha's of public land from the Bureau of Land

Management for raising cattle. This same elite encountered labor conflicts on his lowland *hacienda* in the late 1960's. As part of a strike settlement agreement brokered by the local City government, the upland lease was transferred in small, private lots over to the strikers and their families. The strikers settled there in 1972, establishing the community of Amalao (Figure 1 and see below). These settlers removed most of the remaining forest cover from the area within a few years.

During the 1970's, smallholder farmers throughout the northern watershed began adopting sugar cane as their predominant agricultural crop, citing the opportunity to earn high cash profits as the principal motive. Today, sugar cane is mono-cropped on the majority (>75%) of both large and smallholder lands on the northern watershed (Table 1). Corn, the major staple food, is grown seasonally by many smallholders and tenant farmers on smaller plots. Coconut is also widespread, particularly on the large land holdings. There are virtually no natural forests remaining in the northern arm of the watershed and remarkably little land is devoted to the production of other kinds of fruits and vegetables or livestock.

The South Arm of the Watershed

The history of land use in the uplands of the southern arm of the watershed has differed in important respects from the north. Overall, there is relatively little good-quality agricultural land in the southern watershed. Nonetheless, the lower elevation uplands of the southern watershed were attractive to early settlers because of the geographic proximity of these lands to Bais City proper (Figure 1). For example, informants say that the lands around Banga-banga, the village nearest to town, were deforested and, in places, severely degraded as early as the 1940's.

A few of the better lands further up the watershed around Panala-an and Tina-an were sparsely settled by shifting cultivators before the Second World War. The few suitable lands in Tina-an were mostly claimed by these early settlers and their descendants. A sharp influx of additional migrants to the Panala-an area in the late 1960's/early 1970's combined with natural increase quickly brought local population densities there to levels whereby all suitable agricultural lands were claimed and more settled

forms of agriculture began replacing previous shifting cultivation. Forest cover has remained higher on this side of the watershed because many of the slopes are simply too steep to farm. At the same time, however, considerable erosion and degradation has occurred on steep slopes that have been farmed.

The narrow valley bottom, sizable river and steep surrounding terrain has also precluded the construction of a road up the southern arm of the watershed. This has restricted the development of the area and has limited sugar cane growing to only a few, scattered locations along the lower end of the valley where cane trucks can gain access during low river flow periods. As a result, elites from the lowland have had little interest in acquiring lands here and most of the area has remained under the control of smallholders.

Today, subsistence crops such as corn predominate the landscape around the communities of Panala-an and Tina-an. The Community of Kambalagas, located in the uppermost portion of the south arm of the watershed, was the last area to be settled. This area has the richest soils and retains the greatest proportion of forest cover in the entire watershed (about 20%). These features create conditions that are well suited to growing corn and commercially valuable fruits and vegetables, such as egg plant, garlic, green beans, peppers and bananas. A road recently constructed from the northern side across to Kambalagas (Figure 1) has increased access to lowland markets, although the road is long and bad and high transportation costs have thus far limited the amount of land converted from mixed vegetables and fruit to sugar cane to about one third of the farmed area.

In summary, a view of the overall Bais watershed today reveals a deforested and considerably degraded mountain landscape that is significantly populated and intensively farmed over much of its area. However, this gross perspective hides tremendous local differences that are the historical consequence of varied environmental conditions, social groups and economic forces. Most obvious among these has been the impact of 20km of roads being built up one side, but not the other side of the watershed (Figure 1). Road building has accelerated settlement, altered land tenure patterns and transformed the local agricultural economy of northern villages to one nearly completely dominated by sugar cane. However, as was already briefly outlined and will be further discussed, important differences resulting from historical vagaries exist on a much finer scale: between and within individual villages.

THE BAIS BAY BASIN DEVELOPMENT ACTION PROGRAM: STRATEGIES AND EXPERIENCE

The Bais Bay Basin Development Action Program (DAP) was intended to test and promote strategies for linking environmental conservation with rural development. The Program involved a number of concurrent projects in both the uplands and along the coast of the watershed (Walters, 1994a, 1994b, 1997). The specific environment-development priorities in each case were identified in 1991 at a consultative agro-ecosystem workshop involving a number of university experts and local government/non-government officials and representatives (Walters, 1994b). The upland, watershed restoration component of the Program that is considered in this paper was intended to reduce soil erosion and flooding, and loss of forests and associated biological diversity by (1) reforesting upland riparian habitat with indigenous tree species and (2) promoting the adoption of soil and water conservation techniques among smallholder farmers. These priorities reflected concern about the sustainability of farming systems in the uplands and also a genuine anxiety that the degraded condition of the watershed might eventually result in disastrous flooding as had just occurred on November 4, 1991 in Ormoc, Leyte, whereupon 6000 people were killed as a result of a severe flash flood (Duenas, 1991).

Community participation and local institutional development were considered essential components of this overall strategy. However, the Program's explicit emphasis on ecological restoration and resource management was an important factor in its selecting the watershed--as opposed to particular communities or a municipality--as a key unit for planning and initial project implementation. Ecological linkages at the watershed level--such as severe soil upland erosion leading to coastal sedimentation--were striking in Bais and it was thought that community-level efforts could be made more effective overall by coordinating them at the watershed level (Walters, 1994a).

To achieve watershed-wide impacts, Program staff decided, at least initially, to spread efforts widely using a community leader/farmer trainer approach in which key representatives from a number of communities would be given focused support and training with the expectation that knowledge and action would rapidly spread (through a multiplier effect) from these selected individuals to the wider community

(see Walters, 1994a, 1994b and Walters *et al.*, 1994 for a critical evaluation of this and other strategies used in the Program).

From maps and visual surveys, eight villages were identified as priority targets based on the actual and potential seriousness of deforestation and soil erosion (Figure 1). For each village, Program staff initially solicited the participation of three to six farmer cooperators who had been identified by other village members as respected and capable individuals. These representatives were contracted by the Program to assume initial responsibility for Program activities in their respective villages. The cooperators' tasks included construction and management of seedling nurseries; collection, rearing, planting and caring of indigenous tree seedlings; and participation in soil and water conservation training workshops.

The basis for initial mobilization and technical transfer involved intensive small group and one-to-one training and field support. Extension staff met regularly with cooperators, assisted them in their construction of a seedling nursery, and advised them on techniques for seedling care and planting. Seeds, seedlings, tools and other materials were provided as needed. The village cooperators were paid a small monthly fee for the reforestation work only to defer costs and provide a small added incentive. In consultation with the cooperators, about 10 km of upland riparian habitat were targeted for reforestation.

Once nurseries were up and running, staff shifted emphasis to the promotion of soil and water conservation. This was initiated in each village by a public meeting held in the local elementary school. This meeting was advertised by staff and through the village cooperators and open to all interested residents. The meeting was intended as both a training seminar and community mobilizing event. Discussions about the value of soil conservation and basic instruction on how to apply different techniques were presented in the morning, and this was followed by participatory farm planning exercises and field demonstrations in the afternoon. Interested individuals were then organized into small work groups, traditionally called *alayon*, in order to facilitate participation and save labor in the installation of soil and water conservation infrastructure. Participants were also encouraged to share their experiences with members in their village not present at the meeting and to consider enlisting kin and friends in similar *alayon*.

Alayon work groups became the focus of most subsequent extension training and support. Staff made regular visits to villages and arranged to meet with representatives of *alayon* groups to demonstrate different techniques, including hedgerows, sediment traps, rock walls and drainage canals. In recognition of the importance of imitation in the spread of novel technologies, staff initially focused field trials and training on “model” farms that were subsequently showcased to the wider community and used in cross-farm visits.

In summary, the Program's strategy ensured that each of the eight villages received roughly similar "treatments" during the initial stages. However, experience revealed a wide variety of social responses--many quite unexpected--between different villages and even within the same village. These highly varied and often unpredictable responses prompted staff to adopt intervention strategies that were increasingly tailored to individual villages (Walters *et al.*, 1994). The following section examines our experience working in the eight villages, highlighting the important causal-historical factors that either enhanced or impeded farmer participation, collective action and technical transfer in each village. These experiences are summarized in annotated form in Table 2.

CASE STUDIES OF INDIVIDUAL VILLAGE RESPONSES

Canlumbog Village

When the Program began in late 1991, virtually all of the lands in Canlumbog were held in mid-size plantations (15 - 30 ha) owned by absentee landlords. Local residents worked these plantations as paid laborers and in exchange for the rights to farm small tenant plots of 0.5 ha or less. Shortly after beginning, we learned that there was a great deal of uncertainty about whether ongoing negotiations with the Department of Agrarian Reform would eventually lead to distribution of some or all of this property to local residents. In either case, the village was sharply divided into pro- and anti-land reform factions when the Program began there.

Given the uncertainty over land tenure, existing political divisions, and the residents' relative

inexperience with independent farming, project staff had predicted that residents would not be interested in tree planting or soil-water conservation. Contrary to expectation, however, many residents demonstrated early a keen interest in the Program. The presence of a strong, supportive resident leader who was much respected in the community was an important factor. But, the relative ease at which residents initially mobilized was difficult to explain solely in terms of leadership.

The clue to this pattern of behavior was revealed when staff considered historical labor patterns in the area: most adult residents living in Canlumbog had considerable experience working seasonally as paid laborers on local and nearby, lowland sugar cane haciendas. Specifically, the residents' particular experience working in teams, by contract, and under authority as plantation laborers emerged as an asset for certain Program initiatives. In particular, the contract nursery management and tree planting, with its clear tasks and set payments, was agreeable to many residents because it made intuitive sense to them as experienced contract laborers. Likewise, residents were eager to participate in group activities that involved learning new information and skills. This was also contrary to initial expectation given that farm management represented a relatively small economic priority for most of them. But again, the key social processes involved in the Program's initial learning and mobilization efforts--namely, meeting at set times and locations, taking directions from perceived authority figures, and working in groups--were familiar to them as *hacienda* laborers.

Political divisions, inexperience and uncertainty over land tenure eventually proved problematic, nonetheless. For one, participants were technically unskilled and lacked self-confidence in farm management and so required more instruction and support than Program staff had initially anticipated (or were ultimately able) to provide. Technically complicated tasks like managing the indigenous tree nursery were poorly performed as a result. Also, residents were more eager to learn new farm management skills than they were to apply them in the form of actual land improvements. With few exceptions, participants planted trees and implemented soil & water conservation only within or immediately adjacent their own tenant gardens and homes, which is still significant given they did not own even these lands (although some clearly had hopes that they soon would).

Malai-ba Village

Land reform programs in the 1970's under the Marcos administration broke up several large land holdings in Malai-ba and distributed these in small, private parcels to a relatively small population of resident laborers and tenants. The local topography is steep, however, and intensive farming on these small plots of land has led to severe and widespread soil erosion. This combination of factors--shared history, small population, secure land tenure and severity of environmental deterioration--plus the presence of a strong local leader made it relatively easy to access and mobilize the residents of Malai-ba from the outset. For example, in contrast to a number of the other communities, the cooperators in Malai-ba easily gained the support of landowners and were able to plant trees on most of the targeted areas.

Unfortunately, factors that served as positive attributes in one respect proved detrimental in another. In the case of the tree planting, a conflict was encountered between restoring and protecting degraded lands, on the one hand, and maximizing production from small holdings, on the other. In short, these farmers were accustomed to intensively cultivating all of their lands, including riparian areas. Even though most farmers either permitted or actively participated in tree planting, many of the young trees were eventually crowded out by faster growing sugar cane and other crops. A landslide resulting from road construction along steep slopes also destroyed some of the planted areas.

Existing technical knowledge in Malai-ba was low, as in Canlumbog, and participants required a level of technical support and supervision that staff were not always able to provide. For example, many of the initial seedlings died in the nursery shortly after delivery because the cooperators did not understand how to properly care for them. Likewise, a number of the cooperators and other residents were eager to develop SWC on their farms early on, but these farmers needed more support than the staff were able to provide at that time and this opportunity was largely missed.

Amalao Village

The village of Amalao was literally created by the stroke of a pen in 1972 when the Mayor of Bais City

brokered a settlement between a group of striking *hacienda* workers and their landlords. The workers agreed to end the strike in exchange for each family receiving a plow, a carabaw (draft animal) and 1.0 ha of land in what had previously been a pasture lease on public land. The socio-economic and ecological conditions in Amalao were thus like Malai-ba: a relatively small population of farmers, sharing a common history, and each with precariously small, marginal land holdings.

The residents of Amalao, like those in Malai-ba, were relatively easy to mobilize as a group: more than half of all households participated regularly in meetings and training sessions and *alayon* work groups were effectively employed for soil and water conservation work. Unfortunately, like both Malai-ba and Canlumbog, the farmers were also relatively inexperienced in technical matters and required considerable support which, in this case, they got in the form of regular, live-in visits from one of the Program's staff (Walters, 1994). The added staff attention was doubly important because, in contrast to Malai-ba and Canlumbog, there were no strong, natural leaders in Amalao.

The unusual history of Amalao had nonetheless bestowed upon the village unique problems involving the tenure and condition of the lands. First, in brokering the relocation deal the Bais City government had used national forest lands as its major bargaining chip without formal consent of the national government! The result was that the residents of Amalao were perceived as private landowners by the local government, but they were seen as squatters in the eyes of the national government. The residents of Amalao were very concerned about this, but if anything, this concern about tenure insecurity translated into *greater* interest and levels of participation in the Program, not less, as might otherwise have been expected. The reasons for this response appeared to reflect the residents' belief that since government had a hand in settling them there, their claims were legitimate, even if they were unresolved. Furthermore, the villagers hoped that the Program staff could assist them to resolve the issue with the appropriate government authorities, either by organizing the villagers or speaking on their behalf.

The second problem concerned the poor condition of many of the lands, the direct result of their having been previously used as cattle pasture. Extensive, degraded areas were overrun with cogon grasses (*Imperata cylindrica*) rendering them marginal for farming and practically unavailable for tree planting. This combined with the small productive holdings, placed a premium on usable farm land and

thereby further restricted the areas available for planting trees. Given these conditions, successful tree planting was limited to relatively unproductive lands around homes and some creeks.

Tagpo Village

Tagpo's history is distinctly different from the previous three villages in several crucial respects. Since first settlement the majority of lands in Tagpo were claimed and have since remained in the hands of successive migrations of smallholders, most of whom have established private, undisputed ownership over parcels of land ranging in size from 2 to 6 ha's. Tagpo is located several kilometers from the main mountain road. This relative remoteness probably accounts for the area not having been claimed by elites during the 1950's and 60's, as occurred in and around Canlumbog and Malai-ba. The City helped build a road into Tagpo during the early 1970's, enabling cane trucks to access the area and thus prompting the widespread planting of sugar cane on most of the lands there. However, the road is long, rugged and usually washes out during the wet season. Tagpo thus continues to endure a degree of isolation not experienced by many of the other target villages.

Program staff were initially optimistic about working in Tagpo because many of the apparent ingredients for promoting land improvement were already present, including secure private land tenure and high levels of farming skills amongst the local population. Furthermore, many of the residents of Tagpo were already aware of the environmental dangers associated with excessive deforestation and soil erosion: a few years prior two children were drowned in a flash flood which residents acknowledged had been partly caused by deforestation and soil erosion.

Surprisingly, however, Tagpo turned out to be one of the most complex and difficult villages to work in. Residents were often distrustful of Program staff; group meetings were poorly attended, often in spite of apparent expressions of interest; and sharp political divisions were revealed within the village that initially undermined attempts to generate widespread participation. The Program eventually made progress in Tagpo, but only after many months of frequent visits and dogged determination by Program staff, and appropriate adaptation to local circumstances that included, among other things, establishing

one village tree nursery for each of the two political factions (Walters, 1994b).

One reason for this resistance was that past agricultural extension projects--while raising the level of local knowledge and skills--appear to have instilled a sense of local skepticism about outsiders who came to their village with promises to assist them. However, Program staff agreed that the combined effects of remoteness, a staggered history of settlement, and the independent and dispersed history of farming were also important because they had conditioned a relatively self-sufficient and atomistic attitude among its residents. The contrast with the previous villages was both striking and ironic: whereas the residents of Canlumbog, Malai-ba and Amalao were unskilled, but enthusiastic and cooperative, the farmers of Tagpo were highly experienced, but skeptical and uncooperative.

Kambalagas Village

Kambalagas is the only village that has historically been more isolated than Tagpo. The lands around Kambalagas are designated public forest lands and extend to the summit of the Southern arm of the watershed. Only a few smallholder families had settled the area prior to 1975. Access to and from the lowlands was by a long, sometimes treacherous foot path via the villages of Tina-an and Panala-an. Around 1980 a very long, rough dirt road was punched through to Kambalagas along the upper reaches of the watershed from the main northern mountain road (Figure 1). This was followed by additional settlement to the area and some farmers began to grow sugar cane, although high transportation costs remained prohibitive for many.

The remoteness and recent settlement of Kambalagas meant that the soils were still relatively fertile and substantial areas of land still forested (about 20% of the total area). The forest cover and soils provided micro-environmental conditions unique in the entire watershed and suitable for growing a diversity of high value vegetables and fruits like egg plant, garlic, peppers and banana. It was, therefore, relatively easy for staff to enlist farmer participation in the Program given their vested economic interests in maintaining healthy watershed conditions. Moreover, the farmers' experience propagating a wide variety of plants and managing diverse, multi-crop farms was an asset when it came to reforesting and

applying novel soil conservation techniques. The reforestation component of the Program was more successful in Kambalagas than in any other community and large numbers of residents eagerly participated in soil & water conservation training workshops (Walters *et al.*, 1994).

Staff did, however, encounter difficulties during two stages of the Program. At the outset, residents were extremely cautious of Program staff, fearing that they were associated with the national government and had intentions of evicting the residents. Most of the residents pay taxes to the local government for the lands they farm, but they nonetheless have few illusions about the legal frailty of these claims. Apparently, these fears had been stirred-up by past visits from national forestry officials who had expressed the desire to return the fields back into their intended, original forested condition. Fortunately, several staff had a historical rapport with some of the residents and were able to convince them of our benign intentions.

Kambalagas was politically divided and, overall, had little community cohesion. Like Tagpo, Kambalagas was a relatively young, frontier village populated by residents lacking a shared identity and limited in their collective work experience. As a result, activities that involved substantial shared labor and group work, like building rock walls or digging drainage canals, were slow to get going.

Tina-an Village

Tina-an is a small, relatively isolated village located in a steep valley about 1 km downstream of Kambalagas (Figure 1). The area was initially settled prior to the Second World War and most of its current residents are descendants and extended kin of these first settlers. Road building since the War has opened up historically remoter areas like Kambalagas, but these new roads have bypassed Tina-an completely and the village remains today perhaps the most remote in the entire watershed. All products destined for market must be carried out by hand via a long, sometimes treacherous foot path. For this reason, farmers in Tina-an restrict their efforts to producing crops for local consumption and a few high-valued vegetables and fruits like peppers, egg plant and bananas.

Our experiences in Tagpo and Kambalagas suggested that the effects remoteness and isolation

can have on local people are not always advantageous to external intervention. The Program's experience in remote Tina-an was, nonetheless, almost entirely positive. Like the farmers in Tagpo and Kambalagas, but unlike those in Canlumbog, Malai-ba and Amalao, residents of Tina-an were relatively self-reliant and skilled and so required little direct technical support. One of the residents had even worked in the past for the Department of Environment and Natural Resources (DENR) and served in this project as a resident technical advisor for the tree nursery and reforestation work. His contribution added tremendously to the success of these components of the Program (Walters *et al.*, 1994).

But in contrast to Tagpo and Kambalagas, Tina-an farmers were also easily mobilized and quick to cooperate with Program staff and among themselves. Several factors helped explain this difference. For one, land tenure was not as major a concern as it had been initially in Kambalagas. A few of the residents held legal private titles, but even those who didn't had strong historical claims to their lands--claims which had been re-enforced in recent years by forestry officials coming to their village and allocating formal certificates of land stewardship under the national Integrated Social Forestry Program (Payuan, 1985). Second and equally important, the residents shared a long history of close social contact and self-reliance based to a large degree on close kinship ties and re-enforced by historical physical isolation. In short, individuals appeared to know where they fit in the local social order and the endorsement and leadership of a key few individuals quickly led to the participation of most others.

Panala-an Village

Panala-an is a large village of nearly 200 households spread along 0.5 km of the lower reaches of the southern arm of the Bais watershed (Figure 1). The area is characterized by a wide (50m - 200m), flat valley bottom with steep surrounding valley slopes. While there is no road entering the area, the river bed is passable by truck during the dry season and farmers with suitable arable land often grow sugar cane.

The settlement and land tenure history of Panala-an is complex. Successive waves of settlement and out-migration by smallholders, beginning around the 1920's and continuing until the early 1970's, have been juxtaposed with large claims made by absentee landowners and the subsequent distribution of

some these holdings to smallholders. By 1991 this had resulted in a mixture of mostly small land holdings (2 - 5ha)--some privately titled and others on public forest lands--and a few large, absentee owned parcels with tenants. Certificate of land stewardship agreements have also been provided by the DENR to a number of smallholder public land claimants, thus further re-enforcing the belief that claims on public property in Panala-an are legitimate.

Program staff were not surprised by the absence of overall community cohesion given the large and diverse character of Panala-an. At the same time, however, several strong leaders and a number of technically competent individuals emerged early in the process and subsequently mobilized a sizable contingent of extremely enthusiastic farmers. The steep hillsides and long history of farming had resulted in severe degradation and abandonment of many lands in the area and participating individuals were clearly anxious to prevent this from occurring on their own farms.

The Program made a lot of progress quickly in Panala-an. The village tree nursery was very well managed and two large *alayon* work groups formed and quickly engaged themselves in intensive training and development of soil & water conservation techniques on their farms. The work groups were mostly comprised of a mixture of extended family members and their friends. The rapid formation and effectiveness of these groups demonstrated clearly the value of sometimes by-passing the village as a unit and focusing directly on interested members and sub-groups, with the added hope that intended effects will eventually spread more widely (Cernea, 1989; White, 1992b).

One final point merits mentioning. Flash floods accumulating from the upper reaches of the watershed reach their peak in volume and velocity right around Panala-an. Severe floods result in re-channeling of the river bed and can wash away homes and wipe-out entire fields of crops that have been planted on the fertile valley bottom. Historical experience with such floods has left a strong impression on many residents. On the positive side, residents needed little convincing about the importance of soil and water conservation and reforestation. On the negative side, the threat of floods gave them little incentive to invest in land improvement near the river, the intended initial target of the reforestation. Eager program staff encouraged them to plant trees near the river anyway. Unfortunately, the villagers experience proved accurate: a flash flood wiped-out hundreds of planted seedlings within weeks after the

first major planting!

Banga-banga Village

Banga-banga is a small community located on the steep upper slopes of the southern most edge of the Bais watershed. Like Panala-an and Tina-an, Banga-banga was first settled by smallholders before the War. Lowland elites have had no historic interest in the area because of the poor access, which has always been limited to long, steep foot trails. As of 1991, most of the land holdings were small, private titled or tax-declared on public timberlands. There appears to be no anxiety about tenure security.

Banga-banga was the most complicated village to work with. The Program was directly opposed from the outset by local political leaders because staff failed to consult the local barangay captain--the senior, locally-elected official--when they first entered the area and this led to speculation that we were affiliated with the New People's Army (NPA), the militant wing of the Philippine Communist Party. Such speculation, we discovered, was founded on experience. The NPA had been active in the area a few years prior and experts from the same university that we represented had previously been in consort with them. However well founded the accusation, the result was dramatic: farmers who initially agreed to participate were pressured to not cooperate with program staff at all. Once again, ignorance of the particular historical context of an area carried a price: it took six months of negotiating with local politicians and farmers for the Program to recover from this initial setback.

In the meantime, one particularly entrepreneurial farmer came forward and offered to assume leadership for the Program in Banga-banga. This farmer was technically knowledgeable and highly motivated. His family held fairly sizable holdings (about 15 ha's combined), although as with much of the area, his lands were steep and had been farmed for so long that they were almost completely exhausted. He saw the Program as primarily providing an opportunity for him to add value to his degraded property by planting trees and restoring soil quality. Unfortunately, it became clear with time that his motives were also political (he was a direct challenger to the barangay captain) and his

management style monopolistic (he made little effort to work with others and sought to capture the Program for his own family's benefit).

Program staff eventually enlarged the reach of the Program in Banga-banga and had begun SWC workshops with a number of farmers shortly before the senior author of this article departed. Nonetheless, Banga-banga stands out as a stark example of the unpredictability of social responses in the absence of understanding about a people's particular local history.

DISCUSSION

A number of prominent social scientists have demonstrated that historical experience significantly affects the subsequent behavior of individuals and institutions and, in turn, constrains the range of possibilities available for intervention (North, 1990; Peluso, 1992; Putnam, 1993; Landes, 1998). Tandler (1989), for example, argues that interventions for poverty alleviation were more likely to succeed when based on an intimate understanding of historic, situational constraints and opportunities afforded by the case at hand. Similarly, Biggs (1995) found that successful programs in farming systems research (FSR) had been crafted by practitioners to suit local institutional and situational contexts. Hirschman (1984) likewise illustrates that efforts to mobilize collective action were far more likely to succeed where local people had prior experience working collectively (i.e. had a greater reservoir of "social capital"), even in cases where their prior experience was long past and had been directed towards very different objectives (see also Putnam, 1993; Cornell and Gil-Swedberg, 1995). Anthropologists have also found that individuals and groups maintain varying amounts of accumulated technical knowledge that are drawn upon under certain conditions, but otherwise remain dormant in their regular, day-to-day practices--and thus unapparent to outsiders (e.g. Colson, 1979, 1984).

The analysis of eight village responses in Bais provided numerous examples of how variable histories--resulting from the timing and origin of migration and settlement, changes in land use and economic production, evolving social and political allegiances and conflicts, and past experiences with development agents--can have profound consequences for subsequent technological adoption decisions and performance by smallholders. In the final sections of this paper, we synthesize some of the more pertinent experiences to illustrate the causal relationship between past and present in Bais. The paper concludes with a discussion of some of the methodological considerations arising from these findings.

Historic Trends with Present-day Consequences

Project staff were initially unaware of the prior extent of pertinent technical experience that existed in the villages. Since the majority of smallholders devoted most of their efforts to farming sugar cane and/or maize, it was generally assumed, for example, that few farmers had experience planting and husbanding indigenous tree species like the ones being used for reforestation in the project. This turned out to be largely the case in villages composed of former *hacienda* laborers. Later interviews with farmers revealed, nonetheless, that most farmers in all villages (35 of the 37 total interviewed) had at least some previous experience planting trees of some kind. More importantly, one-third of these farmers (n = 13) had prior experience planting the same kinds of indigenous hardwood species being used in this project (Walters *et al.* 1994). Inattention to the full extent and variability of farmers' prior tree husbandry experience reflected, in part, the near total absence of hardwoods growing in and around most of the villages. That farming and resource use patterns had changed dramatically in recent history--the widespread adoption of sugar mono-cultures by smallholders was a relatively recent phenomenon in many areas--was not initially considered. In either case, our initial ignorance led us to make inaccurate assessments of the needs of different groups for technical support from project staff. Dove (1992) observed similar inattention to local knowledge of tree husbandry by forestry extension agents in Pakistan.

Variability in the patterns of land tenure and perceptions of tenure security were also inextricably linked to historical context and experience. The idea that secure land tenure is an important pre-requisite for smallholder participation in land improvement has attained an almost lawlike status in rural development, although several recent studies provide evidence to the contrary (e.g. White, 1992b; Sain and Baretto, 1996). For example, White and Runge (1994:30) found that, among Haitian smallholders, "short-term and insecure land tenure arrangements did not hinder either the installation of soil conservation practices or individual choices to participate in" watershed management activities. Land tenure was an important factor in the Bais Program, but the particular relationship between land tenure security and participation was not always clear, nor consistent. This, in part, reflected the wide diversity

of land tenure arrangements (Table 1). It reflected also a variation in the specific meaning of apparently similar types of tenure. For example, it was difficult to generalize about smallholders' perceptions of the validity of their own claims to public timber lands because these perceptions varied depending on, among other things, how long they had occupied their respective land and whether or not previous experiences with government officials had led them to believe that their claims were legitimate. Where public lands had been settled and claimed for longer periods, as in Tina-an, Panala-an and Banga-banga, residents demonstrated less concern about tenure security and this appeared, in general, to foster their participation (but see below). By contrast, many of the smallholders in Amalao and Kambalagas were anxious about their more recent claims.

Complicating the matter of tenure even further was the finding that active participation in land improvement activities was not necessarily precluded in cases where serious anxieties concerning tenure security still existed. For example, participation by residents of Amalao and Kambalagas was forthcoming once it was made clear to residents that the Program did not pose a direct threat to their uncertain claims. And in the case of Amalao, the desire to resolve concerns over land tenure security actually served as an incentive to participate in the project. The relatively poor participation by residents in Tagpo, where most farmers have private holdings, further highlights the complexity of the land tenure issue.

The notion of "community cohesiveness" serves as a third illustration of the problematic nature of predicting village responses based only on current characteristics. Community cohesiveness is widely assumed to be an asset to participation, especially when development interventions involve local collective work or knowledge sharing. The degree and kind of community cohesiveness in Bais varied for historical reasons from village to village and this had important consequences for our efforts to mobilize the respective villages.

Studies have shown, for example, that patterns of forest clearing and settlement in frontier areas are not random, but commonly reflect coordinated efforts between extended family members and other networks and groups (e.g. Vayda and Sahur, 1985; Rudel and Horowitz, 1993). The establishment of Tina-an reflected such a pattern: the entire village is a cohesive unit based on a dense network of extended

family relationships maintained by several decades of relative physical isolation. The consequence of this was that Tina-an residents were both easy to mobilize and required minimal technical support once they got started. By contrast, the settlement patterns in Panala-an and Kambalagas were complex and highly staggered in time resulting in varied and sub-divided social identities. This clearly limited the ability of Project staff to generate village-wide cooperation, but the successful efforts in these two villages illustrate that sub-village groups based on extended family and friends can also be effective units of cohesive social action (Cernea, 1989; White, 1992b; White and Runge, 1994). In either case, the evidence from Bais would suggest that historical experience and continuity among members of a smallholder group, be they representative of entire villages or sub-units thereof, are common features of effectively cooperating social units (Axelrod, 1984; Ostrom, 1990).

Prior collective work or organizational experience may also foster community cohesion and promote subsequent collective action (Hirschman, 1984). In Maissade, Haiti, for example, participation in collective watershed management efforts was strongly correlated with membership in *groupman* farmer organizations (White and Runge, 1994). Similarly in Bais, the cohesiveness of residents in each of Canlumbog, Malai-ba and Amalao reflected their respective histories working together as cane cutters and other laborers on large sugar *haciendas*. Such group work experience meant that residents in these communities were more easily mobilized into *alayon* work groups under the project. Not surprisingly, however, work as *hacienda* laborers did not instill many leadership or technical skills and thus, in contrast with Tina-an, these villages required considerably more leadership guidance and technical support from Project staff.

Historic Events with Present-day Consequences

Relatively isolated events can also have profound and lasting influences, particularly on peoples' perceptions. For example, experience with calamitous events--most notably flash floods--raised the awareness among members of several villages about the possible consequences of environmental degradation and thus the value of addressing this problem. Villagers observations of flood waters also

gave them insights about the relative suitability of different sites for planting trees.

The significance of historical events is, nonetheless, particularly well illustrated by considering the historical experience of local villagers with external development agents. The eight villages varied in their prior encounters with government and non-government extension workers and officials. In most cases, such encounters were presumably of little consequence: government officials and extension agents frequently made trips into the mountains (especially around election time) for a variety of reasons and residents rarely made mention of these visits. There were, however, a number of instances whereby prior visits/experience with outsiders profoundly influenced locals' subsequent interaction with our own staff (Walters, 1994b, 1997). The most striking example of this was the suspicion and opposition encountered in Banga-banga as a result of the community's prior negative experience with members of the New Peoples' Army. Similarly, residents in Kambalagas were wary of outsiders who spoke of reforestation because of prior encounters with DENR officials who had suggested the villagers could be evicted from their lands for that purpose.

Seriously negative encounters such as these were probably the exception, however, rather than the rule. For example, in Tina-an and Panala-an, our Program benefitted from prior visits by DENR officials who had provided social forestry tenure contracts and limited technical training in farm management. Similarly, Thacher *et al.* (1997) found that Costa Rican farmers who had prior interactions with government extension agents were more likely to participate in recent tree planting programs. In Bais, it was not uncommon to encounter expressions of confidence from smallholders who had benefitted from previous City-sponsored water, road building or other projects, especially when it became apparent to them that our project was strongly backed by the Mayor (Walters *et al.*, 1994).

Methodological Issues

Studies of farmer responses to development interventions have relied largely on de-contextualized modeling of farmer decision-making and point-in-time surveys of farmer characteristics (Feder *et al.*, 1985). These approaches are important, but their utility is often compromised by their inability to

accurately represent the complexity of the phenomenon under study and to account for the fluid and contingent forces influencing farmer behavior and decision-making in particular socio-economic and environmental contexts (Barlett, 1980). “Farming systems research” (FSR) (e.g. Shaner *et al.*, 1982; Hildebrand, 1986; Jones and Wallace, 1986; Jones and Street, 1990) and related “farmer-first” (FF) approaches (e.g. Chambers *et al.*, 1989; Scoones and Thompson, 1994) overcome many of the problems associated with economic models and longitudinal survey techniques, but FSR and FF approaches also tend to neglect consideration of history in their methods of inquiry (for exceptions, see Box, 1989; Cornwall *et al.*, 1994). In fact, with its explicit emphasis on elucidating system characteristics and identifying regionally homogeneous systems (Hildebrand, 1986b; Jones and Wallace, 1986b), FSR, in particular, is arguably a-historical in its conceptual and methodological orientation.

We argue that an understanding of smallholder responses to external development interventions in the present can be significantly improved if closer attention is paid to local histories and their possible present consequences. This will entail, not an abandonment of existing theory and research tools, but a redirecting of emphasis to incorporate explicit historical analysis (North, 1990). This section considers how such a redirection might be partly achieved by considering how researchers can better learn about rural people and how extension agents can better prepare to perform interventions with them.

Detailed case studies and arguments for the use of causal-historical analysis as it applies to smallholder settlement and forest use can be found in Rudel (1995), Rudel and Horowitz (1993), Vayda (1983 and 1996), and Vayda and Sahur (1985). These particular studies are less concerned with immediate development intervention, but they illustrate well the value of detailed, comparative case history studies and their potential utility in land use policy and planning. Similarly, it might be instructive to do more comparative studies in the hopes of revealing some general historical patterns of smallholder responses to intervention (eg. Netting, 1993). For example, this study suggests that in Bais the origin of migrants and their time since settlement may influence their willingness or ability to cooperate with outsiders and among themselves. This observation raises interesting questions for the wider Philippines where upland smallholders are of such diverse and often recent migratory origin (Cruz *et al.*, 1986).

Box (1989) and Cornwall *et al.* (1994) illustrate how historical analysis can be used to enrich FSR and FF approaches. These authors note that the application of more progressive and participatory methods does not, in itself, guarantee success in researcher-farmer or extension-farmer collaborations if development agents fail to ask the right questions. Both authors recognize that questions about peoples' particular histories are too often not asked.

In more directly applied contexts, as was the case in Bais, there is a demand for immediate, highly specific and relevant information about smallholders living in specific target villages. In such cases, extension agents are lucky if they can invest more than a few days intensively investigating local conditions. Fortunately, our own experience suggests that rural residents often enjoy recounting the past and it is not difficult to elucidate a great deal of potentially relevant historical information on things like migration and settlement, historical agricultural and land use activities, prior encounters with extension agents, socio-political rivalries and so on.

Much has been written recently on methods for learning rapidly about smallholders and other rural people (Chambers, 1994; Mikkelsen, 1994). However, rapid assessment methodologies, including rapid and participatory rural appraisal and agro-ecosystem analysis, are rarely explicit about the value of investigating local history, though it would seem that a variety of the methods and tools available to rapid assessment users--including causal analysis and key informant/group interviews--are potentially well suited for historical investigations (e.g. Cornwall *et al.*, 1994). Migration and settlement patterns, for example, may be obtained by interviewing older residents. Likewise, group discussions can elicit and provide consensus about important historical events or experiences. A preliminary checklist of questions that may assist development agents in their assessment of villages is present in Table 3. This list is intended as a preliminary guide to facilitate more in-depth historical inquiry.

This having been said, no amount of historical inquiry is going to provide development agents and rural communities with absolute predictive certainty (Cronon, 1993). The historical factors or events that proved critical for the Bais Program were often revealed as surprises as the project unfolded. This was, in part, a result of staff not giving adequate attention to historical factors at the outset. Nonetheless,

we are confident that many of the surprise encountered would not have been predicted, even if we had taken the extra time early on to investigate past events and histories. For that matter, we are still unable to explain many of these surprises, even with the aid of hindsight!

What was so striking about the villages and people living in Bais was the profound variation in histories that existed within such a small and *apparently* homogeneous area (see also Beebe, 1994). Staff learned to appreciate this variability and its consequences by doing development work with these communities: that is, we learned by doing (Ison *et al.*, 1997; Korten, 1980). Our relative success in each village depended on our ability to adapt to local situations and this led us to abandon a relatively inflexible development plan in favor of a much more successful village-(or sub-village-)specific strategy. In this respect, our experiences in Bais and the arguments presented in this paper agree with the need for a more flexible, adaptive approach to rural development (Korten, 1980; Payuan, 1985; Chambers, 1986; Falconer, 1987; Box, 1989; Cernea, 1989; Ison *et al.*, 1997; Scoones and Thompson, 1994).

Involving intended beneficiaries in project design and implementation is one way of bringing knowledge of past development experience to bear on the new effort. The local people will know what, if anything, has been tried before and what, if anything, worked. There seems almost a compulsion within development agencies to confirm the saying that "history repeats itself." Indeed, when projects "reinvent the wheel" they usually end up in square one with a plan which has already failed. -- Norman Uphoff (1991:494)

Attention to history is increasingly important because rural areas, like their urban counterparts, are undergoing rapid and continuous change throughout much of the tropical world (Colson, 1984; Brown *et al.*, 1990; Vayda, 1994; Taylor and Garcia-Barrios, 1995). The Philippines, for example, has experienced massive migrations to, from, and within rural areas, and dramatic and varied changes in land use during the past few decades (Cruz *et al.*, 1986; Bautista, 1990; Kummer, 1991; Kummer *et al.*, 1994; Myers, 1988). Economic and social relationships in rural areas are always evolving, but such changes are increasingly driven by external forces and are, therefore, all the more abrupt and unpredictable (Balisacan, 1992; Montes and Lim, 1996). Historical investigations can contribute to an understanding of this flux and thus better inform development agents about possible opportunities or constraints afforded by their intervention.

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REFERENCES

- Adelman, I. and Morris, C.T. (1997) Editorial: development history and its implications for development theory. *World Development* 25, 831-840.
- Amacher, G.S., Hyde, W.F. and Mohammed, R. (1993) Local adoption of new forestry technologies: an example from Pakistan's northwest frontier province. *World Development* 21, 445-453.
- Arnold, J.E.M. (1995) Framing the issues. In *Tree Management in Farmer Strategies: Responses to Agricultural Intensification*, ed. J.E.M. Arnold and P.A. Dewees, pp. 3-17. Oxford: New York.
- Axelrod, R. (1984) *The Evolution of Cooperation*. Basic Books: New York.
- Balisacan, A.M. (1992) Rural poverty in the Philippines: incidence, determinants and policies. *Asian Development Review* 10, 125-163.
- Barlett, P. F. (1980) Adaptive strategies in peasant agricultural production. *Annual Review of Anthropology* 9, 545-573.
- Bautista, G.M. (1990) The forestry crisis in the Philippines: nature, causes and issues. *The Developing Economies* 28(1), 67-94.
- Beebe, J. (1994) The concept of the average farmer and putting the farmer first. *Journal of Farming Systems Research-Extension* 4, 1-16.
- Biggs, S.D. (1995) Farming systems research and rural poverty: relationships between context and content. *Agricultural Systems* 47, 161-174.
- Box, L. (1989) Virgilio's theorem: a method for adaptive agricultural research. In *Farmer First: Farmer Innovation and Agricultural Research*, ed. R. Chambers, A. Pacey and L.A. Thrupp, pp. 61-67. Intermediate Technology Publications: London.
- Brown, P., Brookfield, H. and Gran, R. (1990) Land tenure and transfer in Chimbu, Papua New Guinea: 1958-1984--a study of continuity and change, accommodation and opportunism. *Human Ecology* 18, 21-49.
- Cadelina, R.V. (1985) Social forestry program prospects and implications on the community and household levels. In *Proceedings of the First Asian Forestry Congress (Book III)*, pp. 770-781. ASEAN: Manila.

- Cancian, F. (1989) Economic behavior in peasant communities. In *Economic Anthropology*, ed. S. Plattner, pp. 127-170. Stanford University Press: Stanford.
- Cernea, M. (1989) User groups as producers in participatory afforestation strategies. *World Bank Discussion Papers*, No. 70. The World Bank: Washington, D.C.
- Chambers, R. (1986) Normal professionalism, new paradigms and development. *IDS Discussion Paper* vol. 227. University of Sussex: Sussex, U.K.
- Chambers, R. (1994) The origins and practice of participatory rural appraisal. *World Development* 22, 953-969.
- Chambers, R., Pacey, A. and Thrupp, L.A. (1989) *Farmer First: Farmer Innovation and Agricultural Research*. Intermediate Technology Publications: London.
- Colson, E. (1979) In good years and in bad: food strategies for self-reliant societies. *Journal of Anthropological Research* 35, 18-29.
- Colson, E. (1984) The reordering of experience: anthropological involvement with time. *Journal of Anthropological Research* 40, 1-13.
- Cornell, S. and Gil-Swedberg, M.C. (1995) Sociohistorical factors in institutional efficacy: economic development in three American Indian cases. *Economic Development and Cultural Change* 43, 239-268.
- Cornwall, A., Guijt, I. and Welbourn, A. (1994) Acknowledging process: methodological challenges for agricultural research and extension. In *Beyond Farmer First*, ed. I. Scoones and J. Thompson, pp. 98-117. Intermediate Technology Publications: London.
- Cronon, W. (1993) The uses of environmental history. *Environmental History Review* 17, 1-22.
- Cruz, M.C.J., Zosa-Feranil, I. and Goce, C. (1986) Population pressure and migration: implications for upland development in the Philippines. *Philippine Institute for Development Studies and Centre for Policy and Development Studies Working Paper*, No. 86-06.
- Current, D., Lutz, E., Scherr, S. (ed's) (1995) Costs, benefits, and farmer adoption of agroforestry. *World*

Bank Environment Paper, No. 14. The World Bank: Washington, D.C.

Dove, M.R. (1992) Forester's beliefs about farmers: a priority for social science research in social forestry.

Agroforestry Systems 17, 13-41.

Duenas, M. (1991) Tragedy in Ormoc: killer flood. *Philippine Free Press*, 133(47) (November 23), 4,21.

Falconer, J. (1987) Forestry extension: a review of the key issues. *ODI Social Forestry Network Paper*, No. 4e. Overseas Development Institute: London.

Fearon, J.D. (1990) Counterfactuals and hypothesis testing in political science. *World Politics* 43:169-195.

Feder, G., Just, R.E. and Zilberman, D. (1985) Adoption of agricultural innovations in developing countries: a survey. *Economic Development and Cultural Change* 33, 255-298.

Fortmann, L. (1985) The tree tenure factor in agroforestry with particular reference to Africa.

Agroforestry

Systems 2, 229-251.

Fortmann, L. and Rocheleau, D. (1985) Women and agroforestry: four myths and three case studies.

Agroforestry Systems 2, 253-272.

Godoy, R.A. (1992) Determinants of smallholder commercial tree cultivation. *World Development* 20, 713-725.

Guggenheim, S. and Spears, J. (1991) Sociological and environmental dimensions of social forestry projects. In *Putting People First: Sociological Variables in Rural Development (Second Edition)*, ed. M. Cernea, pp. 304-339. The World Bank and Oxford University Press: Washington, D.C. and New York.

Hildebrand, P.E. (ed.) (1986) *Perspectives on Farming Systems Research and Extension*. Lynne Rienner: Boulder, Colorado.

Hildebrand, P.E. (1986b) The concept of "homogeneous systems" and its usefulness. In *Perspectives on Farming Systems Research and Extension*, ed. P.E. Hildebrand, pp. 52-53. Lynne Rienner:

Boulder.

Hirschman, A.O. (1984) *Getting Ahead Collectively: Grassroots Experiences in Latin America*.

Pergamon:

New York.

Hyman, E.L. (1983) Smallholder tree farming in the Philippines: a comparison of two credit programs.

UNASYLVA 35(139), 25-31.

Jones, J.G.W. and Street, P.R. (ed's.) (1990) *Systems Theory Applied to Agriculture and the Food Chain*.

Elsevier: Amsterdam.

Jones, J.R. and Wallace, B.J. (ed's.) (1986) *Social Sciences and Farming Systems Research*. Westview

Press: Boulder.

Jones, J.R. and Wallace, B.J. (1986b) Social Science in Farming Systems Research. In *Social Sciences and*

Farming Systems Research, ed's. J.R. Jones and B.J. Wallace, pp. 1-20. Westview Press:

Boulder.

Korten, D.C. (1980) Community organization and rural development: a learning process approach. *The*

Public Administration Review 40, 480-511.

Kummer, D.M. (1991) *Deforestation in the Postwar Philippines*. University of Chicago Press: Chicago..

Kummer, D., Concepcion, R. and Canizares, B. (1994) Environmental degradation in the uplands of Cebu.

The Geographical Review 84, 266-276.

Landes, D.S. (1998) *The Wealth and Poverty of Nations*. W.W. Norton & Co.: New York.

Low, A.R.C. (1994) Environmental and economic dilemmas for farm-households in Africa: when 'low-input sustainable agriculture' translates to 'high-cost unsustainable livelihoods'. *Environmental Conservation* 21, 220-224.

Mikkelsen, B. (1994) *Methods for Development Work and Research: A Guide for Practitioners*. Sage:

London.

- Montes, M.F. and Lim, J.Y. (1996) Macroeconomic volatility, investment anemia and environmental struggles in the Philippines. *World Development* 24, 341-357.
- Myers, N. (1988) Environmental degradation and some economic consequences in the Philippines. *Environmental Conservation* 15, 205-214.
- Netting, R.McC. (1993) *Smallholders, Householders: Farm Families and the Ecology of Intensive, Sustainable Agriculture*. Stanford University Press: Stanford.
- North, D.C. (1990) *Institutions, Institutional Change and Economic Performance*. Cambridge University Press: New York.
- Ostrom, E. (1990) *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press: New York.
- Payuan, E.V. (1985) Social forestry in the Philippines. In *Proceedings of the First Asian Forestry Congress (Book III)*, pp. 647-659. ASEAN: Manila.
- Peluso, N.L. (1992) *Rich Forests, Poor People*. University of California Press: Berkeley.
- Putnam, R.D. (1993) *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton University Press: Princeton.
- Raintree, J. B. (ed.) (1987) *Land, Trees and Tenure*. International Council for Research on Agroforestry: Nairobi and the Land Tenure Centre: Madison, Wisconsin.
- Rudel, T.K. (1995) When do property rights matter? Open access, informal social controls, and deforestation in the Ecuadorian Amazon. *Human Organization* 54, 187-194.
- Rudel, T.K. and Horowitz, B. (1993) *Tropical Deforestation: Small Farmers and Land Clearing in the Ecuadorian Amazon*. Columbia University Press: New York.
- Sain, G.E. and Barreto, H.J. (1996) The adoption of soil conservation technology in El Salvador: linking productivity and conservation. *Journal of Soil and Water Conservation* 51, 313-321.
- Scoones, I. and Thompson, J. (ed's.) (1994) *Beyond Farmer First*. Intermediate Technology Publications: London.
- Shaner, W.W., Philipp, P.F. and Schmehl, W.R. (1982) *Farming Systems Research and Development: Guidelines for Developing Countries*. Westview press: Boulder.

- Sowell, T. (1996) *Migrations and Cultures: A World View*. Basic Books: New York.
- Taylor, P. and Garcia-Barrios, R. (1995) The social analysis of ecological change: from systems to intersecting processes. *Social Science Information* 34, 5-30.
- Tendler, J. (1989) Whatever happened to poverty alleviation? *World Development* 17, 1033-1044.
- Tendler, J. (1993) Tales of dissemination in small-farm agriculture: lessons for institution builders. *World Development* 21, 1567-1582.
- Thacher, T., Lee, D.R. and Schelhas, J.W. (1997) Farmer participation in reforestation incentive programs in Costa Rica. *Agroforestry Systems* 35, 269-289.
- Uphoff, N. (1986) *Local Institutional Development: An Analytical Sourcebook, with Cases*. Kumarian Press: West Hartford, Connecticut.
- Uphoff, N. (1991) Fitting projects to people. In *Putting People First: Sociological Variables in Rural Development (Second Edition)*, ed. M. Cernea, pp. 467-511. The World Bank and Oxford University Press: Washington, D.C and New York.
- Vayda, A.P. (1983) Progressive contextualization: methods for research in human ecology. *Human Ecology* 11, 265-281.
- Vayda, A.P. (1994) Actions, variations and change: the emerging anti-essentialist view in anthropology. In Assessing Cultural Anthropology, ed. R. Borofsky, pp. 320-330. McGraw-Hill: New York.
- Vayda, A.P. (1996) Methods and explanations in the study of human actions and their environmental effects. *CIFOR/WWF Special Publication*. Center for International Forestry Research: Bogor, Indonesia.
- Vayda, A.P. and Sahur, A. (1985) Forest clearing and pepper farming by Bugis migrants in East Kalimantan: antecedents and impacts. *Indonesia* 39, 93-110.
- Wade, R. (1988) *Village Republics: Economic Conditions for Collective Action in South India*. Cambridge University Press: New York.
- Walters, B. B. (1994a) Strategic issues for the Bais Bay Basin Development Action Program, Negros Oriental: Looking Back and to the Future. *Silliman Journal* 34, 1-8.

- Walters, B. B. (1994b) Process documentation and analysis of the first phase of the Development Action program of the Bais Bay Basin, Philippines. *ERMP Reports*, No. 11. Environment and Resource Management Project: Halifax, Canada and Laguna, Philippines.
- Walters, B.B. (1995) People, policies and resources: mangrove restoration and conservation in the Bais Bay Basin, Negros Oriental and wider Philippine context. In *Philippine Coastal Resources Under Stress*, ed. M.A. Juinio-Menez and G.F. Newkirk, pp. 151-165. Coastal Resources Research Network, Dalhousie University: Halifax, Canada and Marine Science Institute, University of the Philippines: Quezon City, Philippines.
- Walters, B.B. (1997) Human ecological questions for tropical restoration: experiences from planting native upland trees and mangroves in the Philippines. *Forest Ecology and Management* 99, 275-290.
- Walters, B.B., Cadelina, A.M, Cardano, A. and Visitacion, E. (1994) Watershed restoration and protection in the Bais Bay Basin, Philippines. *ERMP Reports*, No. 12. Environment and Resource Management Project: Halifax, Canada and Laguna, Philippines.
- White, T. A. (1992a) Peasant initiative for soil conservation: case studies of recent technical and social innovations from Maissade, Haiti. *Working Paper*, No. 3. The Environmental and Natural Resources Policy and Training Project: Madison, Wisconsin.
- White, T. A. (1992b) Peasant cooperation for watershed management in Maissade, Haiti: factors associated with participation. *Working Paper*, No. 4. The Environmental and Natural Resources Policy and Training Project: Madison, Wisconsin.
- White, T.A. and Runge, C.F. (1994) Common property and collective action: lessons from cooperative watershed management in Haiti. *Economic Development and Cultural Change* 43, 1-41.

Table 1. Summary of characteristics of eight upland villages in Bais, Negros Oriental that were targeted for tree planting and soil & water conservation programs in 1992.

<u>Village</u>	<u>Period Settled</u>	<u>No.</u> <u>Households</u>	<u>Average Farm</u> <u>Size (ha's)</u>	<u>Primary Crops</u>	<u>Land Tenure</u>
<u>North arm</u>					
Canlumbog	1930-1960	21	20.0* (<0.5)	sugar cane, coconuts, maize	private titles of absentee landlords with tenants
Malai-ba	1930-1970	27	1.5	sugar cane, maize	private titles with some tax- declared on timberland**
Tagpo	1940-1975	47	3.0	sugar cane, maize	private titles with some tax- declared on timberland
Amalao	1972	70	1.0	sugar cane, maize	tax-declared but contested titles on timberland
<u>South arm</u>					
Kambalagas	1950-1980	46	3.0	maize, mixed vegetables and fruits, sugar cane	tax-declared on timberland
Tina-an	1920-1950	30	2.5	maize, mixed fruits and vegetables	private titles with some tax- declared on timberland
Panala-an	1950-1970	200	2.0	maize, coconut, sugar cane, bananas	private titles with some tax- declared on timberland
Banga-banga	1920-1960	20	7.0	coconuts, mixed fruits, maize	private titles with some tax- declared on timberland

* Figure is for absentee landowner holdings. Figure in brackets is size of tenant plots.

** In the Philippines, a distinction is made between public lands which are zoned "alien & disposable" and legally transferable to private ownership and those public lands zoned as "timberlands" which are theoretically not transferable to private ownership.

Table 2. Summary of key historical factors in each village that influenced smallholder participation in tree planting and soil & water conservation.

<u>Village</u>	<u>How historical factors had a positive influence on participation:</u>	<u>How historical factors had a negative influence on participation:</u>
Canlumbog	<ul style="list-style-type: none"> * Shared experience working as <u>hacienda</u> laborers facilitated community mobilization and village-wide collective action. 	<ul style="list-style-type: none"> * Historical political divisions and related land tenure uncertainty impeded village-wide collective action; * Limited farming experience and prior livelihood dependency impeded technical transfer.
Malai-ba	<ul style="list-style-type: none"> * Common social history and <u>hacienda</u> labor experience facilitated mobilization and village-wide collective action. 	<ul style="list-style-type: none"> * Standard land use practices conflicted with tree planting; * Limited farming experience and prior livelihood dependency impeded technical transfer.
Amalao	<ul style="list-style-type: none"> * Common social history and <u>hacienda</u> labor experience facilitated mobilization and village-wide collective action; * Historical ambiguities over land tenure encouraged smallholder participation as a means to resolve issue. 	<ul style="list-style-type: none"> * Prior cattle ranching degraded most soils so no longer suitable for tree planting; * Limited farming experience and prior livelihood dependency impeded technical transfer.
Tagpo	<ul style="list-style-type: none"> * Extensive farming experience and historic self-reliance facilitated technical transfer; * Experience with flash floods had raised awareness and this prompted participation. 	<ul style="list-style-type: none"> * Staggered settlement history and historic self-reliance impeded collective action; * Negative experiences with previous extension workers discouraged participation.
Kambalaga	<ul style="list-style-type: none"> * Extensive farming experience and historic self-reliance facilitated technical transfer; * Recent settlement meant micro-climate and soils still well-suited for tree growing; * Prior, positive rapport with Program staff enhanced trust and participation. 	<ul style="list-style-type: none"> * Staggered settlement history and historic self-reliance impeded collective action; * Prior encounters with government agents had raised concerns over land tenure security and this discouraged participation.
Tina-an	<ul style="list-style-type: none"> * Extensive farming experience and historic self-reliance facilitated technical transfer; * Common social history enhanced village-wide collective action; * Prior work with government agents had enhanced tenure security & technical skills and this encouraged participation & technical transfer. 	
Panala-an	<ul style="list-style-type: none"> * Kin networks basis of collective action; * Experience with flash floods had raised awareness and this prompted participation. 	<ul style="list-style-type: none"> * Staggered settlement history impeded village-wide collective action.
Banga-banga	<ul style="list-style-type: none"> * Prior land uses had degraded soils to the point where tree planting & SWC were perceived as attractive to restore lands. 	<ul style="list-style-type: none"> * Prior negative experiences with communist insurgents discouraged participation; * Historical political divisions impeded participation & village-wide collective action.

Table 3. Preliminary list of general questions to guide an investigation into a village's history. Investigators are expected to tailor questions to the specific context and to consider each in terms of how the resulting answer might have consequences for the objectives or mechanisms of intervention.

Migration & Settlement History: (consequences for community definition & cohesion, and perception of land claims/resource tenure)

- * Were most villagers born locally or did they migrate to the area?
- * Where did migrants come from?
- * Did all of the villagers settle the area around the same time?
- * How long have the villagers known each other?

Family & Group Lineage History: (consequences for community cohesion, social organization, & leadership potential)

- * Are villagers descended from the same family or families?
- * If not, what historical relationship do they have to each other?
- * Who are the most senior and respected members of these families and groups?

Socio-political Organization & Conflict: (consequences for community cohesion, social organization, local institutions, and leadership potential)

- * How have villagers been politically active in the past?
- * In past elections, were all villagers supporting the same candidate?
- * Have there ever been any organizations or groups active in the village?
- * Who were the leaders of these organizations?
- * Were these organizations successful or not? Why?
- * Is there a history of feuding or social/political conflict in the village?

History of Physical Isolation: (consequences for local self reliance, community cohesion, and perception of outsiders)

- * How old are existing access roads and how has access to the village changed?
- * How frequently have villagers been in contact with outsiders and what form did this contact take?

Labor History: (consequences for technical knowledge/expertise, collective work experience/institutions, and leadership potential)

- * What kinds of off-farm employment have villagers engaged in?
- * Did villagers learn special knowledge or skills from off-farm work?
- * When and for what reasons have villagers ever worked collectively?
- * What sorts of division of labor did collective work involve?

Economic-Ecological History: (consequences for local environmental knowledge, technical expertise, and collective work experience/institutions)

- * What kinds of farming did villagers do in the past?
- * What other kinds of resource use activities have villagers done in the past?
- * What kinds of knowledge or skills do villagers from previous agricultural and other work?
- * Did any of the previous work involve cooperation (collective work, agreements, etc.) between individuals?

Table 3. contd.

Environmental History: (consequences for local environmental knowledge/awareness and risk perception)

- * How has the local environment changed over time (e.g. changes in soil quality, hydrology, extent and diversity of forests & wildlife, etc.)?
- * How have these changes affected agricultural practices, resource use, etc.?
- * Have there ever been any major floods, droughts, hurricanes or pest outbreaks?

Past Exposure to Development Projects & Agents: (consequences for technical knowledge/expertise, perception of outsiders, social organization, and leadership potential)

- * Have government or other development agents ever worked in the village?
 - * Did they work with individuals or did they organize people from the village?
 - * Were attempts by these agents to work with villagers successful or not? Why?
 - * What kinds of technical knowledge/skills were transferred to villagers?
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FIGURE CAPTION

Figure 1. Map of the Bais Bay Basin, Philippines, including locations of eight upland villages involved in tree planting and soil & water conservation efforts.