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SOME BASIC ASSUMPTIONS IN CURRENT RESEARCH ON NATURAL RESOURCES AND ENVIRONMENT MANAGEMENT IN SOUTHEAST ASIA[1]

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ABSTRACT

In this presentation I discuss some of the basic assumptions that are commonly encountered in reports of recent research on natural resources and environment management in Southeast Asia. Four basic assumptions seem to be especially prevalent:

1. Traditional agricultural systems are superior to modern systems because they are always sustainable and environmentally benign.
2. Indigenous agroecological knowledge is always correct and valuable.
3. Community-based resource management is always the most effective and equitable system for managing resources and protecting the environment.
4. Participatory Rural Appraisal (PRA) is always the best research method for investigating natural resources and environment management.

These four assumptions form an interlinked system of thought, with each tending to support the others. Although when they were first proposed these assumptions were seen as representing a radical alternative to the conventional thinking that guided national efforts to manage natural resources and the environment, in recent years these assumptions have themselves collectively become the new conventional wisdom. In this talk I will raise some questions about the universal validity of these assumptions and will suggest that, like the old conventional wisdom that they have largely displaced, their applicability is context dependent. Thus, in doing research on natural resources and environment management we should be more sensitive to the ways in which these fundamental assumptions may influence our perceptions of problems and shape the way we design our investigations. My goal in raising these questions is not to overturn any of these assumptions or replace them with new assumptions of my own but only to stimulate more thinking and discussion about their strengths and limitations.

INTRODUCTION

After I was invited to give this keynote I immediately began to worry about whether I could think of anything interesting to say. So much has been written about

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natural resources and environment management in recent years that it is very hard to think of any new way to approach the problem. I did not want to present yet another inventory of environmental problems. We have all already heard a great deal about global warming and climate change, deforestation and land degradation, and genetic erosion and biodiversity loss, to mention just a few of the major resource and environment problems that are impacting agricultural systems in Southeast Asia and I really have nothing new to say about these big problems. But then I thought that maybe I could take a different approach, one that focused on some of the key assumptions that guide our thinking and research about these problems rather than on the substantive problems themselves. Thus, what I will present today is a kind of meta-analysis of some of the main beliefs, concepts, and assumptions that guide the way we think about problems of natural resources and environment management.

My methodology is an admittedly impressionistic one that draws on my experience as a member of the Editorial Board of *Southeast Asian Studies*, the journal published by the Center of Southeast Asian Studies of Kyoto University, my service as a peer reviewer for several other journals, and my supervision of student papers and theses. Over the past 4 years I have looked at well over 100 manuscripts dealing with natural resources and environment management in Southeast Asia. These dealt with a great diversity of topics and geographical areas, including coastal zone management in Indonesia, use of wild plant species in reforestation programs in shifting cultivation areas in Sarawak, social forestry in Thailand, the impact of ethnic minority peoples on forest resources in Vietnam, and improved fallow management in shifting cultivation systems in Laos. Despite the diversity of topics and places discussed in these papers, what I found most striking was the extent to which their authors share a set of four basic assumptions:

1. Traditional agricultural systems are superior to modern systems because they are always sustainable and environmentally benign.

2. Indigenous agro ecological knowledge is always correct and valuable.

3. Community-based resource management is always the most effective and equitable system for managing resources and protecting the environment.

4. Participatory Rural Appraisal (PRA) is always the best research method for investigating natural resources and environment management.

These four assumptions form a tightly linked system of thought in which each assumption supports all of the other assumptions. A researcher who accepts the validity of any one of these assumptions is likely to accept all of the other assumptions as well. Collectively, they represent the current conventional wisdom of the scientific community engaged in research on natural resources and environment management. It is important that we understand these assumptions because they exert so much influence on the way

we think about environmental problems, how we design and conduct our research, and what we teach our students. In this presentation, I will examine the content of these assumptions and raise some questions about their universal validity. In doing this, my goal is not to overturn these assumptions and replace them with my own, but only to stimulate more critical thinking about their strengths and limitations.

ARE TRADITIONAL AGRICULTURAL SYSTEMS ALWAYS SUSTAINABLE AND ENVIRONMENTALLY BENIGN?

Until the 1980s, most scientists and virtually all development policymakers viewed traditional agriculture with scorn. Traditional farming systems were thought to be unproductive, wasteful of resources, and environmentally destructive. The primary goal of agricultural development programs was to convince farmers to abandon their traditional farming systems and adopt modern agricultural technology. The Green Revolution that IRRI launched in the 1970s exemplified this strategy of wholly replacing traditional agricultural systems with modernized systems of farming.

At the same time that the Green Revolution was achieving its initial triumphs, however, anthropologists and ecologists working within the adaptationist paradigm of human ecology began to publish research findings that portrayed traditional agriculture in a favorable light and raised serious questions about the virtues of modern agriculture. Much of this research was done in Southeast Asia. Key studies included Harold Conklin's description of Hanunoo swidden agriculture on Mindoro Island in the Philippines (Conklin, 1957), Clifford Geertz's analysis of Javanese wet rice agriculture (Geertz, 1968), and Otto Soemarwoto's description of Javanese home gardens (Soemarwoto and Soemarwoto, 1984). These studies revealed that some traditional agricultural systems were productive, highly sustainable and did not cause serious environmental degradation. At the same time as views of traditional agricultural systems were changing in a favorable direction, questions were being raised about whether or not the Green Revolution was actually as successful as had initially been claimed. It was charged that the new technology favored wealthier farmers using high quality land and was unsuited to poor farmers on marginal lands. Adoption of Green Revolution technology was also held responsible for loss of genetic diversity, excessive use of chemical fertilizer and pesticides, and pollution of soil and ground water.

Today, the view that traditional agricultural systems are sustainable and environmentally benign whereas modern systems are unsustainable and cause serious environmental damage has become the new orthodoxy. The positive evaluation of traditional agricultural systems has entered the academic mainstream and has even

begun to influence policymakers to some extent, largely as the result of its advocacy by environmentalist NGOs. It has gotten to the point that one can hardly pick up a copy of the *Bangkok Post* or *The Nation* without encountering an article comparing the positive aspects of traditional agriculture to the malignancies of modern agriculture.

Now one might ask, "What is wrong with that?" Certainly, the former conventional wisdom that viewed traditional agriculture in a wholly negative light needed revision. The problem, however, is that the positive view of traditional agriculture has become transformed into an ideological belief that is no longer subject to empirical testing. Instead, it has become an article of faith: "Traditional is good, modern is bad." In reality, of course, it is not that simple. Let me use the example of swidden agriculture (shifting cultivation or slash-and burn farming) to illustrate this point.

Until quite recently, scientists and rural development policymakers shared the view that shifting cultivation was a primitive system that suffered from low productivity and caused immense environmental damage. Beginning, however, with Harold Conklin's detailed research on Hanunoo swidden agriculture (Conklin, 1957), scientists, particularly anthropologists, have radically changed their views. Shifting cultivation is now commonly portrayed as representing the optimum agricultural adaptation to environmental conditions in Southeast Asia's uplands. Indeed, numerous research studies have shown that, when population density is low and forest land abundant, rotational swiddening is highly productive, makes effective use of limited supplies of nutrients, and does little or no long-term damage to the environment. For example, in his analysis of the traditional rotational swiddening system practiced by the Montagnard groups of Vietnam's Central Highlands, Bui Minh Dao (2000) presents a very positive assessment. Yields were high with a seed to harvest ratio of 1/60 and an average production of 2.7 tons of unhusked rice/ha. Although wet rice fields in the lowlands gave higher yields per hectare, swiddens gave a higher return on labor. Only 250 to 280 labor days were needed per hectare to produce an average yield of 9 kg of paddy per labor day (Bui Minh Dao, 2000: 92). The system was also quite sustainable. As long as the population density remained under 15 persons/km^2, the rotational cycle was sufficiently long for the forest to fully regenerate between cultivation phases.

Researchers who studied other traditional rotational swiddening systems in upland areas of Indonesia, Laos, and Thailand all reported findings similar to those for Vietnam: Under conditions of low population density and abundant forest land, rotational swiddening is a very productive and highly sustainable agricultural system. Indeed, given the very high yields per hour of labor offered by rotational swiddening, farmers would have to be crazy to abandon this system in favor of permanent wet rice farming (Rambo, 1984).

The problem, however, is that the demographic and environmental conditions in the uplands of Southeast Asia have not remained constant but instead have been undergoing very rapid change. Since the early studies that discovered the positive aspects of traditional swidden systems were completed some fifty years ago, human population densities have dramatically increased while the supply of forestland has been shrinking. In Vietnam's Central Highlands, for example, the population grew from 400,000 in 1936 to approximately 2.5 million in 1997. This has resulted in a serious problem of land scarcity. Consequently, farmers have had to extend the period of cropping from only 1 year to 4 years and shorten the fallow period from 20 years to 4 or 5 years. Under these changed conditions, the productivity and sustainability of swidden systems have both declined dramatically. In Vietnam's Central Highlands, for example, the seed to harvest ratio is now only 1/32, the grain yield 1.4 t/ha, and the return on labor only 6.4 kg/labor day (Bui Minh Dao, 2000: 94).[3] Because of the increased length of the cropping period and the greatly shortened fallow period, the forest is no longer able to regenerate. Instead, vast areas have been taken over by *Imperata* grass. Thus, under changed demographic and environmental conditions, an agricultural system that was formerly both productive and sustainable has been transformed into a system that is unproductive and environmentally destructive.

What is true of shifting cultivation systems is true of all traditional agricultural systems - the environmental context in which all of these systems function is undergoing rapid change. As a consequence of such environmental change, systems that once functioned in a highly sustainable manner may no longer do so under radically different conditions. Thus, rather than assuming that all traditional systems are sustainable, we need to empirically assess the extent to which they actually perform in a sustainable manner under current environmental conditions.

Unfortunately, however, one of the greatest weaknesses of agroecosystem analysis has been the lack of attention given to empirical measurement of system performance in terms of any of the emergent properties. We all like to talk about properties like "productivity," "stability," "equitability," and "sustainability" but we rarely attempt to measure them. Discussions of sustainability have been especially problematic, both because of the looseness in the way this property has been defined and the very great difficulties that are encountered in measuring it in real world agricultural systems.

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[3] Productivity of swiddens is even lower in the heavily degraded lands of Vietnam's Northern Mountain Region. There, rotational swiddening groups like the Kho Mu achieve a seed to harvest ratio of 1/20, a yield of 900 kg of paddy/ha, and a return on labor of 4.5 kg/day (Bui Minh Dao 2000: 95).

To bring this discussion of the assumption that traditional agricultural systems are sustainable to a conclusion, let me emphasize that I am in no way suggesting that traditional agricultural systems are unworthy of study. I think we can still learn a great deal from looking at how traditional farmers have managed natural resources and the environment. But we should be careful not to romanticize traditional systems. Whether or not any agricultural system, be it a traditional system or modern system, is sustainable and environmentally benign is a purely empirical question.

IS INDIGENOUS AGROECOLOGICAL KNOWLEDGE ALWAYS CORRECT AND VALUABLE?

Accompanying the adoption of a positive view of traditional agricultural systems has been an explosive growth of interest in indigenous agro ecological knowledge.[4] This marks a truly radical change in our assumptions. It was not so long ago that scientists and government development officers did not think that they had anything to learn from farmers who lacked advanced educations. Farmer knowledge was dismissed as a collection of superstitions and erroneous beliefs. It was widely believed that the only way to achieve agricultural development was for researchers to generate new technology on experiment stations and then extend it to the farmers. Perhaps the greatest achievement of the farming systems research movement that spread across Southeast Asia in the 1980s was to get scientists to pay serious attention to finding out what farmers thought. But research on indigenous agro ecological knowledge actually began many years before the birth of FSR. Anthropologists first began doing this type of research in the 1950s under the label of “ethno ecology.”

Initially, ethno ecological research focused almost exclusively on describing folk biological taxonomies—the systems of naming and classification of plant and animal species used by tribal groups. It was soon discovered that many tropical forest tribal groups identified a larger number of named species than did scientific taxonomists. Follow-on research frequently revealed that the native peoples were correct and the scientists wrong, demonstrating that the people who actually lived in a habitat were likely to have a detailed and accurate knowledge of the plants and animals on which they relied for their survival. Subsequently, the scope of research was expanded to include the total range of indigenous biological knowledge, not just the names of plant and animal species but also knowledge about their behavior and uses, especially in the case of medicinal plants and traditional crop varieties. Ethno ecological research also dealt with indigenous

[4] I employ the term “indigenous knowledge” in this discussion because it has been so widely used in the literature. I think, however, that “local knowledge” is actually a better choice because by using it one avoids the need to make judgments about which people qualify as “indigenous.”

knowledge of weather forecasting and prediction of natural disasters, identification and spatial distribution of resources, sometimes called “mental mapping.”

After more than 50 years of ethno ecological research, and twenty five years of FSR, much of it conducted in Southeast Asia, it has by now been clearly demonstrated that local people possess a vast storehouse of detailed knowledge about virtually every aspect of their agricultural environment. Documenting this information, much of which is at risk of loss due to social and environmental change, has become a high priority. Even IRRI is now sponsoring efforts to record indigenous knowledge of rice cultivars in Laos.

Many scholars now seem to assume that indigenous knowledge is invariably accurate and useful. Some even suggest that it is superior to scientific knowledge, usually because it is thought to be holistic and not bounded by disciplinary limitations. But we really don’t actually know how accurate and useful indigenous agro ecological knowledge really is because, although much effort has been devoted to recording it, almost no attention has been paid to attempting to verify its accuracy and reliability. I would suggest that indigenous knowledge represents a complex mixture of information that can be classified into three categories:

1) Knowledge that is valid and generates adaptive behavior by the farmers.

2) Knowledge that is empirically invalid but still valuable because it generates adaptive behavior by the farmers.

3) Knowledge that is empirically invalid and generates maladaptive behavior by the farmers.

I will briefly discuss each of these alternatives in turn:

1. Knowledge that is valid and generates adaptive behavior by the by the farmers.

It is examples of indigenous knowledge belonging to this category that are most frequently reported in the literature. Many hundreds of reports have been published documenting useful indigenous agro ecological knowledge of different ethnic groups in Southeast Asia. To cite just one example, Hoang Xuan Ty (1998) has compiled an entire book describing the agro ecological knowledge of ethnic minority peoples in Vietnam. According to Ty, the Montagnard farmers in the mountains of central Vietnam know that the only successful way to create cinnamon plantations is to plant the seedlings in small clearings scattered inside the forest. There, the shade from the surrounding forest trees protects the delicate seedlings from the intense rays of the sun while humidity levels are optimal for their survival. Government efforts to plant large plantations of cinnamon in the same area invariably fail because the seedlings cannot survive the hot sun and low humidity in the extensive cleared areas of the state plantations. After reading Ty’s account, one has no doubt that the knowledge of the agro ecology of cinnamon of these

indigenous farmers is correct and valuable. Indeed, the farmers seem to have a much better understanding of the ecological requirements of the cinnamon trees then the government agricultural experts.

2. Knowledge that is empirically invalid but generates adaptive behavior by the farmers.

Indigenous knowledge belonging to this category has also been frequently reported in the literature. For example, there are many accounts of the ways in which traditional peoples employ methods of ritual divination to provide guidance in their agricultural activities. Farmers in Northeastern Thailand carefully watch the Royal plowing ceremony each spring to see which food the Royal bulls choose from the several options they are offered. If the bulls pick rice, water or hay, then plentiful rainfall can be anticipated. If, however, the bulls eat maize, mung beans, sesame seeds or liquor, then insufficient rain will fall. The farmers also pay attention to the length of the sarong that the official in charge of the ritual selects to wear while doing the plowing. The longer the sarong he selects the less rain that is expected to fall.[5] Based on these indicators, the farmers can make decisions about what planting strategy to follow, particularly whether to give priority to their lower or upper paddy fields. From a scientific standpoint, of course, there are no plausible linkages between the food picked by the bulls or the length of the sarong chosen by the official and the amount of rainfall in Isan. So this indigenous knowledge cannot possibly be viewed as empirically valid. It can be suggested, however, that if the choice of food by the bulls and the selection of the sarong by the official actually occur wholly at random, then by basing their decisions on these indicators, the farmers' choice of planting strategies will also be randomized. Such randomization should give farmers the highest statistical probability of choosing the correct course of action in a climatic zone where rainfall is almost wholly unpredictable. It would be interesting if a climate modeler would compare the historical records of these ritual predictions with the actual rainfall records for the past 50 years to see how well the ritual prediction system has worked in practice.

3. Knowledge that is empirically invalid and generates maladaptive behavior by the farmers.

Indigenous knowledge in this category is almost never reported in the literature. That is hardly surprising because of the fact that, when anthropologists first began to study indigenous knowledge, the whole point of the exercise was to demonstrate to skeptical conventional scientists that it was of great value. So we all looked for dramatic examples of correct and useful indigenous knowledge. No one tried to identify examples

[5] I want to thank Adjaan Nongluck Suphanchaimat for sharing this information with me.

of misleading or incorrect indigenous knowledge. As a result, we have a very skewed picture of indigenous knowledge, one that highlights its positive aspects but obscures its shortcomings and deficiencies. Yet anyone who has worked in the field knows that many things that his informants assume to be true are of very questionable validity. For example, lowland Vietnamese explained the fact that they became ill with malaria when they entered the forested hills around the Red River Delta in terms of the malevolent actions of the evil spirits that they believed lived in the forests. Of course, we now know that the malaria was caused not by evil spirits but by the Anopheles mosquitoes that thrived when the settlers cleared the forest to plant crops (Le Trong Cuc et al., 1990).

It would be an interesting exercise, I think, to systematically evaluate the complete body of agro ecological knowledge held by a specific indigenous group to determine what parts of it fall into each of the three above listed categories. This would provide some measure of just how accurate and reliable indigenous knowledge actually is. Of course, making such an evaluation would be very difficult. What, for example, would the standard be against which indigenous knowledge is tested? Some scholars have compared elements of indigenous knowledge against scientific knowledge (e.g., comparing the number of “species” recognized by native informants to the number identified by taxonomists). This approach starts from the assumption that scientific knowledge is always correct and represents some sort of “gold standard” against which indigenous knowledge can be tested, however. But that is not a safe assumption since scientific knowledge about agro ecology is not always either complete or correct.

Let me conclude this discussion of indigenous agro ecological knowledge by reemphasizing that it is a very important subject for research and is fully deserving of all the attention it is now attracting. But we should remain skeptical of its validity until that is verified by deeper investigations.

IS COMMUNITY-BASED MANAGEMENT ALWAYS THE MOST EFFECTIVE SYSTEM FOR MANAGING NATURAL RESOURCES AND THE ENVIRONMENT?

In recent years the concept of "community-based resource management" has gained great popularity among NGOs and international development assistance agencies as the best solution to problems of environmental degradation in Southeast Asia (Ford Foundation, 1997). It is asserted that local people will always do a better job of managing resources and protecting the environment than agencies of the state.

Although the concept of community-based management is an appealing one that is in keeping with currently popular ideas about decentralization of government and empowerment of local people, there has been little objective research on how well this

approach actually works in practice. Many case studies have been published describing communities that have successfully managed resources but one cannot generalize from these findings because they are based on a biased sample. Researchers have not studied a random selection of all communities in an area but instead have focused on communities that were selected precisely because they were known to be successfully employing this management system. Not surprizingly, the results always seem to confirm the initial expectations of the researchers. We cannot assume, however, that all communities have the capability to successfully manage the resources entrusted to them. Whether or not any specific community can effectively manage resources is dependent on its internal characteristics, especially the extent to which it displays social solidarity and possesses adequate amounts of social capital.

As Agrawal and Gibson (1999) have pointed out, remarkably little attention has been paid to the question of how the internal social organization of villages constrains their capabilities for effectively managing natural resources. The prevalent assumption seems to be that rural villages are inherently endowed with the institutional capacity to organize successful collective action to use resources in an equitable and sustainable manner. But, as has been repeatedly revealed by empirical investigations of rural villages, social organization is not a constant. Some rural communities have high levels of solidarity and great capacity for collective action to manage resources, but others are characterized by high levels of inter-household competition, pervasive distrust among members of unrelated households, and a near total absence of community solidarity. Indeed, it can be argued that in many rural communities "social capital" is in shorter supply than financial capital. In such situations, the villagers, whatever their individual intentions and desires, lack the institutional capacity to manage resources for the common good (Rambo and Tran Duc Vien, 2001).

Even communities that are cohesive and have adequate social capital to mount effective collective action may not always choose to manage resources in an environmentally responsible way. In some situations, they may decide to maximize the short-term returns that they receive from unsustainable exploitation of natural resources. Such resource “mining” is a very common pattern in frontier settlements.

In deciding about how to manage resopurces under their control, communities may also choose to ignore the environmental externalities of their resource use practices that have negative impacts on people in neighboring communities. For example, farmers living in communities in the upper part of a watershed may appropriate most of the available water for their own irrigation systems, leaving downstream communities with insufficient water, a problem that is said to be common in the mountains of northern Thailand. In such circumstances, a higher level authority may have to intervene to ensure

that local communities manage resources in a way that takes the need of the larger society into account.

Again, in raising questions about community-based resource management I am not suggesting that it is a bad approach. I am certainly not suggesting that returning authority to manage local resources into the hands of state agencies is always a desirable alternative. Whether or not community-based management is a good thing or not is largely dependent on context. In cases where communities have the necessary social capabilities to effectively manage resources then by all means we should try such an approach; but in the case of communities that manifestly lack solidarity then we need to consider alternative strategies.

IS PARTICIPATORY RURAL APPRAISAL ALWAYS THE BEST RESEARCH METHOD FOR INVESTIGATING NATURAL RESOURCES AND ENVIRONMENT MANAGEMENT?

In an opening address a few years ago to an ICRAF conference on improved fallow management in swidden agriculture, Dennis Garrity asserted that, "special care must be taken to develop research methods specifically for the unique conditions of shifting cultivation" (in Cairns n.d.). What is true of research on shifting cultivation is equally true of other topical issues of natural resources and environment management: We need to use research methods that fit the problems we are studying. In recent years, however, too many researchers--especially graduate students--have exclusively relied on Participatory Rural Appraisal (PRA) and have ignored the use of other methods. Of course, PRA has its place in the researcher's toolkit, but it is not the magical means to obtain reliable information quickly and cheaply that many now seem to think it to be.

A few years ago in Hanoi, I briefed a group of visiting foreign consultants on a project that CRES and the EWC had done on development trends in Vietnam's Northern Mountain Region (Le Trong Cuc and Rambo, 2001). We had made detailed investigations of five upland communities in order to establish a firm base line against which to measure changes in the future. We employed a suite of methods including establishment of ecological transects, vegetation mapping using satellite images, interviewing of randomly selected households using standardized survey questionnaires, and semi-structured interviews with community leaders. At the end of my presentation, one of the consultants asked in a quite aggressive way why we hadn't used PRA. It was clear from the way that this consultant asked her question that she saw us as being somehow morally deficient because we had not involved local people in our research by using Participatory Rural Appraisal as our main method. I responded that we were doing an in-depth scientific study, not working with people to design a community development

project, but my explanation really didn't satisfy her. In her eyes PRA was the only legitimate method to employ in rural research.

This experience got me to thinking about the extent to which rapid appraisal methods have come in recent years to dominate rural research in Southeast Asia. PRA, in particular, has caught the fancy of the NGOs and has been warmly embraced by the World Bank, SIDA, and other development assistance agencies. I don't know of a single development project in the mountains of Vietnam in the past five years that has been launched without first commissioning a PRA.[6] Dozens, if not hundreds of such studies have been done (although few have been published so as to be available for public scrutiny). I think this is an unhealthy trend, not because there is anything intrinsically wrong with PRA, but because excessive reliance on it may be displacing other types of research. Since the methods we use in large part determine the kinds of questions we can answer I think there is a great risk in allowing PRA to become the sole method of choice.[7]

PRA developed as an outgrowth of Rapid Rural Appraisal (RRA). RRA was developed in the 1980s by a group of scholars associated with the Farming Systems Research and the Rural Systems Research projects at Khon Kaen University. Terry and Somluckrat Grandstaff provided the initial leadership in this effort but it was very much a collective enterprise (Khon Kaen University, 1987). Researchers at KKU produced a remarkable set of studies using RRA methods (Lovelace et al. 1988). These offered new ways of seeing problems of development in the rain-fed farming communities of Northeastern Thailand and demonstrated the great power of rapid appraisal methods.[8] This led some to assume that rapid appraisal methods offered a cheap and effective methodology that could be used by virtually anyone to study any kind of problem anywhere in the developing world. But before accepting that conclusion, we should step back and look carefully at the studies done at KKU to see why they were so successful. One important, and generally unrecognized factor, was the very high professional quality

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[6] Some villagers in Vietnam's northern mountains refer to these PRAs as "the four big things:" Big paper and big pens (used to draw the maps and transects), big cars (referring to the researchers' Land Cruisers), and big projects (Tran Duc Vien, pers. comm.).

[7] In the interests of transparency, I should note that I am in no sense an innocent bystander in this matter. I was an early advocate of RRA, incorporating this method in a series of training workshops that I helped organize for SUAN in the 1980s. Working together with the late Dr. Terd Charoenwatana I helped organize RRAs in Luang Prabang and Savanakhet provinces in Laos (Gillogly et al. 1990; SUAN Secretariat 1992) and with Dr. Le Trong Cuc I organized one of the first applications of this approach in Vietnam's uplands (Le Trong Cuc, Gillogly, and Rambo 1991).

[8] See Grandstaff and Messerschmidt (1995) for a comprehensive discussion of RRA methods.

of the researchers involved. Most held advanced degrees and were recognized experts in their fields. They had long experience in working in the Northeast and already had a very good understanding of the local situation. That meant that they could quickly recognize the significance of new information when they encountered it. And most spoke the local language and could communicate easily with the farmers they were interviewing. In their hands RRA proved to be a productive way to collect information. It was especially fruitful because it created an institutional framework that facilitated specialists from different disciplines working closely together. Because RRA was perceived as a new method, involvement in the project generated an unusual degree of enthusiasm and commitment on the part of participating researchers. But I suspect that these researchers could have used virtually any method that brought them into close contact with the farmers (and with each other) and they would have produced useful knowledge.

Participatory Rural Appraisal (PRA) was a later outgrowth of RRA. It adopted many of the data collection methods used in RRA studies but dressed them up in populist rhetoric. Robert Chambers and Gordon Conway were early promoters but NGOs and international development assistance agencies have been the main users and advocates. PRA is seen as a way of empowering poor villagers, giving them "voice" to use the fashionable jargon. In Conway's words,

> In some ways it has been a revolution: a set of methodologies, an attitude and way of working which has finally challenged the traditional top-down process that has characterized so much development work. Participants from NGOs, government agencies and the research centers rapidly find themselves, usually unexpectedly, listening as much as talking, experiencing close to first hand the conditions of life in poor households and changing their perceptions about the kinds of intervention and research that are required (Conway, 1997:199).

As an anthropologist I must confess to feeling somewhat offended by Conway's claims about the special virtues of PRA research. Learning from the people is not a new approach for us; we have employed "participation-observation" as our method of choice for almost a century. And we experience the "conditions of life in poor households" by actually living in their houses, often for very extended periods. We don't show up each morning in our air-conditioned Land Cruiser, spend a day listening to people talking in a very artificial situation, and then delude ourselves into thinking that we have had a "close to first hand" experience of their lives.

It should also be remembered that, as it was first developed at KKU, RRA was intended for use as a method to quickly identify problems for further in-depth research by disciplinary specialists. Thus, doing an RRA was seen as only the first step in a long

process. It was never seen as an end in itself or as a way as providing definitive answers to complex questions. But rapid appraisal has evolved into something very different from what it was when first done at KKU. It has become a substitute for doing long-term in-depth research. In part this is because the donor agencies need to create the illusion that they have done research to justify their development assistance projects.[9] They love rapid appraisal because it offers a cheap and relatively easy way to create this illusion. Why fund an anthropologist to live in a village for a year when you can claim to understand everything important by sponsoring a 3 or 4 day long rapid appraisal exercise? It costs a lot less, is ready for publication much sooner, and, if its findings are presented in a properly glossy booklet, with lots of system diagrams and color photographs, looks just as impressive. PRA has even greater appeal to the international development assistance agencies because of its populist packaging. How can anyone attack development plans that claim to be designed on the basis of inputs from the local population? A report published by the World Bank in Vietnam entitled *Vietnam: Voices of the Poor*, which presents a synthesis of several community level "Participatory Poverty Assessments," makes the rather arrogant claim that,

> …the four PPAs have been accepted by local communities and authorities as sound representations of the reality of poor people's lives. This is an important endorsement. If the people who contributed to the study and the people who have lived in these areas all their lives believe that the studies accurately capture the problems and priorities of the poor, then why should critics living elsewhere remain skeptical? (World Bank and DFID, 1999:4).

To challenge that claim is to brand oneself as an elitist bent on denying voice to the poor! But the question of whether or not PRAs accurately capture the complex nature of rural communities still needs to be asked. There is not a simple yes or no answer. PRAs are useful for generating certain kinds of information, but unsuitable for eliciting other kinds of data. Participatory methods can be useful in eliciting valuable new insights

[9] PRA is also understandably popular among metropolitan development consultants (usually but not always Westerners) who are able to "parachute" into the field for a few weeks at most and emerge with what appear to be exciting new understandings of complex rural problems. All too often, however, those findings have not actually emerged from the PRA exercise. Instead they are obtained by the consultant's skillful extraction of knowledge from his local colleagues who have invested their careers in developing an understanding of the area in which they are working.

from local people about their conditions and needs but may conceal more than they reveal about power relations and conflicts within the community.[10]

PRA has two major weaknesses. The first is that local knowledge, even if correctly assessed, may be incomplete or even incorrect. For example, Cao Guangxia and Zhang Lianmin (in Cairns, n.d.) report that farmers in Yunnan, China, told them that growing rubber involved less labor than cultivating swiddens but that their studies of labor use showed no difference between the two systems. They ask if these findings suggest "deliberate ignorance" on the part of the farmers. Of course, if rapid assessment generated an accurate picture of how upland people perceive their situation, even if those perceptions are imperfect ones, it would still be valuable. It is questionable, however, whether most PRAs as they are actually carried out, are very successful in enlisting true participation of local people that effectively taps their knowledge and views. Indeed, in some situations, it is very much in the farmers' self-interest to conceal the truth from the researchers. Thus, Peter Hoare and his colleagues, in a report on their study of the planting of "ma kwaen" spice in fallowed swiddens in northern Thailand, state that farmers gave them conflicting information about methods of propagating and maintaining the trees because "…the farmers were afraid that their market price would decline if many additional villages started to plant the jungle spice" (in Cairns, n.d.).

The second major weakness of participatory methods is that they are an ineffective tool for understanding social organization, particularly to identify contradictions and conflicts within upland communities. The method itself, in which "local people" are interviewed in a group situation, virtually guarantees that contradictions will be concealed and conflicts hidden beneath the rhetoric of community solidarity. One must ask the questions of "how participatory are PRAs?," "who participates in PRAs?," and "under what social constraints do people participate in PRAs?" All too often, community participation is organized by members of the local power elite who make sure that the sessions are

[10] In reading many PRA reports I have been struck by how similar they all seem. They all deploy the standard array of transects, maps, and cropping calendars. The local people all sound like they had been to a special school run by Samuel Popkin to train them to speak as "rational peasants." The descriptions of the communities and their resource management practices are much too neat and orderly to reflect reality. There are no evident contradictions or unanswered questions. And almost never is there any mention of conflicts of interest among members of the community being studied. To the extent that there is any mention of conflict it is invariably between the community and outside institutions, especially state forestry agencies.

dominated by their clients and dependents.[11] Just how open and honest are ordinary villagers likely to be when answering questions about inequities in the land allocation system, when the village headman is sitting sipping tea just across the table from them?

Let me end this discussion by emphasizing that in singling out PRA for criticism I am not suggesting that this method should be abandoned entirely, but only that it, like all methods, should be employed selectively and without the illusion that it offers a cheap and easy substitute for more intensive methods of data collection. There are no "magic bullets" in research.

CONCLUSIONS

In my talk today I have raised some questions about four basic assumptions that are commonly encountered in reports of research on natural resources and environment management in Southeast Asia. These assumptions--that traditional agricultural systems are sustainable, that indigenous agro ecological knowledge is correct and valuable, that community-based resource management is effective, and that PRA is the best method of research—form a mutually reinforcing set so that a researcher who accepts one of these assumptions is likely to accept all of the others as well. Together, they are becoming the new orthodoxy in our thinking about problems of natural resources and environment management. They are widely encountered in the literature, are incorporated in university teaching curricula, and have been accepted by many official agencies concerned with rural development. For that reason, they deserve critical scrutiny of the sort that I have attempted in this discussion.

In raising questions about these basic assumptions I am not suggesting that they are totally wrong or should be discarded and replaced with other alternative assumptions. As I hope everyone has understood, I think that all of these assumptions have some validity and that all of them have considerable utility for research on natural resources and environment management. At the same time, however, I have suggested that none of these assumptions represents an absolute and unchanging truth. Instead, they are valid and useful in some contexts but not in others. What is really important is that we, as researchers, come to recognize the context-dependent character of our assumptions so that we employ them in ways appropriate to the situation we are studying.

[11] In my first experience with using RRA in a village in Vietnam, my team found itself interviewing a woman who was trembling with malaria chills. It turned out that she was the wife of the hamlet head who had sent us to her so we would not meet with politically less reliable informants.

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