Agricultural extension approaches and methods in developing countries have been changing in recent years to reflect a new development paradigm that emphasizes sustainability, institutional change, and a participatory learning process leading to local capacity building and empowerment. The purpose of this paper is to reflect upon how agricultural extension approaches and methods have adapted to these changes in recent years by analyzing the main directions of reform in extension approaches and methods and the potential Participatory Rural Appraisal (PRA) has for moving the extension profession towards a development paradigm that embraces learning rather than teaching processes.

**Introduction**

Agricultural extension approaches and methods in developing countries have been changing in recent years to reflect a new development paradigm that emphasizes sustainability, institutional change, and a participatory learning process leading to local capacity building and empowerment. The purpose of this paper is to reconsider and reflect upon how agricultural extension approaches and methods have adapted to these changes in recent years by asking: 1) What are the main directions of reform in international agricultural extension approaches and methods for a new development paradigm? and 2) How much potential does Participatory Rural Appraisal (PRA) have for moving the extension profession towards a development paradigm that embraces learning rather than teaching processes?

**Rethinking Extension: Where are we now?**

After a century of practice in the field of agricultural extension and development, it is time to reflect upon past approaches and practices and explore new ones. However, this should be analyzed in the context of an emerging development paradigm that emphasizes participatory learning processes and sustainable development. Agricultural extension plays a crucial role in the field of development because most developing countries have rural based economies whose sustainability and productivity are directly linked to natural resources and their management. The traditional roles of transferring and disseminating agricultural technologies are proving insufficient in today's global context. Particularly in the last ten years, both development and extension programs have been subject to scrutiny and questioning both within and without the field, in part because there has been a significant change in rhetoric but little change in the practice of rural development (Chambers, 1994a, Roling & Pretty, 1997).

Extension has diverse definitions but can be summarized as a field where agricultural professionals play a role in identifying, adapting, and sharing technology that is appropriate to the needs of individual farmers within diverse agro-ecological and socioeconomic contexts (Landon Lane & Powell, 1996). In the 1950s and 1960s, it was assumed that farmers were not as knowledgeable as educated agricultural extensionists about necessary changes for improving their farming practices. Programs were established based on recommended technology packages, without farmer input (Landon Lane & Powell, 1996; Chambers, 1993). In the 1970s and 1980s, new hybrids and genotypes were introduced across agro-ecological and socioeconomic conditions in an attempt to remove farm-level constraints and increase production through widespread adoption of the packages developed by outside agents. The environmental and socio-economic repercussions of this decade, known as the ‘green revolution’, brought the need for increased farmer input to the forefront of development and extension discussions. The participation of farmers in the extension process began to change in the mid-1980s with the new
approach Farming Systems Research and Extension (FSR/E). FSR/E contributed to widespread understanding that farming systems are complex, that farm-level constraints do limit adoption, and that the role of the farmer is key (Hildebrand, 1986; Landon Lane & Powell, 1996; Cornwall, 1993). Despite the acceptance generated by FSR/E that farmers should participate in identifying both their needs and solutions, extension methodology has long been grounded in the diffusion model of agricultural development set in a context where professionals were viewed as the experts with answers. This resulted in an extension tradition in which technologies are passed from research scientists via extensionists to farmers (Roling & Pretty, 1997; Cornwall, 1993; Rogers, 1983).

While paradigm shifts, particularly those involving changes in underlying values come slowly, experiences in agricultural extension and development have demonstrated that traditional approaches will need to change in order to move towards sustainability. A participatory learning process needs to be incorporated where farmers and other development beneficiaries have real decision-making power and are part of the problem analysis and solution generation (den Biggler, 1991; Elliot & Martin, 1995; Picciotto, 1995; Roling & Pretty, 1997). Extension will need to involve farmers themselves in the process of research and development in such a way that their participation is highly interactive and empowering. This implies changes in values, attitudes, and behavior in order to ensure that significant learning takes place among all actors: researchers, extensionists, and farmers (Roling & Pretty, 1997).

Roling and Pretty (1997) identify three major lessons to be learned for extension from past experience: a) demonstrate the feasibility of sustainable practices through increased visibility and giving farmers the necessary tools for monitoring their own farm situation, b) utilize farmers’ knowledge for location-specific sustainable agriculture, and c) facilitate learning processes, instead of “transferring” technology (Roling & Pretty, 1997). In the 1990s, development programs worldwide have recognized that local participation is the key to the sustainable transfer and long-term adoption of new technologies and approaches. Interactive participation is the approach that facilitates this kind of learning environment (Chambers, 1993; Pretty & Chambers, 1993; Adhikary, 1994; Ameur, 1994; Landon Lane & Powell, 1996; Pretty & Vodouhe, 1997).

An Emerging Learning Paradigm for Agricultural Extension

The “sustainability” question is greatly affected by extension programs because environmental issues emerge directly from human use of natural resources. A necessary condition for sustainable resource use is that large numbers of farming households must be motivated and willing to coordinate resource management. Collective decision-making represents a challenge for most communities and makes the extensionists' task more challenging because their role moves beyond analyzing farm level change to community level change. Facilitating group analysis and collective management requires new extension skills and tools. An approach that incorporates sustainability as a central principle therefore requires new ways of motivating collective action and learning, in addition to the skills and tools for working with individuals (Roling & Pretty, 1997).

Teaching has long been the normal mode of educational programs and institutions where agricultural extension skills are learned, one which emphasizes the transfer of knowledge from one whom “knows” to someone who presumably does not “know.” Universities and agricultural training institutions reinforce this teaching paradigm by promoting themselves as the custodians of knowledge and students and/or farmers the recipients of that knowledge. This kind of teaching threatens improved extension approaches because sustainable agriculture requires farmers, and future extensionists, to observe, anticipate, and intervene in a constantly changing natural system (Roling & Pretty, 1997). Extension for sustainable agriculture systems must therefore emphasize helping individual farmers critically assess their situations and promote local cooperation and coordination of common resources. In order to move from a teaching paradigm towards a learning paradigm, highly participatory interaction and knowledge sharing among all actors is critical for extension institutions both in applied extension programs and at teaching institutions (Roling & Pretty, 1997).
The Importance of Interactive Participation

An increasing number of project analyses have shown that participation by local people is one of the critical components of success in agriculture, irrigation, livestock, and water projects (Reij, 1988; Cernea & International Bank for Reconstruction and Development., 1991; Uphoff, 1992; Narayan, 1993; World Bank, 1994; Pretty et al., 1995; Pretty & Vodouhe, 1997). To illustrate, one major study of 121 rural water supply projects in 49 countries of Africa, Asia, and Latin America revealed that participation was the significant factor contributing to project effectiveness (Narayan, 1993). As a result, the term “participation” has now become part of the normal language of many development agencies, but the level of participation varies greatly (Reij, 1988; Bunch, 1991; Kerr, 1994). Seven categories describing participation in projects, from least to most participatory, have been developed (Pretty & Vodouhe, 1997; PLA Notes 31, 1998):

1. **Passive participation**, where locals are told what is going to happen and are involved because they are being informed of the process.

2. **Information giving**, where locals answer questions to pre-formulated questionnaires or research questions and do not influence the formulation or interpretation of the questions.

3. **Consultation**, where locals are consulted by external agents who may define both problems and solutions according to responses, but are under no obligation to do so, or share in decision making.

4. **Material Incentive**, where locals provide resources, such as labor or land, in return for other material incentives. Locals often do not have a stake in continuing activities once the incentives end.

5. **Functional participation**, where locals form groups, usually initiated by and dependent on external facilitators, participate in project implementation. These groups are usually formed after major decisions have been made, but may become self-dependent.

6. **Interactive participation**, where locals participate in joint analysis that leads to action plans and the formation of new local institutions or the strengthening of existing ones. The groups take control over local decisions and have a stake in maintaining the structures or practices developed.

7. **Self-Mobilization**, where locals take initiative independent of external institutions and may develop contacts with external institutions for resources and technical advice, but retain control over how resources are used.

Project effectiveness, usually measured by project sustainability, completion of project goals, and meeting needs of the local people, occur when people are involved in decision making during all stages of the project and the participation is interactive. The challenge is to find practical and applicable methods when working with communities that help move extension towards interactive participation. There are diverse participatory methods in use today, and they share certain assumptions. They assume cumulative learning by all participants, seek diversity in multiple perspectives, and appreciate that different individuals and groups make for different evaluations of situations. They assume a learning process best revealed through group inquiry and sharing and flexibility adaptable to site-specific socioeconomic and ecological conditions. The role of the professional in participatory methodologies is best thought of as being a facilitator helping people to carry out their own study. The interaction between professionals and diverse groups of local people creates a learning process that leads to increased consensus on directions for change, thus making the change more sustainable. In short, the sustainability and process-learning paradigm that agricultural extension is moving towards cannot be implemented successfully without the tools that facilitate a process where all participants are involved in a continuing process of participatory sharing and learning (Roling & Pretty, 1997; Pretty & Vodouhe, 1997).
Using Participatory/Rapid Rural Appraisal as a Learning Paradigm

Among emerging participatory methods, an important part has been played by two closely related families of approaches and methods, referred to as Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA). RRA was developed and spread in the 1980s, and its further evolution in the early 1990s developed into PRA. PRA is described as “a growing family of approaches and methods to enable local people to share, enhance and analyze their knowledge of life and conditions, to plan and to act (Chambers, 1994a, p.953)”. Practiced in over 130 countries, PRA is one of the better known approaches that is addressing the need for reform in extension by providing the tools to agricultural professionals necessary for working within a learning paradigm of extension (PLA Notes 31, 1998). It is therefore important to review the role PRA has played in the last decade and analyze the potential it has for agricultural extension and development in the future.

As a concept, the participation of local people has had a long history in rural development and agricultural extension. However, not until the early 1990s have numerous innovations incorporated participatory techniques into project design, implementation, monitoring, and evaluation of extension and educational programs. PRA traces its origins primarily from five fields or traditions (Chambers 1994a; Pretty et al, 1995): a) activist participatory research, inspired by Paulo Freire (1968) to use dialogue and joint research to increase people’s awareness and self confidence to empower themselves and take action; b) agro-ecosystem analysis, developed by Gordon Conway and colleagues (Conway 1987), is an approach that combines systems thinking and ecological concepts, using techniques in mapping, diagramming, scoring, ranking and transects; c) applied anthropology, branching off of social anthropology in the 1980s and going beyond observation to becoming involved in cultures, helped development professions to appreciate the depth, richness and validity of people’s perceptions, as well as emphasize the importance of spending significant time with people; d) field research on farming systems represent two branches that demonstrated the ability of small farmers to analyze and experiment on their own farms; and e) RRA. Of these five, the most recent and direct source of PRA is RRA, an approach that emerged in the 1970s as an attempt to find better ways to learn about rural life and conditions in different countries. The development of RRA, in particular, was catalyzed by a dissatisfaction with the biases produced by “rural development tourism,” (Chambers, 1994a), a term used to describe the brief rural visit by outsider development professionals that holds biases, which combined, hide the worst conditions of communities. Professionals had also become disillusioned with conventional methodologies that relied too heavily on questionnaire surveys, usually formulated by outsiders, to gather information because they tended to be drawn-out, tedious, difficult to process, and too often failed to obtain accurate, reliable data. RRA came about from the search, by field practitioners, for ways that would enable outsiders to gain accurate and reliable insight and information about rural people and conditions in a cost-effective and timely manner (Pretty et al, 1995). Each of these fields contributed to the emergence of PRA and aspects of what today is considered the family of Participatory Learning and Action (PLA) because they have put participation, action research, and adult education at the forefront of development approaches whose purpose is to empower people to make beneficial changes in their lives (PLA Notes 31, 1998). The following table shows basic differences between RRA and PRA in use today.
### Table 1

Comparing RRA and PRA along a Continuum

<table>
<thead>
<tr>
<th>RRA</th>
<th>Objective</th>
<th>PRA</th>
</tr>
</thead>
<tbody>
<tr>
<td>To obtain valid information that reflects the complexity and richness of local knowledge</td>
<td>To strengthen local capacity for analyzing and resolving problems</td>
<td></td>
</tr>
<tr>
<td>Outside facilitators work with local community members/groups</td>
<td>Who does it?</td>
<td>A group of local people that may or many not include outside facilitators</td>
</tr>
<tr>
<td>Generates information that is used by outsiders and left with the community</td>
<td>Result</td>
<td>Builds local capacity, assessment and planning skills, and sometimes results in collaborations between the community and outside programs</td>
</tr>
<tr>
<td>Through studies ranging from 5 days to one month</td>
<td>Process</td>
<td>Through extended time, that may take from months to years</td>
</tr>
<tr>
<td>The validity of the information and capturing the richness and complexity of local situations</td>
<td>Focus</td>
<td>Communities that take more control over their own development process with time</td>
</tr>
</tbody>
</table>

Participatory Tools and Techniques are Common to both RRA and PRA

The primary distinction between RRA and PRA is that RRA is intended for learning by outsiders to gather information from local people’s knowledge, while the basic purpose of PRA is the empowerment of local people by facilitating their analytical, planning and evaluation abilities. PRA is a process that takes place over time, usually beginning as RRA and developing on a continuum into a process led primarily by local people. True PRA implies significant personal and institutional change and more often than not, particularly as "participatory" rhetoric has become fashionable, institutions will tend to claim PRA approaches when their approach remains largely unchanged.

Much of the spread of PRA has taken place laterally in the southern hemisphere among developing countries (South-South), particularly between countries in Africa and Southeast Asia, through the sharing of field experiences, conferences, and training by international and local organizations, most of them non-governmental (Chambers, 1994a). Only recently has the spread become South-North as northern based universities and institutions are increasingly recognizing the potential of PRA and its contribution to development theory and applications.

Effective PRA/RRA requires that practitioners follow basic principles. Chambers (1994b) describes the principles shared by both RRA and PRA:

1. **A reversal of learning** where professionals learn from local people’s physical, technical and social knowledge, directly, on site, and face to face;

2. **Learning rapidly and progressively**, with conscious exploration, flexible use of methods, improvisation, cross-checking, and adaptability in the learning process rather than following a blueprint;

3. **Offsetting biases** by being relaxed, not rushing, listening and not lecturing, probing topics rather than moving to the next, being unimposing instead of important, seeking out the poorer people, and learning diverse concerns and priorities;

4. **Optimizing tradeoffs**, relating the costs of learning to the usefulness of the information and making tradeoffs between the quantity, relevance, accuracy, and timeliness. Optimizing tradeoffs also includes the principal of optimal ignorance – knowing what is not worth knowing, and of appropriate imprecision.
– not measuring more accurately than what is needed because it is better to be approximately right than precisely wrong;

5. **Seeking diversity**, meaning seeking variability rather than averages and maximizing the diversity and richness of information (Beebe, 1987; Dunn & McMillan, 1991); and

6. **Triangulating**, meaning the process of cross-checking and progressive learning and approximation through plural investigation, which involves assessing and comparing findings from several methods, sets of condition, points in a range or distribution, individuals or groups of analysis, places, times, disciplines, investigators and/or a combination of these.

The more developed and tested PRA methods include participatory mapping and modeling, visualizing where people live and work, and the location of important local resources, their uses, potential, and associated problems; transect walks; institutional diagramming; analytical and flow diagrams to indicate linkages, sequences, causes, effects, problems and solutions; seasonal calendars showing how food availability, workloads, family health, prices, wages and other factors vary during the year; trend and change analysis; and matrix scoring, scored with seeds, pebbles or other counters, to compare things, such as the merits of different crop varieties or tree species, or how conditions have changed over time (Chambers, 1994a).

PRA, like all methodology used for research has a theoretical base and requirements for showing its accuracy. As a research methodology, PRA would be considered one approach within the framework of Participatory Action Research. The following table summarizes the major focuses of these approaches.

PRA uses qualitative research methods and proves its trustworthiness by the same criteria developed by Lincoln and Guba (1985) to demonstrate rigor and accuracy, with some additional criteria unique to PRA. The following key criteria for judging trustworthiness are adapted from Lincoln & Guba (1985), including explanations on those criteria most important for researchers using PRA (adapted from Petty et al., 1995):

Table 2

<table>
<thead>
<tr>
<th>Item</th>
<th>Critical Theory</th>
<th>PRA as Action Research</th>
<th>Constructivism</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ontology</strong></td>
<td>Historical realism, reality shaped by social, political, cultural, economic, ethnic, gender values, made real over time</td>
<td>Relativism/ Reality shaped by social, political, cultural, economic, ethnic, gender values, but able to be changed through empowerment</td>
<td>Relativism, local and specific constructed realities</td>
</tr>
<tr>
<td><strong>Epistemology</strong></td>
<td>Transactional/ subjectivist; value-mediated findings</td>
<td>Transactional/ subjectivist; value-mediated findings</td>
<td>Transactional/ subjectivist; created findings</td>
</tr>
<tr>
<td><strong>Methodology</strong></td>
<td>Dialogic/ dialectical</td>
<td>Dialectical</td>
<td>Hermeneutical/ dialectical</td>
</tr>
</tbody>
</table>
• Prolonged and/or intense engagement between the various (groups of) people for building trust and rapport, and learning the context.

• Persistent and parallel observation.

• Triangulation by multiple sources, methods and investigators for cross-checking information and increasing the range of different people’s realities encountered, including multiple copies of sources of information, comparing results from a range of methods and having teams with diversity of personal, professional and disciplinary backgrounds.

• Expression and analysis of difference for ensuring that a wide range of different actors are involved in the analysis and that their perspectives are accurately represented, including differences according to gender, age, ethnicity, religion, and class.

• Negative case analysis.

• Peer or Colleague Checking.

• Participant checking for testing the data, interpretations, and conclusions with people with whom the original information was constructed and analyzed. Without participant checks, investigators can make no claims that they are representing participants’ views.

• Reports with working hypothesis, contextual descriptions and visualizations. These are ‘thick’ descriptions of complex realities.

• Parallel investigations and team communications, if sub-groups of the same team proceed with investigation sin parallel using the same approach and come up with similar findings, these finding are more trustworthy.

• Reflexive journals are diaries that individuals keep on a daily basis to record a variety of information about themselves.

• Inquiry Audit.

• Impact on Stakeholders capacity to know and act, for demonstrating that the investigation or study has had an impact, for example if participants are made more aware of their own realities as well as that of other people.

RRA approaches and methods have been used for appraisal, analysis, and research in many subject areas over the last 20 years, including agroecosystems, natural resources, irrigation, technology and innovation, health and nutrition, farming systems research and extension, pastoralism, marketing, disaster relief, and organizational assessment. PRA has evolved and spread so recently and quickly that cases are only recently being researched and documented. In agricultural related topics PRA cases have been applied in farmer participatory research/farming systems research, problem identification and analysis by farmers, livestock and animal husbandry, investigation of markets and small-holder marketing potentials, participatory watershed planning and management, and village resource management plans (See references by topic for an short inventory of documented cases using RRA and PRA in agricultural topics). PRA helps organizations understand local priorities and gives space for locals to make decisions about project implementation, at the assessment, monitoring and evaluation stages. For example, CARE has changed priorities in water security, small dam construction, reservoirs and irrigation in Zimbabwe based on PRA work with local beneficiaries where the people analyzed the project and made decisions about water security priorities (Harmmeijer, 1999). PRA was used as a bridge between research and development in the decentralization of the Gambia, for regional planning strategies (Truelove, 1998). An example how PRA can be used in evaluation can be demonstrated by the successful results of a field-test in Mexico where PRA was used for systematically measuring and assessing the impact of village development programs, called the Twenty Points of Progress Program (20PPP) (Woller & Mayfield, 1999).

PRA techniques push experts to see local knowledge in a new light and to really listen. Bud Hall commented at a recent PRA
conference that “in order to be successful agents of change in the present and future, we need to learn how to really listen to each other (PLA Notes 36, p. 42).” Cases have shown that after traditional extensionists first experiences with PRA they begin to see things in a new light and change their approach, rather than going through the motions of seeking participation without truly listening and learning from others (Toness, 2000). Reviewing the cases, one clear strength that stands out as a potential for agricultural extension lies in its diversity. There is a set of processes and a tool box of techniques, but no blueprint. PRA was developed in rural areas, but due to its wide applicability across topical areas, has spread to all natural resource management-related topics, health, education, youth, and even urban settings for analyzing and acting upon issues in migration, and urban poverty.

Despite numerous example of the effective use of PRA, the application and institutionalization of PRA in agricultural extension programs is still scarce. While many NGOs have institutionalized PRA methods, the only extension agencies documented that have officially adopted a PRA approach are the Soil and Water Conservation Branch of the Ministry of Agriculture in Kenya, the District Rural Development Agencies, Andhra Pradesh, India, and the Forest Departments of several Indian states (Chambers, 1994a). In the first years of PRA, academic researchers were slow to recognize the potential and spread of PRA and in the United States there are less than a handful of universities that offer courses or training in PRA (Chambers, 1994a; Chambers, 1994b).

Since many processes in PRA methodology are still in their early stages experienced trainers and practitioners have been mostly engaged in field-based training and appraisal rather than monitoring and evaluation, research, or training in institutions. Therefore, there are few documented evaluations of the impact of PRA as an extension method in the agricultural development. The most systematic evaluation and analysis of the impact of PRA, compared with alternatives, has been a participatory study conducted in Kenya in April-May 1993, in which six areas of a soil and water conservation program were studied. The study showed that performance indicators had been worst where the approach had not been participatory and were generally higher where catchment committees were freely elected and the highest where farmers had participated in planning and layout due to initiating the project site with PRA (Pretty & Thompson, 1993). Another case, an ex-post-study conducted between 6 months and 3 years after a series of PRA training (1993-1996) of 98 GTZ, a German development organization, staff participants showed the effectiveness of both the PRA training and PRA’s implementation in the field. Ninety-seven percent of the staff trained recommended the approach and methods to colleagues both within GTZ and elsewhere. Eighty-two percent saw tangible improvements in 32 projects after the training, particularly in self-organization and planning by the target beneficiaries, and the relationship between them and the extension officers (Gassner-Keita & Forster, 1999).

Despite scarce research on PRA, the rate of adoption and reports of practical use and evaluation indicate great potential for using PRA to improve extension and move the field closer to the development paradigm and strategies needed today. The number of countries in which PRA is strongly established is increasing and more universities and training institutions’ staff around the world are now using it.

After reviewing cases using PRA approaches and methods and reflecting upon its present range and versatility, it is evident that there are many actual and potential applications for agricultural extension and development. However, there is clearly a need to further research, apply, and evaluate PRA in the field of extension in order to understand its full impact and potential.

There are challenges and risks for practitioners using PRA. The spread of PRA and the widespread and sometimes careless use of the term “participation” are among those. Most importantly, negative repercussions can occur when extension professions learn to apply PRA through short training courses with little follow-up. PRA is a methodology lifts people’s expectations and begins a process of empowerment and knowledge sharing, that, if practiced without the corresponding commitment by institutions and professionals to share in decision-making, can create a backlash and disappointment among those meant to be
benefited (Toness, 2000). In a recent conference on PRA (Deepening our understanding and practice: A conference on participatory development and beyond, August 25-27, 1999, Ottawa, Canada), over 425 participants from 48 countries summarized that “there is a need to practice our practice ethically as the danger of abusing participatory development processes is eminent especially when everyone is becoming an ‘expert’. This may be due to the popularity of PD approaches and the ‘interest’ shown by donors in them. [For the future] there is a need for Universities and NGOs/ institutions to network closely and not perceive each other as rivalry. There is also a need to have sustainable institutions if participatory approaches are to be sustained, institutionalized, and internalized” (PLA Notes 36, 1999, p. 46)

**Conclusion**

There were two questions raised that are addressed in this paper: 1) What are the main directions of reform in international agricultural extension approaches and methods for a new development paradigm? and 2) How much potential does PRA have for moving the extension profession towards a development paradigm that embraces learning rather than teaching processes?

A review of literature and case studies show that the main direction of reform in international agricultural extension and development is towards a learning rather than teaching paradigm and towards the incorporation of new methodology and approaches that increase the real, interactive participation of local people in all levels of decision making. These methods require that the roles of researcher, extensionist, and local people be shared. Of these new participatory methods, PRA has great potential for moving the extension profession towards a development paradigm that embraces learning rather than teaching processes due to its versatility and wide applicability. Case studies using PRA methods and approaches for development and extension processes indicate that PRA is an innovative, rich, flexible, effective, valid, participatory, and quickly spreading set of approaches and methods. In part PRA’s potential is due to the nature of the PRA process itself, which increases awareness between all participants of each person’s unique knowledge and contributes to “laying the playing field” between outside professionals and local expertise.

University, governmental, and non-governmental staff working in agricultural extension and development should begin integrating these tools, particularly as they strive to meet the challenge of a new development paradigm that emphasizes sustainability and new learning processes similar to those of PRA. The following are four recommendations for incorporating PRA and other participatory methods into agricultural extension:

- Teaching PRA philosophy and tools as an extension approach in Agricultural Extension programs at the University level in order that professionals enter the field with a greater understanding of the underlying principles and applicability of the methods.
- Promoting research on PRA, its impact, effectiveness, diversity, use, and applicability, in order to gain greater insight and knowledge about participatory methods.
- Incorporating PRA methodology into courses on Critical Inquiry, Qualitative Research Methodology, and Action Research in order to bring these courses up to date on present applications and emerging methodologies in the field of research and development.
- Creating pilot projects in existing or new agricultural extension programs to test PRA and other participatory methods in diverse settings.
- Creating awareness of the risks involved in using PRA, making conscientious decisions about how and when to train and utilize PRA, and constantly asking ourselves the questions: Participation for whom? Why? And What are the unintended consequences?
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**Participatory watershed planning and management**


**Village plans and preparing village resource management plans**

