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Participation and sustainable agriculture: Comparing experiences with PRA and PTD

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INTRODUCTION

Debates surrounding sustainable agriculture have generated widespread acceptance of the importance of close collaboration between farmers and research and extension professionals (Biggs, 1989; Okali et al, 1994; Scoones and Thompson, 1994; Reijntjes et al, 1992; Chambers et al, 1989; van Veldhuizen et al 1997). Since the late 1970s, this basic principle has given rise to many participatory approaches to agricultural research and development (see Box 1). While initially providing much-needed innovation, practitioners have become increasingly confused and critical about the mushrooming numbers of approaches claiming validity through 'participation'. Which of these approaches is appropriate in which situation? What are the main differences and limitations? Is there one that is the 'best' all round? Each new acronym appears to belong to an institution, thus creating an image of uniqueness and rivalry. Yet most participatory approaches share common principles.

This paper aims to assess the relative strengths, limitations, and complementarities of two approaches that have become particularly widespread: Participatory Rural Appraisal (PRA) and Participatory Technology Development (PTD). As they are among the most widely known and applied of the participatory approaches within the agricultural sector, it is important to review past experiences and highlight - for practitioners - the respective roles these approaches can play in their work. In so doing, we hope to identify their complementarity and to highlight areas of improvement.

We start by describing the context for participatory development in agriculture and its core principle, that of participation. We then explore briefly the origins and methodology of PRA and PTD in turn, discussing in more detail the applications and limitations of each approach. Finally we attempt a comparison between them, and in so doing, clarify the potential for using one or both methodologies.

DIVERSITY IN PARTICIPATION

Agricultural professionals and institutions are increasingly appreciating the essentially social nature of agricultural development. No longer are agricultural interventions automatically assumed to be discrete events that can be neatly fenced-in and isolated from the wider context. Continuous innovation is the core 'business' - and requires continual interactions between farmers and development professionals. These interactions are based on mutual curiosity, negotiation of roles and values, co-operation in practice and analysis, and compromise in priorities (Scoones and Thompson 1994). For agricultural development to be productive and equitable, the actors must be able to analyse social - and not only biophysical - issues in detail and to negotiate priorities for action between those involved.

Basing agricultural development on some form of partnership between farmers, researchers, and extensionists makes the concept of 'participation' critical. Both PRA and PTD make claims to developing partnerships, albeit in different ways and have, at times, contested each other's approach on grounds of 'sloppy' participation, amongst other issues. As the principle of 'participation' is central to the approaches being compared in this paper, it will be discussed in some detail.

Participation is not unique, however, to these two approaches. The enthusiasm for 'people's participation' in development is matched by wide ranging interpretations (see Box 1). This diversity is now a source of some confusion - and scepticism[1] - amongst many development professionals.

In many cases, local participation is often limited to providing information to researchers and extension agents, whose analysis generates solutions which farmers are expected to approve and apply. But other participatory approaches have brought more radical changes to agricultural research and extension by focusing on empowerment and adult learning. Many of these approaches have drawn on techniques developed over a four decade period of community development. Paradoxically, however, only few now deal in depth with the political, personal and institutional challenges of a 'deep and wide' participatory process (Booth 1995; Cornwall et al 1993).

[1] Some critical practitioners have likened participation to a Trojan horse that can hide manipulation and even coercion of local people under a cloak of social palatability (Slocum and Thomas-Slayter, 1995).

Recent critical debate about participation - what it is and isn't, what it should and could be - has helped greatly in breaking down the simplicity that often accompanies its use as a synonym for 'good development' or, more dubiously yet, 'equitable benefits'. Many typologies of participation have sprouted in the past 5 years (see Table 1). These have helped practitioners to identify where they are placed and offer glimpses of more participatory alternatives that they might wish to strive towards. For example, researchers attached to the Conservation Tillage project in Zimbabwe moved between 1991 and 1994 from setting-up pre-designed trials at selected farms towards close collaboration with a number of farmer groups in supporting trials designed by the farmers themselves. The interaction with an NGO working in the same area helped the researchers to make this shift (Hagmann J et al, 1997).

Box 1. Participatory Methodologies used in Agricultural Research and Extension (developed since the 1970s; in alphabetical order)

Agroecosystems Analysis (AEA), Beneficiary Assessment, Citizen Juries, Community Indicators, Development Education Leadership Teams (DELTA), Diagnosis and Design (D & D), Diagnóstico Rural Participativo de Agroecosistema (DRPA), Farmer Participatory Research, Future Search, Groupe de Recherche et d'Appui pour l'Auto-Promotion Paysanne (GRAAP), Méthodes Actives de Recherche Participative (MARP), Participatory Analysis and Learning Methods (PALM), Participatory Action Research (PAR), Participatory Innovation Development and Diffusion (PIDD), Participatory Research Methodology (PRM), Participatory Rural Appraisal (PRA), Participatory Rural Appraisal and Planning (PRAP), Participatory Technology Development (PTD), Planning for Real, Process Documentation, Rapid Appraisal (RA), Rapid Assessment of Agricultural Knowledge Systems (RAAKS), Rapid Assessment Techniques (RAT), Rapid Catchment Analysis (RCA), Rapid Food Security Assessment (RFSA), Rapid Multi-perspective Appraisal (RMA), Rapid Organisational Assessment (ROA), Rapid Rural Appraisal (RRA), Samuhik Brahman (Joint trek), Soft Systems Methodology (SSM), Technology of Participation (ToP), Theatre for Development, Training for Transformation, and Visualisation in Participatory Programmes (VIPP).

Table 1. The Basis of Some Participation Typologies[2]

Author and year	Number of levels	Basis for distinguishing levels of participation
Arnstein 1969	8	degree of citizen control over an initiative
Paul 1986	4	role of beneficiaries (share information, are consulted, make decisions, initiate action)
Biggs 1989	4	relationship between researchers and farmers (contractual, consultative, collaborative, supporting farmers' research)
Adnan et al 1992	11	increasing degree of people's control over information and initiatives (4 describing 'information processes', 5 related to 'projects'; 2 related to 'people's initiatives')
Guijt 1991	4	local people's involvement in key project stages
Hart 1992	7	based on who is driving the development initiative (from external manipulation to fully locally-driven)
Farrington and Bebbington 1994	4	2 levels of power (shallow vs deep); 2 describing scope of interaction (wide vs narrow range of activities)
Cornwall 1995	7	shifting of control over decisions from outsiders to local people
Stiefel and Wolfe 1994	11	distinguished by political usage of the term, eg to improve project efficiency, trade unionism, democratic movements
Selener 1997	4	thematic: community development, action research in organisations, education, farmer participatory research

These typologies, while revealing and inspiring, need to be used with some caution as they perpetuate simplifications about agricultural change in several ways (Guijt, 1997):

1. *Wrong assumption of a static picture*. By classifying an agricultural project as embodying a certain 'type' of participation, ignores the changes that will occur as the intervention develops. Women and men farmers participate in different ways at different moments, as do the better off and the worse off, and researchers and farmers.

2. *Simplifying difference in terms of 'insider and outsider'*. Most typologies describe a sliding scale of shifting responsibility between insiders, or farmers, and outsiders, or agricultural professionals. Viewing all farmers as 'insiders'

[2] It is clear that the basis of these typologies differs greatly, with the number of levels of participation not always referring to different qualities of participation. Selener's four types for example, do not discuss the quality of participation and remain descriptive, while Cornwall's typology is normative, with each level indicating a certain quality of participation that is linked to the increasing amounts of local power.

ignores community-level differences, thus hiding the reality of high levels of participation by some farmers and none by others. Similar problems occur with stereotyping 'outsiders' in this way.

3. *Normative assumption of an 'ideal' form of participation*, implying that there is a pathway or continuum across which development interventions can and should move towards a state of absolute and enduring 'local participation'. Yet the feasibility and desirability - for farmers and agricultural professionals alike - of 100% local participation is very questionable.

4. *Simplifying diversity and hindering innovation.* By simplifying complex interaction processes in terms of a participation 'thermometer', a prescriptive use of the typologies can be stimulated which can hinder innovation. What is more important than finding one's place in one or the other typology is describing how farmers and professionals wish to work together, why this is the case, and how it is evolving. In this context, it is also important to stress that only a few of the forms of participation in these diverse typologies are actually useful for those aiming to build farmers' capacity through participatory agricultural development.

Despite such limitations, though, these typologies serve a critical function - that of highlighting the diversity amongst participatory approaches and the strength this offers for encouraging change in agricultural research and extension. Furthermore, notwithstanding the uniqueness of the approaches and the varying degrees of farmer participation they imply, key important principles unite them. Notably, they all - in some form - seek to construct a process of collective and ongoing learning and action (see 'Shared Principles' below). Hence their attraction to those engaged with sustainable agriculture, with all its uncertainties and complexities, that is only possible when a range of stakeholders are involved in ongoing innovation and information exchange.

This discussion on participation is central to understanding PTD and PRA as both occur today in so many versions, that simply referring to the acronym will not help to understand the contribution of each group at different stages. It is our experience that both PTD and PRA have, in principle, intended the process to be based on a form of participation that is best described as 'conducting joint analysis and making decisions' or researchers facilitating farmers' own research processes. It is to these principles that we now turn.

SHARED PRINCIPLES[3]

Principle 1. A Sustained Learning Process. Participatory approaches arose initially out of an acceptance by some agricultural professionals that their insight into local processes of analysis, decision-making, and innovation was limited. These professionals saw the need to understand better the social dynamics of agricultural development and to facilitate the sharing of knowledge. For PRA, the focus has been on offering a wide group of people - often but not exclusively farmers - a process for analysing their circumstances and assessing and selecting strategies for action. For PTD, the focus has been less perhaps on the quantity or range of local people, but rather on building a process of collective agricultural research and extension around farmers' experiences and needs. In both cases, enhancing cumulative learning by participants is the focus. The process of learning and action has three outputs: identifying strategies for improvement, motivating people to undertake these strategies and enhancing their capacity for solving problems

Principle 2. Different Perspectives in Group-based Analysis. To learn well and plan effectively at a collective level - be it a farmer experimentation group or the wider community - needs a diversity of perspectives. Most participatory approaches explicitly seek insights from and needs of different individuals and groups, which may be conflicting. Furthermore, all participatory approaches recognise that the complexity of local situations will only be revealed through group analysis and action that can complement individual perspectives and needs.

Principle 3. Key Role for Facilitators. To seek out different perspectives, often those of the socially marginalised, usually means challenging to some extent local traditions of communication and social interaction. Furthermore, creating an environment in which different people can share their ideas, knowledge and needs, requires the sensitive support of a facilitator. This is often someone from outside the community or area but is increasingly a role taken on by someone with a local stake in the process.

Principle 4. Systemic and Methodological Basis. The facilitator is trained to create a structured process that looks at the problems being encountered from a systemic perspective, and not just focusing on a narrow slice of reality. Thus, PRA and PTD alike aim to follow certain steps from description to

[3] These principles draw on Pretty et al, 1995.

analysis and action, and by looking at agriculture within the context of wider development issues and needs.

Principle 5. Context-specific. Inevitably, the uniqueness of social and physical conditions means participatory approaches emphasise flexibility in application. Participation requires building a process of discussion, communication and conflict resolution - which by necessity evolves out of the specifics of the local context. Although methods might be similar from one situation to the next, the particular combination and sequence is not fixed. There is no set procedure to follow mechanically that can give a guaranteed outcome.

Within this wider debate concerning 'participatory development' and its underlying principles can be found PRA and PTD. These two approaches will now be described in more detail before comparing and contrasting what they have to offer agricultural development professionals.

PARTICIPATORY RURAL APPRAISAL

With the realisation that conventional methods of field appraisal and surveys based on questionnaires tended to overlook poorer farmers with their specific problems, came methodological innovation. PRA developed out of many experiences, initially those known as Rapid Rural Appraisal (RRA) which evolved in the late 1970s and 1980s (Khon Kaen University, 1987). RRA became an alternative approach to analysing rural life and agricultural systems. It aimed to overcome the problems of generating much detailed data that were often of dubious quality due to non-sampling errors and obsolete by the time they were analysed. By emphasising local 'approximate ignorance' and 'appropriate imprecision', RRA explicitly made trade-offs between the quantity, accuracy, relevance, and timeliness of information collected and analysed. Agroecosystem analysis contributed much methodological innovation with its focus on visual analysis of patterns in space, over time, of resource flows, and of decision-making (Conway 1985).

In 1988, the term Participatory Rural Appraisal (PRA[4]) was first applied: in Kenya through the collaborative efforts of the National Environment

[4] RRA is still used as an effective information-gathering approach for external professionals to learn about local people and conditions. Such information is an important input into planning that happens above the local level - such as setting national agricultural research agendas - and when there is no time to engage in the more lengthy dialogue processes of PRA. Participatory methods, like participatory mapping, can be used in an RRA study. PRA

Secretariat of the Ministry of Environment and Natural Resources and Clark University, USA, and in India through the work of the Aga Khan Rural Support Programme and the International Institute for Environment and Development (IIED) in London (McCracken 1988). In the early days, three institutions in particular were associated with PRA: the Institute of Development Studies (United Kingdom), IIED and Clark University. None of these organisations 'invented' PRA - they simply supported the dissemination of innovations and critical reflection on experiences. The source of innovation has been with staff of NGOs and some innovative government agencies, whose interaction with villagers and each other have encouraged improvisation and adaptation.

PRA has been defined as 'a growing family of approaches and methods to enable local people to share, enhance and analyse their knowledge of life and conditions, to plan and to act' (Chambers 1992). The most critical difference that PRA encourages was rethinking communication between development agents and local residents, and not just on the information that is generated by those involved. The main mechanism for this so far has been the use of visual diagrams that aim to encourage local people (rural or urban) to reflect in groups on local circumstances, in new ways that lead to action.

In the last few years, PRA has been applied in dozens of countries by thousands of organisations (Chambers, 1997). In virtually all cases, outside professionals initiated the use of PRA. For them, learning to see 'process' as one of the 'products' of PRA has often meant a strong reorientation of their original roles. They need to develop new skills and to view PRA-based development as taking place within a long time span - months or years and not weeks.

Methodology and Methods

The methodological basis of PRA centres around setting up a structured dialogue using a variety of methods (see Table 2) to share knowledge and analysis to develop practical actions. Recently greater emphasis has also been placed on

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generally serves a different audience by focusing on planning at a local level, that is sometimes - but not usually - aggregated into plans at higher levels. Maintaining a distinction between PRA and RRA is critical as each serves a different purpose and can be appropriate in different situations (Whiteside 1997).

helping external facilitators to question their assumptions about local people and to develop more listening-oriented attitudes and behaviour[5].

The many methods for which PRA is well known open up debate on local perceptions of problems and resource values, agricultural innovation and the complexities of social development and structures. The teamwork methods help ensure that those involved remain curious and critical, and share their insights and questions openly. Sampling methods facilitate the inclusion of different perspectives, although much more is needed to overcome biases of gender, age and socio-economic status (cf Guijt and Kaul Shah 1998). Dialogue and interviewing methods help to create opportunities for as many as possible to get involved in their own way and on their own terms. Visualisations methods aim to focus analysis around specific issues.

The visualisation methods serve to understand four key themes that are central to agricultural systems and change (Conway 1985). First, historical diagrams, seasonal calendars and daily activity diagrams help to understand *change over time*, from long-term trends to the seasonal dimensions of poverty, production and consumption, or daily activities. These discussions reveal the dynamics of rural livelihoods. *Changes in geographic space* are explored using transects, farm sketches, flow diagrams, and social/resource maps and models. The third category focuses on analysing *decision-making*. Matrix ranking and scoring, Venn and network diagrams draw out some of the complexities of decision-making which are rarely accessible through formal surveys and which enable researchers to appreciate farmers' differing needs and preferences. Matrices are particularly valuable for generating local criteria for selecting and evaluating particular crop varieties or technologies, or priority activities. The fourth theme that includes system and impact diagrams looks at *flows*, flows of resources and information, flows of cause and effect.

[5] There are many other principles that underpin successful use of the methods, such as clarity of objectives, critical reflection, and a sense of fun. But these are not embedded in the PRA approach (see 'Common Criticisms', below).

Table 2. PRA Methods for Agricultural Research and Development

Teamwork methods	Sampling methods	Discussion & interviewing methods	Visualisation methods
• team contracts • team reviews • peer assessments • interview guides and checklists • work sharing in local activities • local presentations • process notes and personal diaries	• transect walks • wealth ranking, well-being analysis • social maps • interview 'chains'	• semi-structured interviewing • direct observation • focus groups • key informants • ethnohistories and biographies • case studies	• participatory map/ model • social map and wealth ranking • seasonal calendar • daily routine • historical profile • trend analysis • matrix scoring • preference/pair-wise ranking • Venn diagrams • network diagrams • systems diagrams • impact diagrams • pie diagrams

It is not just the methods themselves but their combination and sequence that are particularly effective. For example, a set of resource models of a village, one of present conditions and one dating from a few decades earlier, can help to identify changes in land use patterns and practices, and their impact on land degradation. A third model of the possible future situation can be added to assess what might happen if certain actions are, or are not, taken. Transect routes can then be planned on the present model. This brings together local perceptions of spatial and temporal dimensions of land use change in a single analysis. Compare this process to a questionnaire survey, which must first analyse diverse perspectives before commencing the planning process. With PRA, these two stages are inter-linked - the iterative analysis leading to prioritising of action points and planning.

A growing number of cases from Africa and Asia that allow comparisons to be drawn indicate that participatory methods for local-level analysis and planning yield positive results that are largely verified by subsequent formal surveys (Gill, 1993; Chambers, 1992; Inglis, 1991; Rocheleau *et al.*, 1998). These comparisons show that little new or conflicting information was collected in

the formal surveys. PRA is thus well suited for situations in which resources are scarce and approximate results are acceptable.

Common Criticisms

However, these methods by no means guarantee participation and open dialogue (IIED 1995; Guijt and Kaul Shah 1998). The diagrams do not replace constructive debate - and in some cases can obstruct them (Sarin 1998). The paradox of participation becomes clear where large groups form to create diagrams or maps. While ostensibly encouraging a wider participation, most will remain on the margin and the most powerful will "participate"- not the poor and rarely the women and children who will watch rather than speak.

These and other criticisms (see below) have increased the use of combinations or merging of methodologies: *"...in some settings and for some purposes, conventional research and planning methods may be more appropriate than PRA. Asking PRA to fulfil every information and development need is asking for disappointment, as no [single] methodology is comprehensive"* (Abbot and Guijt 1997:27). PRA is, for example, generally not effective for examining institutional relationships and change, or scientifically acceptable statistical measurements. Participatory dialogue can benefit from the added insights provided by conventional surveys, trials, and measurement-based methodologies. Rather than being chosen on the basis of cost-effectiveness, PRA is now becoming more appreciated for the joint analysis function that it is suited to provoke. Yet, ironically, it is exactly in this area that criticism is also widespread.

PRA appears to answer a widely felt need that seems to know no boundaries of discipline or geography. But it is no quick fix to complex problems, despite what many may wish. Several incorrect assumptions about PRA have taken hold (see Box 2). Too much has been demanded - and promised - of PRA too fast, with little understanding of the implications of participatory development (Mosse 1995; Chambers and Guijt, 1995). Some have even deemed it the new 'tyranny', provoked in their criticism by the early promises and limited critical reflection by some practitioners.

Box 2. Seven Incorrect Assumptions about PRA (Inspired by Scoones 1995)

1. **Assuming it's quick.** While many methods associated with PRA may be quite quick at stimulating discussion and analysis, the processes of participatory development are slow and difficult. Fieldwork takes place over months not weeks, and organisations need to make commitments that stretch over years.

2. **Assuming it's easy and anyone can do it.** PRA methods are appealingly simple and widely applicable. Anyone can help make a map or do a matrix ranking but this does not mean that learning takes place or changes occur. Successful use requires many other skills, especially communication, facilitation, social analysis, and conflict negotiation.

3. **Assuming that methods alone are enough.** The popularity of visual methods is only part of a larger process of change that is taking place in many organisations and agencies. In particular, appreciation has grown for the need to learn and innovate, and to change management and reward systems, staff behaviour, ethics and responsibilities. This means large shifts in the procedures and incentives that drive agricultural research and extension institutions.

4. **Assuming it has no theoretical basis and is therefore superficial.** PRA has not grown out of university departments but from practical field experiences. PRA is based on an action-research approach, in which field workers challenge both theory and practice through experience and reflection. Agricultural and social science debates have been greatly influenced as a result.

5. **Assuming it is a new invention and that older approaches are no good.** PRA has been inspired from many areas such as anthropology to business management. Although ancient examples of participatory approaches exist, its recent widespread application and innovation show it is responding well to problems common to past approaches. Integrating new ideas into existing working approaches within agricultural and extension programmes is essential, as PRA will never be able to serve as a comprehensive methodology suited to all situations.

6. **Assuming that training will ensure its use.** 'New' ideas are often assumed to spread by training workshops. But inexperienced trainers who receive no follow-up support will not be able to make use of training nor know how best to apply it in the field. Organisations must provide support after workshops take place, in communities and within the organisation itself.

7. **Assuming that users can maintain political neutrality.** Farmers, researchers and field workers are never neutral. People's roles and their different position in a community need to be understood as this influences what information is shared and how it is analysed. In all participatory processes, conflicts, disputes and tensions will be raised. Agricultural researchers and extension agents should be ready to deal with these issues. This may mean taking sides or taking a mediating or negotiating role, which are all political acts.

Given the prevalence of these misconceptions, it is therefore no surprise that curious paradoxes exist in the practice of PRA (Guijt 1996). For example, while originally aiming to overcome the blue-print thinking of set procedures and to encourage creativity, a 'manual mania' has emerged that tries to capture the methodology in terms of indispensable methods, often without deepening the analytical framework. Also, while initially concerned with empowerment of marginalised groups, many practitioners who have been 'taught participation' through manuals, see participation instead as a mechanical approach that automatically leads to empowerment. Thus rigidity, little innovation, and lack of empowerment are curious features of some of today's 'participatory' approaches.

The manual and methods mania of PRA and its lack of analytical clarity have weakened its practice as many organisations focus only on participation during appraisal without ensuring collective planning in the longer term. Furthermore, a common criticism of PRA is the 'mounds of diagrams and information' that emerge from the visual methods and which are difficult to make sense of without a clear analytical framework. Some organisations using PRA are now articulating more clearly how the results of analysis and diagnosis can feed into subsequent stages of participatory development (see Box 3).

From the early days of PRA, critical voices have been raised about quality concerns - not least by PRA practitioners and trainers themselves (cf IIED 1994, 1995; 1997; Absalom et al 1994; Scoones and Thompson 1994; Guijt and Shah 1998). The main areas of criticism appear to be:

- ignoring personal responsibilities and professional ethics, such as limited self-critical attitudes, not seeking peer review, and insufficient commitment to equity;

- simplistic perception of social organisation and dynamics and subsequently poor interaction with community members, including: inadequate reflection on ethics, equity, and who actually participates in 'participatory' processes, lack of clarity or even honesty about outsiders' intentions, not adapting to local pace and needs;

Box 3 PRAP and Negotiating Differences (Chambers and Guijt 1995)

Redd Barna Uganda's work with PRAP focuses on developing and implementing Community or Group Action Plans through a process of analysis that explicitly takes age and gender differences into consideration. Analysis is undertaken with five community groups: younger and older women, younger and older men, and children. It is critical to create an appreciation amongst these groups of the uniqueness and importance of each group's priorities, so that older men will not, for example, oppose the needs that younger women might feel for family planning support. Thus far more than a simple, short analysis of problems and possible action points is needed. Several stages of dialogue with and between these social groups are needed to lead to change.

Step 1: Preparation (about 1 to 2 months). Laying the groundwork: means identifying and negotiating roles of stakeholders, plus advocacy work to make the participation of children, women and marginalised groups throughout the process easier. Sensitisation of government extension staff and partner organisations takes place.

Step 2: Field Immersion (1 to 2 weeks). Young women (often unmarried mothers), older women, younger men, older men, and children meet in separate groups to allow for different analysis of needs and priorities. Visual methods are used. This is the 'classic' form of PRA.

Step 3: Analysing Intra-communal Difference (3 to 5 months). Group-based analysis to identify shared or group-specific concerns, and possible solutions. This requires careful negotiation to overcome power differences. Those that have not yet been involved are invited into the group.

Step 4. Planning of Community or Group Action Plans (about 1 month). Final decision about community and group priorities requires negotiation about responsibilities, inputs, sanctions. The following is identified: areas of totally shared interest (where all 5 groups express a need), areas of partially shared interest (where 2, 3 or 4 groups have overlapping needs), and areas of unique interest (with needs specific to a particular group). This allows for collective action on areas of common interest, while valuing unique needs and acting on them, if necessary, only by the group who expressed them.

Step 5: Implementation and Monitoring (ongoing). Implementing, via a Village Management Committee, plans with monitoring of progress and initiation of new plans.

- use of PRA as a one-off project event without ensuring subsequent participatory activities, including lack of willingness or understanding about the need to adapt programme management styles, incentives and procedures;

- poor quality one-off training instead of longer term training and support programmes, while ignoring social differences, personal attitudes and behaviour, conflict resolution, planning skills;

- contradictory donors, such as wanting visible results quickly and slow participatory development, or insisting on accurate monitoring of both, yet without funding or methodology support;

- poor sharing of positive and negative experiences with rivalry between organisations and lack of investment in networking.

Much is being undertaken to redress the problems. Networks are forming, codes of ethics for field staff and donors are being discussed, training has solidified and expanded, investments are being made in wider institutional changes (Holland and Blackburn 1998), and gender issues are on the agenda (Guijt and Kaul Shah 1998). Practitioners are making more realistic claims about what they do and are committing themselves to longer processes that focus, again, on empowerment (see Box 3). There is far to go but the early euphoria is being replaced by a calmer realism, thus paving the way for improvements to continue on the back of critical reflection.

In summary, PRA has been most effectively applied in encouraging agricultural development when it has been part of a longer term participatory programme that focuses on sustained learning. With this in mind, we now turn to PTD and the lessons it offers.

PARTICIPATORY TECHNOLOGY DEVELOPMENT

A Brief History

In 1988, a review of more than 200 cases of experiences with participatory agricultural development led to the formulation of a framework for analysis and action that came to be known as Participatory Technology Development (PTD) (van Veldhuizen et al, 1997). PTD consists of a series of participatory activities, with related methods, which together comprise the key elements of agricultural innovation. Agricultural innovation takes place through focused and creative interaction between local communities and outside supporters, in which PRA methods are often used (see Table 2). Participants analyse the dynamics of a particular agro-ecological system together, define priority problems, and experiment locally with a variety of technological options.

PTD is not a confined or exclusive concept. Many organisations are involved in PTD-type activities with farmers, yet use other names. For example, one recognises the PTD framework in the 'Community-based Experimentation and Extension', developed by the USA-based NGO, World Neighbours, in West Africa (Gubbels, 1997), and in the 'Farmer-led extension approach' of the Campesino-a-Campesino movement in Central America (Holt-Gimenez, 1993).

PTD emerged out of many efforts to develop more sustainable agriculture systems. Strong farmer participation is an essential component for sustainability to be achieved. Working towards sustainability requires (van Veldhuizen et al., 1997):

- a thorough understanding of local dynamics, problems and opportunities - and only farmers have an intimate knowledge of these;
- the development of site-specific solutions - for which the formal research and extension system lacks the capacity;
- replacing external agro-chemical inputs with a stronger management role by farmers of their resources - thus strengthening farmers capacities to do this;
- maintenance of sustainable systems in vulnerable environments under ever-changing economic conditions - constantly monitored by the people directly involved, the farmers.

Despite these original agricultural roots, there are clear indications that it is of practical relevance in other rural technology development initiatives (Blick and Veldhuizen, 1993). It has proven equally relevant when working with farmers and communities, including pastoralists, to develop effective forms of local organisation and management institutions (Bayer and Waters-Bayer, 1998).

Methodology and Methods[6]

The PTD framework presents six groups of participatory activities, with related methods. Together these comprise the key elements of participatory agricultural innovation. They stress the link between participatory analysis, diagnosis and setting of priorities on the one hand and collective action, monitoring, evaluation, and dissemination of results on the other. These six elements do not necessarily need to be followed in strict sequence, as their relevance will vary depending on the level of technological innovation being

[6] This section draws on van Veldhuizen et al, 1997.

developed, the level of farmers' experimentation skills, and project/programme objectives. Nevertheless, by explicitly describing and advocating six elements, the framework provides guidance for a continued process of working together with farmers and communities.

1. *Getting started.* Before intensive interaction with farmers can begin, the groundwork has to be laid. An initial understanding of the sociocultural and agroecological situation of the community or communities is necessary, as is information about the individuals and organisations that could play an important role in future PTD work. A clear perspective and protocols for collaboration need to be established.

2. *Understanding problems and opportunities.* The strongest driving force of a participatory programme is the farmers' realisation that it addresses their critical concerns. A joint understanding of these concerns must be developed. Existing innovation can provide helpful entry points. Key activities in this step include: facilitating farmers' analysis of agricultural problems and cause-effect linkages within the wider socio-political and agroecological context; clarifying whose problems have been identified; and making an inventory of opportunities and potential resources. PRA methods are often used at this stage. Expected outcomes of this step should be: improved problem diagnosis skills and a better organisational basis for systematic farmer experimentation.

3. *Looking for things to try.* Promising ideas are collected from various sources: research and extension agencies, farmers and artisans. These are screened systematically by the farmers and PTD facilitators, and a joint agenda for experimentation is developed. The options are reviewed using criteria established together that focus on advantages, disadvantages and anticipated effects on different subgroups in the community. This stage will lead to agreements on what exactly is to be found out through the experiment, ie testable hypotheses.

4. *Experimentation.* The experimentation phase is one of the distinct elements of PTD. In this stage, farmers manage, monitor and evaluate the experiments they designed. While recognising that experimentation always occurs, strengthening this local experimental capacity helps farmers respond to changing conditions. Once they decide whether the innovation being tested is locally suitable, technical guidelines may be formulated and/or further experimentation needs can be identified. This stage involves training of

farmer-experimenters, group building, and strengthening linkages with other communities and organisations for follow-up support and dissemination of worthwhile innovations.

5. *Sharing the results.* PTD actively stimulates farmer-based extension, using the networks developed during experimentation as channels for communication and dissemination. Innovations and experimentation methodologies alike are shared. This stage requires understanding existing forms of farmer-to-farmer learning. Usually farmer-to-farmer exchange visits and training are accompanied by farmer-developed training materials.

6. *Sustaining the PTD process.* PTD is 'constructed' in such a way as to ensure that farmer-led agricultural innovation and development will continue without outsider encouragement in the long run. This stage refers to strengthening community organisations and institutions but also to improving linkages with service organisations to support future innovations. PTD facilitators gradually phase out their intense involvement, supporting group management and linkages. This stage can include a more comprehensive evaluation of the impacts of the PTD process and outputs on local livelihoods.

Emerging Concerns

Although the comprehensive framework of PTD is recent, some problems are emerging as it is being put into practice. Some of these are similar to the general concerns about participatory approaches that are described for PRA, such as inadequate facilitation, limited organisational support for long term processes, etc. However there are several problems that appear particular to PTD.

One of the weaknesses is the very comprehensiveness of the framework itself. In its wording and structure, it suggests that participatory agricultural development is best achieved by following six fixed steps - and that success will be guaranteed. Such a 'linear' approach, however, may well obscure local dynamics, actual needs and possibilities of farmers, and stifle creativity. Farmers interested in trying out a new maize variety seen in a nearby village may, for example, be advised by the facilitator to first undertake a thorough process of problem analysis, thus frustrating their enthusiasm. In this case, the step of problem analysis can be abbreviated or skipped altogether, as mentioned above.

Partly as a response to this, a number of new PTD-inspired programmes take local farmer innovators as a starting point. These are farmers who initiating systematic on-farm changes, often including some form of local experimentation.

Rather than undertaking community-wide problem analysis and prioritisation, agricultural innovation is initiated through dialogues with farmer innovators, understanding their concerns and dynamics for change. Their efforts are then supported both on the experimentation and farmer extension aspects (Waters-Bayer, 1998).

There is also controversy about the extent to which farmers should be encouraged to set up more systematic experiments. Do they all really need to become scientists? While some programmes have shown that farmers benefit from replicated trials and the limitation of variables and statistical analysis, others have encouraged farmers to innovate in their own way. Overall though, evidence to date suggests that, if shown the benefits of systematic experimentation, certain farmers do like to continue to pursue this way of working (Gubbels, 1997).

A third area that PTD has not yet consolidated lies with proving success. Most PTD usually has succeeded in encouraging farmers to innovate in some form. However, the extension workers and researchers who have supported farmers with their innovations then face the challenge of keeping track of this process and its results if they want to share findings with a wider audience. Extension workers will often try to combine farmers' findings in one location with those from elsewhere to draw some conclusion. This requires skilful monitoring and recording. Meanwhile, researchers will try to come to grips with a combination of quantitative and qualitative data to arrive at a deeper understanding of various results. This challenges them to go beyond conventional detailed statistical analysis. PTD does not yet offer guidance for either of these challenges.

As with most participatory approaches, equity issues are not addressed automatically in PTD. Although PTD literature emphasises the need to take socio-economic and gender differentiation seriously, the farmers involved in many technology development programmes have not been representative, as they are often male and better-off.

A final and fundamental criticism to the PTD approach is its ignorance of the sociocultural dimension of local and scientific knowledge and technologies (Haverkort and Millar, 1992; Haverkort and Hiemstra, 1998). Extensionists and researchers mostly look at agriculture through eyes trained in western-based scientific analysis while farmers look at land, crops, and animals as part of the wider world in which gods, spirits and other powers also play an important role. True dialogue can only take place, according to these critics, if outsiders are able to take these differences seriously. The new COMPAS platform (COMPAS

Newsletter vol. 2) aims at developing appropriate methods and approaches to this end.

COMPARING PRA AND PTD

Having understood the history, methodological content and limitations of PRA and PTD we now turn to the complementarities and contrasts between the two methodologies. This section will offer insights into the relevance of each approach for different situations.

Areas of Overlap

PRA and PTD share a widespread uptake and diversity of names by which they are known (see Box 1). These multiple versions reflect institutional evolution and context-specific developments. They also are an indication of on the one hand, their widespread appeal and on the other, the importance of specific applications. But there are more significant similarities that relate to the conceptual basis (see Table 3). Besides these similarities between PRA and PTD, there are others that relate to the methodological and institutional aspects.

Shifting roles for farmers (from receivers of technology to creative inventors) and researchers/extensionists (from teachers to facilitators of learning). This is perhaps the most fundamental practical change that PRA and PTD offer. There are versions of participatory agricultural development whereby farmers are involved in activities controlled and managed by professionals. Other versions exist in which professionals support farmers' own analysis and action. It is this latter version that best describes both PTD and PRA and forms one of the more basic conceptual similarities between the two approaches. Farmers take on a researching role, while external professionals act as facilitators of discussion and brokers of information. Facilitators - be they researchers, community development agents, or extensionists - share insights from the formal world of research and extension, and link farmers to funding, innovations, and other communities or experimenting groups.

Focus on capacity-building, rather than a specific technical output. Agricultural development will not occur only by pursuing one practical improvement after another - and offering it for wide dissemination. Instead, it needs to be based on the strengthened capacities of end-users of improvements and of their communities to solve problems and innovate. Roland Bunch and

Gabino Lopes (1995), in a rare study of long term impacts from farmer participatory development, highlighted how of the dozens of technologies promoted by NGOs, only three have survived over a 15-year period. Changing social, economic, and environmental conditions reduced or eliminated technologies that were initially useful. Yet productivity continued to increase. It appears that the motivation for farmers to become involved in an ongoing process of innovation, through a few carefully selected technologies, is what was sustained. Both PRA and PTD stress the social nature of agricultural development and the contribution of diverse people and groups.

Table 3. Comparing and Contrasting the Conceptual Basis of PRA and PTD

Principles	PRA	PTD
sustained learning process	• in theory, claims long term partnerships but practice is often short-lived, method-oriented field work	• framework presents iterative action-reflection process over a series of years • focus on supporting peoples' own innovation capacities
different perspectives in group-based inquiry	• groups are central to all discussions with individual interviews also included • weak on gender perspective but getting better • stronger focus on working with poorer groups • tend to include wide range of community people in discussions	• farmers interested in experimentation often form groups • sharing of experiments and their results in groups • clear discussion of roles of farmers, researchers, extensionists • difficulties in addressing socio-economic and gender differences
key role for facilitators	• facilitators guide discussions, are usually trained on methods, process, and increasingly personal behaviour/attitude	• facilitator's role is integrated with that of offering certain technological options and insights
systemic and methodo-logical structure	• limited analytical framework, other than what is implicit in the standard 'toolbox' (analysis of time, space, decisions, flows)	• systematic framework gives clear guidance but has the danger of being used as a 'recipe' • central attention to innovation, experimentation by farmers
context-specific	• tendency to be defined and applied as a series of methods, although increasingly with organisations formulating their own versions/adaptations	• emphasises need for adaptation and local innovation as compared to package approach of conventional agricultural R&D

A fundamental change in research and extension methodology occurs by emphasising farmer-led analysis, innovation and dissemination, another area where overlap between PRA and PTD can be found. Methodologically, both approaches encourage the use of a range of methods in a context-specific combination and sequence. The value of visualisation to encourage group-based analysis is also shared, although this plays a more prominent role in PRA than in PTD. PRA-based work has tended to emphasis qualitative information, while experimentation in PTD emphasises quantitative elements of farmers' experiments.

Training and workshops based on adult-learning principles are critical for dissemination and methodology development. The literature and training workshops of both approaches have consistently emphasised the need for both groups to understand and adapt to different types of behaviour and to take on different responsibilities. PRA and PTD trainers alike have collaborated to produce manuals (cf Pretty et al 1995 for PRA, and Veldhuizen et al 1997 for PTD). These manuals reflect a similar style of adult learning, in field-based workshops with follow-up support.

Areas of Difference

But there is a limit to the similarities between PRA and PTD. This section aims to describe some of the more prominent differences (see Table 4).

PTD grew out of the analysis of practical experience with agricultural and community development. It remains clearly focused on supporting agricultural development while gradually expanding into natural resource management and related local institutional development. Compared to PRA, PTD offers a more structured, agriculture-focused framework within which to plan and implement activities with farmers. It follows that it has been applied in fewer organisations and countries.

The early PTD work drew on initial experiences with PRA, hence the overlap between the two approaches when applied within the agricultural sector. During all the six phases of PTD, PRA methods can be - and are - used. In PTD, emphasis is placed on planning experimentation as a process to learn: trying out new ideas, evaluating interim results, adjusting hypotheses and reformulating agricultural farm plans.

PRA evolved through trial and error towards identifying norms of good versus bad practice, distinguishing it from the 'good practice' origins of PTD. PRA

has been applied without restriction to any particular sector and is therefore more widely used, including for urban development and organisational assessment. Due to its historical legacy from RRA, it is often viewed and applied as an approach for situation analysis only, as compared to the planning focus of PTD. Yet the realisation of the planning potential as closely linked to appraisal has pushed PRA beyond the strict interpretation of its appraisal-focused acronym. It is therefore, now increasingly the basis for community-based planning processes.

Table 4. Contrasts between PRA and PTD

Aspect	PRA	PTD
Application	• all sectors and themes: savings and credit, water and sanitation, health, agriculture, forestry, irrigation, biodiversity, HIV and AIDS prevention, etc.	• originally only agriculture and agricultural engineering, now also some application in natural resource management • basic ideas applied in local (agricultural) institutional development
Participants	• community members, agencies, NGO staff, sometimes policy makers from all sectors (except industry and infrastructure)	• mainly farmers and agricultural researchers/extension agents from NGOs and some government agencies
Attention to Planning	• some PRA processes only include appraisal stage, without community-based planning, monitoring or evaluation	• always includes plans for farmer experiments, and monitoring of the group process
Time frame	• very varied, often short, method-based interventions but increasingly multi-year processes within same communities	• always longer term process as the focus is on 'developing technologies', step-by-step agricultural innovation.
Inputs	• mobilisation of local knowledge, needs and resources • wide collection of practical methods	• local knowledge and outsiders' insights integrated systematically • less specific methods; incorporates methods/tools from different sources
Outputs	• many diagrams • often community or group action plans • group-based analytical and planning capacities	• technologies and capacities for managing agricultural change through joint experimentation and sharing
Link to formal institutions	• increasingly being taking on board by government agencies • NGO-based field work often explicitly involves government employees	• spreading from NGOs to government agencies (where its application requires important institutional changes)

Rather than providing an overall framework of phases and outcomes such as offered by PTD for farmer experimentation, PRA has no single framework for community planning. Instead, different steps and analytical questions are clarified in each application.

In brief, PRA is a more extensively documented approach than PTD, partly due to organisations' needs to develop their own application and framework. By comparison many organisations would now be able to define their work as PTD, though they have not always consciously set out to 'do PTD'. PTD did not initially aim at a clear name recognition, while PRA was strongly focused on preserving its identity as a distinct methodology. Therefore, many organisations consciously set out (or claim) to 'do PRA' consciously. Now however, as the importance of methodological complementarity is increasingly appreciated, organisations are letting go of the acronym-oriented approach to development processes and are coming back to asking themselves the critical question of 'what do we want to do?' and 'how do we do it?'

WORKING TOGETHER

PTD and PRA clearly share characteristics and have unique strengths that allow for complementary application. So where then, does the complementarity lie in practice? This section uses two examples, one from Brazil and another from Sri Lanka, to suggest how PRA and PTD are, in fact, part and parcel of similar, community-based social and technical innovation (see Boxes 4 and 5).

PRA is used to start off a process of PTD but can be used throughout, for example using 'matrix scoring' to evaluate experimentation results. When working with farmers, PRA *methods* can provide a powerful means to increase understanding by everyone involved of local realities, problems and potentials. When used well, they can build commitment and trust, and provide an opportunity to formulate priorities for action jointly. Especially for those sceptical of the potential of participatory approaches, involvement in a good PRA training event can be a real eye-opener. If learning how to improve existing farming practices is a central interest, PTD provides key insights in how to continue after the initial PRA-based analysis by encouraging experimentation, learning from this, and sharing the results.

Box 4. Complementarity in Sri Lanka: the PMHE Project (PMHE, 1996)

The bilateral *PMHE* project was initiated in 1991 to address economic and environmental concerns of newly settled farmers in one of the larger Mahaweli irrigation schemes in the dry zone of Sri Lanka. The project combined insights and methods from PRA, social mobilisation and group development, PTD, and ecological agriculture for its development and extension approach:

1. Exploration or getting started: Over the course of several visits, rapport is established with farming communities. PRA features strongly at this stage. Methods such as mapping, transects, ranking and semi-structured interviews are used to stimulate families to investigate their resource base. Through group discussions, local issues and options are analysed. The 'problem tree' method, known from the Objective Oriented Project Planning approach (OOPP) is also often used to clarify issues raised.

2. Farm Planning: Farmers are trained and supported to analyse their whole farming system. Based on an assessment of resources and ambitions, a long term farm development plan is prepared in which principles of ecological agriculture are promoted where feasible. The visual expression of this plan, the map, becomes a method for monitoring farm development.

3. Farm development through experimentation: For each season farmers are encouraged to engage in new experimentation. This may vary from simply 'trying things out' to more systematic experiments. Simple monitoring methods have been developed by farmers and staff. Matrix ranking is the most commonly used for reviewing experimentation results and comparing the options tested.

4. Local institutional development: The development of various forms of farmer organisations is encouraged to enable farmers to take ownership of the activities undertaken. These may vary from small neighbourhood groups for sharing of labour and informal saving and credit, to water-user associations, or a marketing co-operative for all dairy farmers. Technology development may occur within any of these organisations, while in some cases groups are formed with the sole purpose of learning through experimentation.

Field staff of the government extension agency in the area, the Mahaweli Economic Authority, are coached in a step-by-step training strategy. This often starts with basic PRA training to stimulate farmers to recognise the value of close collaboration with farmers. Subsequently, farm planning is introduced, a PTD training may follow to introduce the framework and the experimentation aspect, while group development and gender analysis often complete this series.

Box 5. Complementarity in north-east Brazil with AS-PTA (Sidersky and Guijt, forthcoming)

Projeto Paraíba started in 1993 and is a local agricultural development programme run by AS-PTA, a Brazilian NGO. *Projeto Paraíba's* work focuses on the municipalities of Solânea and Remígio. Project activities are carried out by a team of five agricultural professionals, in partnership with *animadores* (motivators) who are members of the municipal rural trade unions, the STRs. The STRs are AS-PTA's main partners. They are crucial to the sustainability of the work, as they will carry on with the agricultural experimentation, innovation, and dissemination activities once AS-PTA moves on to other municipalities. Besides the unions, small local farmer associations and farmers' experimentation groups are increasingly involved.

Projeto Paraíba considers farmers as the managers of ongoing innovation and change, and so focuses on them in the whole process of technological development and implementation. They essentially follow a PTD approach - however, without having referred to ILEIA's core documents. The team also recognises, however, that not all farmers are equally interested and/or able to participate in all aspects of agricultural innovation. Therefore, *Projeto Paraíba* works with three different levels of farmer participation:

1. A core of about ten farmers, the *animadores*, involved in strategic planning, guiding farmer-based experimentation, data analysis, and designing/implementing the monitoring and evaluation process.
2. A group of about 80 men and women farmers, including community association leaders and individual farmers engaged in joint experimentation. Practically all are also involved in monitoring, evaluation and planning.
3. Activity-specific collaboration with the general farming 'public' and community associations, covering over 30 communities and between 400 and 500 farmers, who are keen to adopt particular measures and with whom the monitoring/evaluation findings are shared.

Farmer participation has been central to *Projeto Paraíba* from the first step in 1993, when a participatory agro-ecosystems appraisal was conducted with 30 farmers and STR representatives to analyse the regional agricultural crisis and local coping strategies. The methods used included transects, participatory mapping, group discussions, feedback meetings and photos. The photos were used to analyse key problems and to share initial conclusions with over 1000 farmers in the region and stimulate more analysis.

This PRA process formed the basis for designing the project focus. During the farmer feedback meetings, farmers were asked to indicate their interest in tackling one of the key problems identified. These farmers were then invited to become part of one of several experimenting 'core' groups. Since 1994, a permanent participatory planning process has been in place, with annual seminars bringing together about 40 farmers from the various experimenting groups to review progress and reassess priorities. Outputs from farmer-based monitoring, using impact diagrams, matrix scoring, and farm models, and annual evaluations provide essential planning inputs.

Some would say that PTD is but a specific form of a PRA process, a form that focuses on agricultural innovation. Others would say that PRA can be used at certain stages of a PTD process. Whether one adheres to one opinion or the other depends largely on how one defines PRA and PTD. For some fieldworkers and researchers, PRA is nothing more or less than a toolbox of methods – and these people would use the methods in various PTD stages. For them, PRA is one amongst many interesting sets of methods but does not require a structured process of dialogue in itself. By contrast, others view and construct PRA as a much longer process of discussion, negotiation and change (see Box 3). For them, PTD becomes one specific application of a community-based change process, an application that is very explicit and specific in the various stages it advocates and the objectives it pursues.

Which of the two perceptions is correct is not important - nor will it ever be resolved. Too many different definitions exist, emerging as they have out of unique needs in diverse contexts. What is critical then is to define carefully what is meant by PRA and by PTD in each situation. This will help everyone to relate their own experiences to that of others and thus benefit from methodological innovations and improve agricultural development approaches.

SHARED CHALLENGES

The fundamental concern of all participatory programmes lies in what PTD calls the final phase of 'sustaining the process'. Ensuring continuity of the positive changes that are initiated with outside facilitation is the key challenge for both PRA and PTD. At the core of this challenge lies the need to overcome simplified and romantic notions of participatory development.

Experiences from both PRA and PTD clearly show that tremendous energy can be unleashed by the processes amongst those involved, revealing resources of knowledge and innovation previously untouched. However, channelling this energy within organisations implies difficult changes within people and institutions. Agricultural researchers have to move out of comfortable offices and engage in extensive negotiations about desired changes and strategies. They have to take on different roles vis-à-vis farmers, and live with the related complexities and frustrations born from shared decision-making. Experiences so far clearly show the need to plan introduction of participatory approaches not simply as a single training event or even a training process, but as a series of activities to support agencies shift the way their institution operates.

One weak area of PRA and PTD alike is how they link with conventional research and planning methods and programmes. Arising, as they have, from disillusionment with conventional approaches, it is nevertheless clear that neither approach is a panacea. What then are the respective strengths and appropriateness of the 'new' versus the 'old' ways of working with farmers? *How can on-station research inform and support participatory development?* How can qualitative and quantitative analysis be achieved simultaneously? How can methods more appropriate for non-local analysis, such as Geographic Information Systems (and other decision support systems), be integrated with the micro-scale of PRA and PTD work? What potential exists for merging PTD/PRA with other planning frameworks, such as Logical Framework Analysis?

More attention must also be paid to monitoring and evaluation of PTD and PRA processes. What are their real costs, and what are the expected and unexpected impacts? There is much unsubstantiated argument about the human *and financial cost as compared to other forms of development, as well as* actual versus claimed impacts. Moving beyond single, often NGO-driven cases, to development and use within large, often government-based agencies will only be possible if complementarities with conventional approaches are sought and proof is given that participatory agricultural development really does 'work'.

While this article has focused on understanding the differences between PRA and PTD, many other approaches can be and have been extremely useful in farmer-based agricultural development processes. Each has its own limitations. Therefore it is not a matter of opting for one or the other *'acronym' but rather of understanding the existing approaches and* constructing a good combination of methods to suit each new situation.

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Drylands Programme

The Drylands Programme aims to contribute towards more effective and equitable management of natural resources in semi-arid Africa. It has built up a diverse pattern of collaboration with many organisations. It has a particular focus on soil conservation and nutrient management, pastoral development, land tenure and resource access. Key objectives of the programme are to: strengthen communication between English and French speaking parts of Africa; support the development of an effective research and NGO sector; and promote locally-based management of resources, build on local skills, encourage participation and provide firmer rights to local users.

It does this through four main activities: collaborative research, training in participatory methods, information networking and policy advice to donor organisations.

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