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ABSTRACT

Over the last decade, there have been rapid developments in field methodologies within participatory approaches to rural and agricultural development. At the same time, the use of "soft systems" methodologies for bringing potentially conflictual or disparate actors together for action has spread from the business world to other applications. These new methodologies are based on the ideas that: (1) action for change and impossible as a voluntary process without a commitment to change and that participation is a necessary condition for commitment, and (2) complex decisions in conditions of uncertainty and immediacy are best handled from a systems perspective. Information about and competence in using and adapting these methodologies remain largely in the store of "craft knowledge" of professionals. Academic institutions have been slow to train students in the emerging professionalism of systems management and participatory research and extension, and have tended to view such professional work practices and skills as best developed in the field. This paper outlines reasons why such a view is no longer viable; outlines principles and goals for training and practice in rural development, agricultural research, and extension; describes efforts of a few universities worldwide to address these training needs; and examines questions about whether the needed skills can be taught in the classroom. Two university innovations in this area are described: systems-based curricula at the University of Western Sydney (Australia) emphasizing experiential learning, student reflection, and problem solving; and an intensive 3-week course on participatory research and extension at Guelph University (Ontario). Contains over 100 references. (SV)

SYSTEMS THINKING AND PARTICIPATORY RESEARCH AND EXTENSION SKILLS: CAN THESE BE TAUGHT IN THE CLASSROOM?

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From the Editor

We are pleased to welcome back to our Occasional Papers Series Dr. Janice Jiggins and Professor Niels Ro"ling, authors of earlier papers in the series (Nos. 2, 3 and 5). On this occasion they combine efforts to present an approach to teaching methodology at the graduate level by using participatory instructional techniques - another variation of learning by doing. Their observations arose initially from an M.Sc. semester course they offered together at the University of Guelph in 1991. As they later analyzed other similar efforts elsewhere, they came to the views expressed here. We felt that their perceptive and utilitarian comments would be of considerable interest to our readers.

Dr. Jiggins, an eminent international consultant in participatory rural development, women in development, smallholder extension strategies and related issues, is an Associated Graduate Faculty member of the Department of Rural Extension Studies. Professor Ro"ling was, in 1986, the first Visiting Professor at Guelph from Wageningen under the terms of the Guelph-Wageningen Exchange Program. He teaches and publishes widely in the fields of rural extension, communication and agricultural knowledge systems. Both have papers in the new 1994 edition of the Extension Handbook (flyer enclosed) edited by our colleague Dr. D.J. Blackburn. We are pleased once again to offer our readers the stimulating views of our colleagues from The Netherlands.

J.C.M. Shute
April 1994

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INTRODUCTION

Over the last decade, there have been rapid developments in field methodologies within participatory approaches to agricultural and rural development such as Rapid Rural Appraisal, Participatory Technology Development and Farming Systems Research and Extension. At the same time, the use and development of "soft systems" methodologies for bringing potentially conflictual or disparate actors together for action has spread from the business world to find many other applications. All are predicated on the well-attested hypotheses that action for change, on a scale that makes a difference, is impossible as a voluntary process without a commitment to change and that participation is a necessary, if not always sufficient, condition for commitment. Further, they are grounded in research showing that complex decisions in conditions of uncertainty and immediacy are best handled from a systems perspective.

Information about and competence in using and adapting these methodologies remains largely in the store of `craft knowledge' of professionals. Written descriptions of specific methods, the skills needed to use them, and documentation of the context and parameters within which they have proven useful, is circulating largely through informal networks in the form of fugitive `grey' literature.

In the fields of agriculture and rural development, the methodologies are designed to achieve four main purposes:

> to provide outsiders (those living and working primarily outside a community) timely,cost-effective, relevant physical and social information concerning magnitudes, spatial and time patterns, flows, trends and relationships with respect to specified problems, and insight into concrete local opportunities for development intervention;
>
> to strengthen the self-management and self-development capacities of communities and individuals themselves;
>
> to develop shared understanding of sustainable resource systems, and their management, over scales larger than the farm unit and longer than a year or crop season;
>
> to bring about consensus for action among disparate, potentially

confrontational actors, in conditions of uncertainty, about complex decisions which cannot wait upon the results of longer term research or consultation (ILEIA 1991; Altieri and Yurjevic, 1991; Lightfoot et al; 1989; Checkland, 1981.)

Can Academic Institutions Afford to Ignore the Emerging Professionalism?

These methodologies, and the approaches and principles within which they are being elaborated, have both a vocational and theoretical dimension, with a clearly professional rather than purely academic orientation. By and large, academic institutions, even those whose main purpose is to train students in the disciplines relevant to agriculture and rural development, have been slow to train students in the emerging professionalism of systems management and participatory research and extension. Professional competence as such, and specific work practices and skills in particular, have been seen as best developed in the field during post-study apprenticeship, internship or intensive training. Such a view is no longer sustainable, for a number of reasons:

1. Throughout the world, the agricultural sector is being challenged to"contract with society" (Peter Bloome, 1991). Urban and consumer interests in many countries now dominate the political process. Environmental lobbyists, recreational societies, transport planners, and other non-agricultural voices now demand the right to shape the use ofrural speace and the nature of agricultural production processes.

2. Many outside the industry see agriculture as a source of pollution and environmental degradation, with farmers, chemical companies, support services, and research scientists cast in the role of the `bad guys.' On the one hand, the assumption is made that the more `successful' the commercial farmer is within the dominant convention of good practice, the more destructive of agricultural and natural resources and hence everyone's future prosperity. On the other, it is predicted that, without major change in livelihood potential, poor farmers in poor countries will become ever larger contributors to deforestation, erosion, and loss of soil fertility.

3. Technology-driven innovation and market integration, as they inevitably must, are pushing farmers out of the industry at an ever-increasing rate, giving rise to renewed fears of uncontrolled (and perhaps uncontrollable) mass migrations, loss of community cohesion and rural depopulation.

4. Partly as a consequence of the three trends noted above, the validity of `science,' as a body of knowledge and as a rigorous set of practices and intellectual endeavour is being challenged by other `ways of knowing,' which give greater weight to a broader canvas of experience, self-reflection, and indigenous traditions of learning and conceptualization. At the same time, there is an increasing flow of scientific knowledge about topics which the dominant scientific centres (including universities) have been slow to address. It is not happenstance that, for example, recent experimentation and organization of knowledge about organic farming and integrated farming (which permit some chemical use), and about how to move from chemical-based systems to alternatives, on a system scale, or about the processes of accumulation of cocktails of polluting chemicals in ground water, and their human health effects (Brown and Mickelsen, 1990), have occurred largely on the fringe of formal Research and Development mandates and public sector extension expertise. The new

topics typically crossdisciplinary boundaries, require a systems orientation, and value `ordinary people's' own knowledge, experience and observation of phenomena as essential inputs to problem definition, analysis, experimentation, evaluation and action (Funtowizc and Ravetz, 1990).

The New Agenda

In other words, both the technology used and the organization of production in agriculture are under attack, accompanied by a search for alternative approaches to the generation of technology and to the development of the industry and rural futures. But the search is not a simple scientific and technocratic exploration within a relatively closed community of experts. There is growing realization that the social and physical systems within which agriculture is embedded are deeply imbalanced, are undergoing profound anthropogenic change, and need to be understood and managed differently if humanity is to survive. Further, it is realized that if coercion and authoritarianism are to be avoided in the process of transition to sustainable systems, then voluntary changes in human behaviour will have to occur on hitherto unknown scales. The process inevitably calls into question both individual and societal values. Wide debate of scientific purpose and the goals of technology development can no longer be avoided by agricultural professionals.

What might be concluded from such a brief analysis? In our view, training and practice in rural development, agricultural research, and extension must move toward:

1. an intellectual and theoretical understanding of the physical and social world as dynamic, interactive systems;

2. an acceptance that the exclusive world of the researcher and professional is widening to include many other actors;

3. the acquisition of skills to implement a "soft systems" process, in order to build partnerships with other actors, develop organizational capacities, and to capture the synergy latent in the (partial) stores of knowledge and experience of multiple actors;

4. the establishment of design-driven processes of innovation (such as the "chain-linked model" widely practiced in manufacturing and service enterprises), which can generate locally-relevant technologies and services adapted to specific contexts and needs. Such processes demand that scientists and clients relate and interact as colleagues (not as, respectively, experts determining both the problem and its solution, nor as clients to whom a product, service or information is transferred).

These imperatives in turn imply that academic institutions with agricultural, environmental or rural development interests, must begin to develop intellectual and program domains informed by systems thinking and to turn out graduates with the understanding and skills to negotiate among multiple, potentially confrontational, actors. During a year's sabbatical leave which took the authors around the United States, Canada, India, Indonesia, Benin, Europe and Australia, we could identify only a handful of academic institutions which as yet appear to have developed such capacities.

But The Response Is Weak

There are still very few academic centres which have regrouped their

intellectual and financial resources in response to the new agenda and the emerging professionalism. Khon Kaen University in Northern Thailand with a clear mandate to participate in regional rural development, has been something of a pioneer. Other centres in Asia, such as the Bangladesh Agricultural University, the cluster of Indian research and rural development institutes, including the University of Andhra Pradesh, in Hyderabad, the University of the Philippines at Los Banos, Egerton University and the Institute of Development Studies of the University of Nairobi in Kenya, have all begun in recent years to experiment with new curricula as have, largely through pressure of demand from non-government organizations (Altieri and Yurjevic, 1991), a handful of centres in Latin America.

In the United States, the large land grant universities and prestigious centres of excellence seem to be having difficulty in regrouping resources, relying largely on scarce new money to add additional programs, leaving students the task of baking a new cake from the existing ingredients. Private institutions such as Antioch College in Ohio, or Clark University in Worcester, Massachussetts, are more ready to respond to `market demand,' from bright graduates able to pay to get what they are looking for. Often mature professionals with activist experience or community-level involvement in research or development capacities, the students are attracted by the purposive mix of reflection on their own experience, exploration of theoretical frameworks, and engagement in praxis which the institutions offer. In the U.K., the Institute of Development Studies at the University of Sussex, and Lancaster University are also among the pioneers.

The Ontario Agricultural College at the University of Guelph is attempting to bring about voluntary structural change in order to develop some systems-based programming and cross-disciplinary collegiality, deploying a number of levers to nudge powerful department chairs and hitherto sacrosanct disciplinary traditions in new directions, including:

** the establishment by the Dean of issue-based task forces which include internal and external members drawn from, for example, the food industry, agricultural politics, or environmental groups. The chairs of these committees were appointed from a department not traditionally concerned with the issue. The committees report on the options for addressing the issues through cross-disciplinary collaboration, joint programming of course work and research, staff development, and off-campus partnerships;

** steering funding for agricultural and rural development research to proposals which involve cross-disciplinary, cross-departmental collaboration, with a bias to those which potentially lead to a sustainable institutional capacity to carry out collaborative research and teaching.

None of these institutions, however, has gone as far as the former Hawkesbury Agricultural College in New South Wales. Beginning with new courses, moving to new curricula, and, finding it impossible to stop halfway through the logic of participatory, experiential learning processes, continuing to radical faculty-level change, the "Hawkesbury experience" provides important lessons, which are examined below. The paper then concludes with an assessment of one particular course-level experiment conducted in the summer of 1991 at the University of Guelph.

But Can Such Professional Skills Be Taught in an Academic Setting?

Before looking at the following two examples, it is helpful briefly

to consider whether, however desirable, and notwithstanding the pioneering work of the institutions mentioned above, systems thinking as such, and Participatory Research and Extension (PR & E) in particular, actually can be taught in an academic setting as an accredited course. How can students be helped to move from an intellectual appreciation of systems theory and practice to become systems thinkers? Does PR & E have theoretical content or does it consist mainly of useful `rules of thumb'? What are its disciplinary antecedents and with what degree of rigour might these be tested and analyzed? How might students' progress be evaluated and measured? Is there adaptation needed in teaching and learning competencies, styles and techniques, beyond the formal lecture format and seminars? Is it enough for students to learn about appropriate skills and methods or should they learn also to use them with confidence (comparable, say, to learning laboratory skills)?

No definitive answers are available; active experimentation and development of course curricula are ongoing, with intense international exchange of experience. Academic planners, funders, and faculty are showing increasing interest in both the questions and the answers.

THE HAWKESBURY EXPERIENCE

For over ten years the Faculty of Agriculture at what is now the University of Western Sydney has been developing systems-based curricula by creating changes based on conceptual explorations experience. Impelled by a review in the late 1970's of three issues which the staff perceived as inter-related - the rapidly changing nature of agriculture in Australia, the nature of learning and how people learn, and systems approaches to understanding complexity and the nature of change - the Faculty has evolved an experiential learning program. The main elements in course structure are:

** orientation to Faculty and support resources available on the campus;

** development and implementation of a Personal Action Plan, centred on an individual learning experience identified by the student and validated by the Faculty;

** a farming Task, learning experientially how to deal with technological issues in agriculture;

** a Farming Activity Task, deepening the student's understanding a specific activity/sub-sector;

** a Rural Development Task, in which the student engages in an off-campus group exercise in and with a rural community;

** an Off-Campus Agricultural Situation Improving Task, in which the student works with a farm household, community organization or industry group to bring about joint learning and problem-solving.

In addition, the Faculty supports student effort by providing Learning Packages on request, dealing with either specific aspects of the process of experiential learning or the content of agricultural science and practice, and by facilitating the formation and work of ad hoc, short-term Interest Groups, for in-depth examination of particular topics (typically an agricultural science subject encountered in execution of students' Tasks).

Student progress is assessed (a) by periodic joint reflection on what the student planned to happen and why, what in fact happened, how it happened, how the student learned from the experience, what the student learned, and where it leads; (b) staff-organized assessments during which students present summaries of their affective progress (attitudinal elements and value-related elements), conative progress (actualized behaviours and behavioural intentions), and cognitive progress (intellectual elements); (c) formal and informal feedback from Tasks; (d) a written document in which (a) to (c) are recorded as part of a total summative assessment, culminating in a student presentation to a staff panel, who read the document and listen to a formal oral presentation by the student.

Staff Roles

The role of staff is (a) to support students as they make their own way through the Hawkesbury curricula, and to facilitate learning rather than to direct it, or `to stuff information into empty heads,' as one staff member put it. (b) To engage in situation- improving action learning (research) in the community and/or agricultural industries; (c) demonstrate desired attitudes, behaviours and skills in their own tasks and performance within the university and off-campus; (d) to be self-critical and reflective, periodically assessing their own experiential learning.

By far the majority of the staff began their own academic training in the natural sciences. The change toward systems-based curricula has been very much an experiential learning process for them, too. Some have not survived or welcomed the changes and have left; the entire horticultural department has retreated to a more familiar approach. Others are still struggling to acquire the competence to work in the community, and to expand their tool-kit of methods and skills needed for participatory "situation-improving." The facilitation of partnerships among, and empowerment of, farmers, service personnel, and industry leaders does not suit everyone's temperament nor make the best use of their strengths as academics.

Concerns and Strengths

There is continuing concern both within the University and in the agricultural industry at large that graduates might lack competence in some key technical area which they might not have encountered during their chosen program or lack basic scientific understanding of a particular process, however skilled they may have become in seeking knowledge relevant to solving problems. Yet it is also recognized that graduates have become capable systems thinkers and are playing key roles throughout Australia in helping to bring about significant technical and organizational change in farming systems, industries, and resource management units such as catchment areas, as well as through facilitation of participatory processes, development of partnerships, and empowerment of community groups.

THE GUELPH COURSE

In this context, the Department of Rural Extension Studies in mid-1991 offered an intensive three-week credit course within its M.Sc. gram on Participatory Research and Extension. The course was made up hree elements: skills development (methods); models and concepts; and

embedding methods and approaches in the social dynamic. Participants were encouraged to engage in experiential learning, in which (at least) three processes were stimulated: sharing of substantive, information, concepts and skills; the `real time' experience of group dynamics and self-discovery; and critical review of the participatory process and techniques used in the facilitation of the course. The actual working of the elements x process approach was made subject to frequent evaluation, permitting considerable flexibility in timing and content, briefly at the end of each topic/exercise, and more formally at the end of the first day, at the end of the first and second week, and through a review of the entire course at the end of the third week. Different evaluation methods were used in each case and became themselves subject to assessment (e.g. how, when to use, with whom what to do with the results, strengths and weakness and so on). Programming

The actual programming was, beyond the bare outline given above, filled in by the participants themselves, with guidance from the facilitators as to the resources available, which included photocopies of some 40 documents (largely from the grey circuit) and a number of videos. Participants were responsible, for example, for selecting which methods they wanted to acquire competence in, and for determining when, and on what, each would make a half-hour, individual presentation of a chosen method (which counted for 20 percent of their marks). The emphasis here was on risk-taking, experimenting with methods unfamiliar to the presenter, and creating a shared learning experience, rather than on `polished' performance. The majority chose to try out something relevant to their work or study needs (such as working with Prince Edward Island potato farmers on soil erosion). Participants were also responsible for forming groups and choosing a topic and time for making a one hour group presentation in the final week, graded by the class, on criteria identified by the participants (constituting 50 percent of their final mark). The remaining 30 percent of the mark was awarded by the facilitators on the basis of short papers, not longer than 10 pages, handed in before the end of the course, applying what they had learned to a specific problem or situation in their professional work. Facilitators and Participants

The two facilitators (the present authors) are experienced agriculture/rural development professionals with social science and extension backgrounds, but with limited first-hand field experience both in using the total range of methods which potentially could be covered, and in running such a course. The participants, comprising both part-time and full- time graduate students, had widely differing backgrounds, seniority and professions, the range encompassing members of the Ontario Ministry of Agriculture and Food, a Girl Guide leader, a natural scientist who had been working near the Arctic Circle on a grizzly bear conservation program, a senior development consultant for CIDA based in Pakistan, a recent graduate, and students from the Philippines, Ciskei, Zambia, the Caribbean and the United States. There were 19 registered credit students, plus three auditing the course full-time and an additional two who participated as much as they could (totally eight men and 16 women).

The Process

After an introduction to the course outline (elements and process), and the roles the facilitators and participants would play, the facilitators began by challenging the participants to experience the `otherness' and incompleteness of disciplinary perspectives, and the difficulties of interdisciplinary team work, through a slide-based exercise: What Do You See That I Don't? (adapted from an exercise developed originally by women researchers based at the International Rice

Research Institute (IIRI) in the Philippines as a way of getting their male colleagues to understand differences in gender perspectives). Subsequently, they were encouraged to choose from among, and begin working on and with, methods being used in (i) Rapid and Participatory Rural Appraisal and Participatory Technology Development, (ii) working with groups and in groups, (iii) self-discovery (own motivations, values, learning and leadership styles, etc.), and (iv) participatory monitoring and evaluation.

The choice to begin with concrete experience was made on the basis of Kolb's (1984) analysis of the four-part cycle of learning (learning through concrete experience, reflection on the experience, conceptualization, and experimentation/application), a cycle which can be entered at any point but needs to be completed for rounded understanding to develop. Schools and universities typically enter at `conceptualization,' add in a bit of reflection on others' experience, and, especially if one is studying science subjects, also a bit of experimentation and application. Concrete experience and reflection on one's own experience are typically undervalued, yet they are two of the main channels through which `ordinary' people, and those in rural areas with limited access to schooling, in fact learn. Learning from concrete experience is a right-brain activity; the experience is perceived as a whole, and reveals what we did not know we knew.

The Experience

The concrete experience produced a number of surprised `aha' moments as well as a number of frustrations. During the second day, when small groups had formed to work through methods appropriate to particular problems/goals/settings, one group just could not get itself organized. This led to reflection and analysis of the experience of being a member of a small group, and what is needed for it to set and achieve goals and maintain member satisfaction. Other participants felt `all at sea,' with no clear idea of where they were heading, so they structured a plenary session, using the nominal group technique, to help participants identify their expectations of the course, their own goals and priorities, and strategies for reaching them. This step led into time scheduling and programming of content. The facilitators were pleased: the participants were beginning to `own' the course and manage it themselves.

Participants were challenged to find (through reading or by drawing on the disciplinary knowledge of others) and share the theoretical foundations supporting the validity of a particular method or conceptual model. A wide range of theoretical sources were drawn upon, including various schools of psychology, innovative - or at least unfamiliar - statistics and mathematics, physics, adult education, sociology and anthropology, political science, computing and informatics, linguistics and semiotics, and hard and soft systems theory as developed by engineers, managers and ecologists.

Did the diversity signal a jumbled potpourri of no intellectual rigour or a "rich picture" (to borrow a term from soft systems methodologies), the creative ferment of an emerging field? The facilitators are not sure how to characterize the diversity. Some effort was made to discriminate between the ontological and the phenomenological, and considerable discussion revolved around the putative relationships between hard and soft systems. No doubt a longer course would have allowed time for more analytic examination of some of the issues which were raised. Nonetheless, participants derived great satisfaction from the perception that they had a contribution to make to the formulation and testing of hypotheses, the development of theory and the creation of conceptual models.

Conflict Management

Participatory methods do not, as a rule, in themselves generate conflict, and a number (such as soft systems methodologies) are specifically designed to bring disparate, conflicting positions into harmony for the purposes of further action. Participants equipped themselves with the "Double Fish Bowl" method, primarily as an evaluation method in which otherwise- difficult-to-express feelings could be aired and dealt with. The method involves the formation of a small inner and outer circle of participants. Individuals in the inner circle in turn raise questions and issues they have experienced as negatives and positives, the process continuing until no one in the inner circle wishes to add anything. Those in the outer circle listen without interruption, until at the end they are invited to comment on what they have observed and heard.

This proved a good way of getting rid of the tensions and tiredness which built up inevitably in a course of such intensity. It did not provide a method for signalling someone's need to break the process for immediate reflection on what was occurring at a particular moment. The "time out" signal familiar to North American sport fans (hands raised to form a `T'), was proposed as a useful indicator.

Academic Research and Participatory Methods

Most of the participants were engaged in academic research activities at the masters or doctoral level, and were looking for ways to carry out participatory research. A number of largely unresolved issues arose. One is the unwillingness of many academic supervisors to admit the validity of participatory research, probably owing to their own unfamiliarity with, and hence lack of confidence in, such methods. In particular, it was noted, there seemed to be a widespread, if erroneous, belief that qualitative methods do not generate reliable statistics. Of course, the truth is that some do and some do not; the onus is on the student to select an appropriate method for the task. Another set concerned the ethical and practical aspects of engaging in participatory research that is not directly linked to action. The suggestion was made that students had a constructive role to play in the context of ongoing development activities, with their work feeding into a process. Others considered that, if through the process of participatory research, a farmer's group's or community's own self-management capacities were enhanced, there would be no conflicts between academic and `real life' goals.

Synthesis

An attempt was made in the final week to typologize, compare and contrast. A matrix was used, with three headings along the top: Participatory Approaches, Marketing Approaches, and Linear Approaches, and five headings in the vertical column: Toolbox, Models/Concepts/Theories, Goals, Context (Political, Environmental), and Values. Through plenary discussion and buzzing, the cells were filled in, with the reminder that the resulting map should be seen as a heuristic device rather than a definitive record.

FUTURE PROSPECTS

It has not yet been determined where the limits are, or might lie,

either in the application of the methodologies noted here or in the manner of their acquisition. With regard to the latter, there are (at least) three issues which would seem to merit further experimentation.

** Staffing: Are the methodologies such that anyone interested can develop the skills to help others learn them? From the authors' own experience so far, there would seem to be dangers in an assumption of new responsibilities among those who do not share, or who have not had time to consider, the philosophy of participation. Mechanistic `how-to' teaching of a limited number of methods, or an approach which leaves a student with the idea that a determinable result will emerge from correct methodological application, would both be unhelpful.

** Students: To what extent can young students, with limited experience, develop professionalism in the terms described in this paper? It seems likely that, the richer their exposure to the situations and problems which soft systems methodologies and PR & E attempt to address, the richer the content of experiential learning. Nonetheless, it also seems likely that limited non-academic experience need not limit the richness of the process of learning. Field training in the use of the methods seems desirable, but it is essential? After all, the many methodology courses presently run by universities find classroom teaching of questionnaire construction and statistical methods an adequate preparation for survey research.

** Control: It is in the nature of experiential learning, soft systems, and participatory research, that outcomes are undeterminable. What, then, controls assessment standards, examination procedures, and provides assurance of quality? Unresolved issues surrounding these questions (as well as innate nuances of temperament and personality), can lead to inappropriate attempts to control the process. A control-orientation is not only methodologically mistaken, it denies the comparative advantages of methodologies designed to bring about timely iterative decision-making in conditions of uncertainty and instability.

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Action Aid, P.B. 5406, 3 Resthouse Road (next to Lumbini Apartments), Bangalore 560 00111, India.

Agricultural Administration (Research and Extension) Network, Overseas Development Institute, Regent's College, Inner Circle, Regent's Park, London, NW1 4NS, U.K. Tel: 071 4487 7413, FAX: 071 4487 7590. [Free: conducted as a kind of postal seminar, some 24 newsletters to date, together with papers discussing authors' field experience of working with farmers to develop technology and manage resources. Quite a number deal with institutional arrangements and the contribution of community organizations and NGOs.]

CIKARD - Centre for Indigenous Knowledge for Agriculture and Rural Development: bi-monthly newsletter, including news and views from both industrial and developing country contexts. [Free from: CIKARD News, 318B Curtiss Hall, Iowa State University, Ames, Iowa 50011, U.S.A. CIKARD now liaises with local centres in Nigeria, Indonesia, The Netherlands (Leiden University).]

Developing Countries Farm Radio Network, 595 Bay Street, 9th Floor, Toronto, Ontario, Canada. M5G 2C3

IIED - International Institute for Environment and Development, 3 Endsleigh Street, London WCV1H 0DD, England. Tel: 071 388 2117. FAX: 071 388 2826. (IIED publishes in network format: * Gatekeeper Series on Sustainable Agriculture; See, for example, No. 16: Participation by Farmers in Soil Conservation. * RRA Notes, free, on request, from June, 1988: excellent informal mimeo notes on methods (including organizational and planning methods/issues/experience), and their use in the field, etc. All issues excellent and back copies are available. Among the most recent: RRA Notes No. 11: Proceedings of the Local Level Adaptive Participatory Rural Appraisal, Proceedings of the February, 1991, Bangalore PRA Trainers Workshop; * Publications Catalogue listing a range of interesting publications on natural resource policies and management, economics of pollution, soil conservation and agricultural pricing, etc.

International Federation for Women in Agriculture: Secretary General, Indian Council of Agricultural Research, Room No. 177, Krishi Anusandhan Bhavan, Pusa, New Delhi 110 012, India. [Northing much happens between conferences but its conferences are an excellent meeting place for exchanging the latest news from the field.]

PALM-PRA (Participatory Learning Methods-Participatory Rural Appraisal), at MYARDA, 2, Service Road, Domlur Layout, Bangalore 560 071, India.