Lessons in scaling up
**Dear Readers**

This issue of the LEISA Magazine is on ‘lessons in scaling up of LEISA research and development programmes, to bring more benefits to more people, more quickly, more equitably and more lastingly’.

Case studies and workshop reports from international workshops on ‘going to scale of agricultural research and development’ served as a rich resource for this issue. A selection from this material complemented with several other successful cases makes up this issue. The introductory article (p.6) is written by Julian Gonsalves, the guest editor for the international issue and former Director of the sustainable Agriculture Programme of the International Institute for Rural Reconstruction in the Philippines and proponent of sustainable agriculture approaches for 20 years. He was involved in organising two of these workshops and served as a resource person in the other two. The article provides a summary of the main findings of the workshops. Included are the views of Dr. Dwarkanath, who was associated with Indian Agriculture for over four decades as a distinguished educationist on the scenario of changing agriculture and the role of extension education in the Indian context. Together with perspectives provided by Carl Taylor (p.16), these articles would be of special interest to planners, managers and trainers of research and development programmes. The rest of the articles, which deal with more practical cases, should certainly be more appealing to the majority of our readers.

We are extremely grateful to International Development Research Centre (IDRC), Canada for supporting the production and distribution of this Indian edition of LEISA magazine. In the recent past, the production schedule was seriously hampered owing to paucity of funds. With support from IDRC for information sharing on sustainable agriculture strengthening the production of few more issues, and long term support from other donors for the production and distribution of the magazine, we are confident that the magazine would reach you more regularly.

We sincerely thank you for bearing with the delays and continuing to support us with your contributions and views. New themes for the upcoming issues of the LEISA Magazine are appearing on back cover and on pages 29 and back cover. We look forward to your enthusiastic response.

On the inside back cover is a short report on the readers’ survey conducted by ILEIA in Ethiopia. This survey is the first in series that ILEIA hopes to undertake to get better insight into what information readers really need and how they use the information that is provided. The findings of this survey were very encouraging - every visit was an inspiring example of how useful the magazine is to its reader and in more ways than we could think of.

The Editors

---

From Farmers’ Field Schools to community IPM - scaling up the IPM movement

**Russ Dlits**

From the first Farmer Field Schools consisting of 25 farmers each to a people-centred IPM movement counting several millions of farmers in many countries, the IPM programme has indeed brought benefits to many. The example of Indonesia is evidence to the process of farmer empowerment that has been initiated through the IPM programme. Farmers have taken on the roles of experts, trainers, researchers, strategic planners, organisers and policy makers, which has made way for IPM to become a successful, farmer-driven movement.

---

**AME Foundation** promotes sustainable livelihoods through combining indigenous knowledge and innovative technologies for Low-External-Input natural resource management. AME is an innovative training programme and resource centre enhancing synergies between institutions and individuals involved in sustainable agriculture.

**ILEIA** is the Centre for Research and Information on Low-External-Input and Sustainable Agriculture. It seeks to exchange information on LEISA by publishing a quarterly newsletter, bibliographies, and books. ILEIA/IDOC, the data base of ILEIA’s documentation centre, is available on diskette and on ILEIA’s Homepage: www.ileia.org. Back issues of the ILEIA Newsletter are also available on ILEIA’s website.

**LEISA** is about Low-External-Input and Sustainable Agriculture. It is about the technical and social options open to farmers who seek to improve productivity and income in an ecologically sound way. LEISA is about the optimal use of local resources and natural processes and, if necessary, the safe and efficient use of external inputs. It is about the empowerment of male and female farmers and the communities who seek to build their future on the bases of their own knowledge, skills, values, culture and institutions. LEISA is also about participatory methodologies to strengthen the capacity of farmers and other actors to improve agriculture and adapt it to changing needs and conditions. LEISA seeks to combine indigenous and scientific knowledge and to influence policy formulation to create a conducive environment for its further development. LEISA is a concept, an approach and a political message.
Balancing our way to scale: PTD for sustainable dry land agriculture in South India

Y D Naidu and Edith Van Walsum

Highlights collaborative action between institutions and individuals in South India seeking to support small and marginal farm families in developing sustainable dryland agriculture. Discusses Stakeholder concerted action facilitated by AME with crop based Participatory Technology Development as an ‘entry point’ strategy.

Scaling up sustainable agriculture: lessons from the Campesino a Campesino movement

Eric Holt-Gimenez

Over ten thousand farmers in Central America belong to the Campesino a Campesino movement and use the agroecological practices it has developed. The effectiveness of these practices was clearly seen in the resistance that these agroecological farms had to the Hurricane Mitch. Yet, the question, “If it works so well, why hasn’t it spread more?” remains. And it is in reply to this question that the author lists out a number of key impediments, which need to be addressed if more farmers are to be reached with these practices.

Scaling up fallow management innovations in Eastern Zambia

Freddie Kwesiga, Andreas Bohringer and Glenn Denning

Improved fallows with Sesbania and other species have been the focus of ICRAF’s research since 1985. These improved fallow systems have a great potential to increase maize yields with or without application of inorganic fertilisers. This fact alone has increased the number of farmers testing and using improved fallow practices in Eastern Zambia from 200 to 10,000 in just 5 years. ICRAF’s is now developing ways of scaling up the adoption of this innovation to benefit the many thousands of farmers in Eastern Zambia, and in the South African region. ICRAF is, however, not unaware of the constraints that have to be overcome in order to achieve success.
Lessons for scaling up LEISA

Editorial

In a bid to guarantee food security for all, policy makers argue for a doubling of food production in the next two decades together with poverty eradication. What’s more, they expect such increases to be brought about with no added pressure on natural resources. Farmers, as primary producers, want to survive, stay in business and increase their income, and therefore wish to raise productivity, reduce costs and minimise the negative impact of their production systems on human health and the natural resource base. Clearly, policy makers, researchers, development workers and farmers have a common interest to improve agricultural production. However, agricultural development is complex and diverse, and stakeholders often do not agree on the remedies and strategies that are best.

Many research and development programmes try to address the above objectives. Although there are many successful cases around the globe, only a few of them are spreading fast. To optimise returns to effort and spread impact to as many farmers as possible, it is important to analyse which approaches are successful and why. How these approaches contribute to the different objectives of sustainable agriculture, and which research and support methodologies are most effective in enhancing agriculture development and large-scale application should also be analysed. It is increasingly understood that conventional Green Revolution (GR) agriculture and top-down research and development approaches have strong limitations. This explains the growing interest to learn lessons from alternative approaches that have spread to many farmers - ‘gone to scale’.

Recent workshops on ‘going to scale’

To learn about the factors that influence ‘going to scale’ of agricultural research and development, leading to ‘more quality benefits to more people over a wide geographic area more quickly, more equitably and more lastingly’, four recent workshops (Gonsalves p.6) brought together information on approaches which are spreading fast. Although these workshops mainly focused on the methodological aspects of research and development and less on impact, the cases collected for these workshops give interesting examples of present success stories, with insights into enhancing and constraining factors for scaling up. In this issue of the LEISA Magazine, we include the main findings of these workshops (Gonsalves p.6; Guendel et al p.11) and a selection of the most interesting cases.

Success stories

As we see it, there are 3 groups of success stories:

- Success stories from IPM & zero tillage. Integrated Pest Management (IPM; especially in irrigated GR rice in Southeast Asia but increasingly in other crops and parts of the world) and Zero Tillage (ZT; especially in commercial rainfed agriculture in Latin America). These approaches are now being embraced by millions of small and large farmers, some of them combining both. The benefits of these approaches are clear: lower costs and higher income, less damage to human health and the environment (IPM), significant reduction of soil erosion (ZT) and increased production. In Southeast Asia more than one million small and larger farmers have been introduced to IPM in so-called Farmer Field Schools. The focus in IPM is gradually shifting from pest to crop to system management, and from a technical to a community approach, which in Indonesia is becoming a social movement of farmers (Dilts p.20). ZT first spread rapidly among large farmers, but now even small farmers are adopting it, as technology adapted to their conditions is becoming available. ZT in Latin America is basically developed by farmers but is now getting massive support from research and government.

- Success stories from organic agriculture, sometimes in combination with fair trade. This trend is a result of increasing ecological awareness and market demand for ‘healthy’ organic products, especially from consumers in rich countries.


Towards agroecological agriculture

All these success stories show that situation and farmer-specific entry point technologies are very important as they bring fast economic results, make further investments possible and create the enthusiasm, motivation and self-confidence necessary to further develop more integrated agroecological agriculture (LEISA) and sustainable livelihoods (Y D Naidu and Edith Van Walsum p.24, Mahajan p.46). Later these technologies may become less important, as broader and more flexible sets of technologies are adopted, depending on changing needs, conditions, problems, insights and skills. Zero tillage farmers in Brazil, for example, have realised that...
innovation, farmer promoters and farmer-experimentation for learning and approach, which combines Walsum, p. 24). The Farmer Field School processes. (Y D Naidu and Edith Van scientific knowledge are all important and integration of indigenous and participatory monitoring and evaluation, and learning, farmer experimentation, and planning, farmer-to-farmer exchange groups taking up joint experimentation and stakeholder concerted action. (p.25). Consortia of farmer organisations, NGOs, government and international agencies and recognition of the complementary roles these different stakeholders play is clearly important for success as well (Y D Naidu P.24; Catacutan et al p.33; Kwasiga et al p.37).

Participatory development of site specific agroecological agriculture and sustainable livelihoods requires basic rethinking and relearning of land use and rural development by farmers as well as development staff and researchers. Indian agriculture is undergoing a rapid transformation under globalisation, from a simple way of making a living to a complex economic endeavour. As such, extension service too has to make appropriate readjustments in its goals and strategies, while its principles and processes remain intact. (R Dwarakinath, p.13). The PMHE programme in Sri Lanka proved that motivation and retraining of government staff in participatory and agroecological approaches is possible, also on a large-scale (Wettasinha p.41).

Supporting farmer movements

The potential of participatory and agroecological approaches to increase agricultural production, eradicate poverty and improve the natural resource base comes out clearly in these cases. The fact that large numbers of farmers are following these approaches already says a lot. Additional economic data, although very difficult to gather because of the complexity of agroecological systems, is providing further insight into why, where and when low-external-input technologies can work (Ruben p.50). Supporting farmers’ movements for agroecological and social development could indeed be the most effective way for ‘going to scale’.

However, many forces and conditions work against the spreading of agroecological development (Holt p.30 and others). Some of the constraints are: lack of awareness about the potential and necessity of agroecological agriculture; and participatory development amongst policy makers and researchers; the prevailing Green Revolution and biotechnology paradigm; lack of funding of agroecological and participatory programmes; lack of credit for small farmers, especially for development of agroecological agriculture; lack of appropriate training; clientalism on the part of NGOs which keeps farmers dependent on external support; inability to influence policy makers; lack of participation of farmers in local and national decision making and the lack of cooperation and coordination between farmer, consumer, environment and development organisations. Most agricultural policies still focus solely on increased yield per area, usually associated with packages of external inputs and technical interventions. In many cases, these policy frameworks are the principal barriers to the spread of more integrated, sustainable and productive agricultural systems (Mahapatra et al, p.45).

Yet it is important to get strong and coordinated support from local and national administration, research, communication, education, CSOs, private companies and funders as confirmed to some extent by the IPM (Indonesia), Landcare (Philippines) and water harvesting (India) movements. As pointed out by Taylor (p.16), the risk of losing the sparks of innovation happens when the bottom-up approach is changed into a top-down approach as commonly followed by governmental agencies. It is therefore very important that international policy institutions, governments and research make the switch:

- From reductionist approaches to interdisciplinary, holistic and social learning approaches,
- From commodity-oriented research to system-oriented research at the local level,
- From high-external-input systems to low-external-input systems that enhance agroecosystem functions and optimise the sustainable use of local resources,
- From a centralised, expert-driven approach to a decentralised, agroecosystem-specific approach to science that complements farmer and indigenous knowledge and experimentation, and recognises and enhances local research potential.

To advocate for and contribute to this process, strong alliances between farmer organisations, consumer organisations, development and environmental civil society organisations and researchers, who already have made the switch, are very important (p.30, p.24).
Going to scale

What we have garnered from recent workshops

Julian F. Gonsalves

Agricultural and Natural Resource Management (NRM) research and development projects often have too little impact in terms of farmers reached, poverty reduced, sustainability of the development process or influence on policy. Researchers and development workers are therefore constantly being challenged by colleagues, funders and policy makers to maximise impact and “scale up” the development process. In the present situation of reduced financial support to agricultural research and development (R&D) the interest in “Going to scale” is growing. Larry Harrington and colleagues (2001), in a paper presented at the NRM research meeting in Penang, warn us that if insufficient attention is given to scaling up, “we will have failed in our purpose of contributing to poverty alleviation, food security and environmental protection”.

Evaluations of programmes are necessary to understand which approaches to scaling up are most effective or to show the effectiveness of new approaches, for example in participatory development. In the past two years, there have been at least four international events dealing with scaling up. ICRAF sponsored a workshop in September 1999, at Nairobi, looking primarily at how agroforestry innovations should be scaled up within a research and development framework.

Two events were sponsored by the CGIAR NGO Committee and the Global Forum for Agricultural Research, (one held in October 1999 at the World Bank in Washington and the other in April 2000 in Silang in the Philippines). The most recent event focussed a bit more directly on NRM research: this was held at Whistable, sponsored by the Natural Resources Institute UK in January 2001.

The approach, in at least three of the four workshops, was to use cases and participants own experiences to derive common principles. Although the case analysis did not allow for drawing up any general models, some important principles and lessons were identified at the workshops. The goal of this article is to discuss these principles and lessons with the purpose of improving our general understanding of the process of scaling up. Some references are also made to relevant important literature. Several of the cases presented in the Philippines workshop are included in this issue of the LEISA Magazine.

What is scaling up?
The first emphasis of scaling up is on reaching larger numbers of people. Also, the need to get specific innovations and methodologies accepted by conventional approaches to scaling up are most effective or to show the effectiveness of new approaches, for example in participatory development.
**Types of scaling up**

Among the first to discuss types of scaling up approaches was Clark (1991) who, in examining the work of NGOs, distinguished between three types of scaling up: **project replication, building grassroots movements and influencing policy reform.**

In their paper to the Philippine workshop, Uvin and Miller discuss in considerable detail a taxonomy of scaling up. They suggest looking at scaling up in terms of structure, programme, strategy and resource base, and propose four types of scaling up: quantitative, functional, political and organisational (Box 1).

Carl Taylor, on the other hand, using primarily his experience in the health sector, has suggested four models of going to scale: **blueprint, explosion, additive and biological** (see box Carl Taylor p.16). He makes a case for what he calls a biological model for scaling up involving a number of stages. Action usually begins at the community level and starts with a few simple ideas. With success more ideas are tested. When a cluster of innovations are worked out, that community based action becomes a basis for learning by other communities. These communities serve as learning centres. Other communities learn from that experience and adapt it further. Finally, when a larger enabling environment is put in place the ideas spread rapidly. These approaches are discussed in more detail in his article on p. 16 and in his forthcoming book.

At the Washington meeting, an attempt was made to systematise the various perspectives of scaling up arising from the workshop discussions (see figure 1). There is the spatial dimension wherein technologies spread to larger numbers of farmers over a wider area. However, this should also include helping communities strengthen their ability to solve their own problems. The temporal dimension refers to the need to know when a certain technology or process can be scaled up. The economic dimension reminds us that the cost effectiveness of the effort has to be kept in mind. Does the availability of resources to scale up guarantee that the efforts of an institution will be sustained? The technological dimension often includes the need to diversify the range of technologies or to implement complementary approaches in order to achieve synergism. Scaling up is always multi-dimensional, involving technological, process, institutional and policy innovations.

**Vertical and horizontal processes: up, down and out**

One of the more easily understood concepts is that scaling up has both **vertical and horizontal** processes. The vertical process represents efforts to...

---

**Box 1. Four types of scaling up**

(Uvin and Millar, 2000)

**Quantitative**: A programme or an organisation expands its size by increasing its membership base or constituency through increase in geographic area or budgets.

**Functional**: A community-based programme or a grassroots organisation expands the number and the type of its activities e.g. from agricultural production to health, nutrition, credit, training, literacy, etc.

**Political**: The organisation moves beyond service delivery towards empowerment and change in structural causes of underdevelopment. This usually involves active political involvement and the development of relations with the state.

**Organisational**: Community-based programme or grassroots organisations increase their organisational strength to improve the effectiveness, efficiency and sustainability of their activities. This is through diversifying fund sources, increasing level of self-financing/ income generation, ensuring the enactment of public legislation earmarking entitlements within the annual budgets for the programme, creating external links with other organisations, or improving internal management capacity of staff.
influence policy makers and donors and is generally institutional in nature. The horizontal process refers to the spread across communities and institutions and geographic boundaries (see figure 2).

Larry Harrington and colleagues (2001) introduced the following ways of understanding scale as it is applied to NRM work:

- **Scale of analysis**: from plant to plot to farm to watershed to regional scales;
- **Scale of intervention point**: “high-level” interventions (e.g., policy change, adjustments in institutional arrangements or property rights, fostering collective action) vs. “low-level” interventions (e.g., programme of farmer experimentation or extension on specific NRM practices);
- **Scale of investment** in intervention strategies: small vs. large investments in extension, in farmer experimentation programmes or in efforts to inform policy;
- **Scale of community empowerment**: the number of communities with capacity to undertake their own research and adaptation through processes for local learning;
- **Scale of geographical coverage** of an NRM practice: whether the practice is limited to a village or watershed, or whether it has attained regional or national significance;
- **Scale of impact**, e.g., the extent to which desirable outcomes (improved system productivity and resource quality) are achieved through NRM research.

The scales are linked and greater impacts are generated from higher levels of investment in suitable interventions or from more efficient use of these investments through reliance on community empowerment leading to expanded geographic coverage of suitable practices.

**No to blue prints and cookie cutters**

The strong interest in planning for scaling up could lead to an undue reliance on predetermined activities and strategies. There were early reminders from David Korten and Carl Taylor (p.16) about the limitations and dangers of relying on blueprints. Carl Taylor warns us that *there are no universal solutions but only universal processes* in social development work. At the Washington meeting, Norman Uphoff stressed that what we need is frameworks and not blue prints and that too often we try to find straight line solutions and to routinise innovation. Standardisation is often stressed, but what we probably need is systematisation, which is less “strict”. Uphoff warned participants of the dangers of viewing scaling up as merely replication (the cookie cutter approach) since quality scaling should involve multiplication through adaptation not replication. It is probably in this context that the limitations of model and pilot projects are also increasingly being raised. The emphasis on strengthening organisational and learning capacities emphasised by numerous participants (probably the single most mentioned concept) results from an appreciation of the concerns raised by Korten, Taylor and Uphoff.

**Building capacities to innovate and the learning process approach**

To achieve scale and to also ensure sustainability in programmes of technological enhancement, the strengthening of local capacities to innovate may often be just as or even more important than the technologies themselves. Knowing and understanding the underlying principles are crucial. Strengthening peoples’ capacities to innovate were often mentioned in the four workshops as being important in up-scaling and sustaining impact.

Knowing the principles behind a technology and improving capacities to innovate helps communities cope with changing environments and new problems. Many feel that technologies are usually adapted not adopted. One example of wide-scale adaptation by farmers can be seen in the Landcare programme in the Philippines (p.33), where thousands of farmers have decided to adopt a range of soil conservation approaches based on a basic principle of vegetative strips across contours. Farmers utilise the contours in a diverse manner, some letting vegetation establish itself while others enhance the grass strips by planting fruit and timber trees species. Still others plant annual species and short-term perennials or use the contours to raise fodder grasses.

Farmers, communities and local organisations that are exposed to a wide range of available best practices can locate which ones are relevant to their particular situations. The usual approach here is to talk about the value of a basket of technological options. Presenting farmers with options could foster or strengthen the drive to innovate or adapt.

**Divergence of methods**

Peter Horne of CIAT made a point at the Washington workshop about the value of a divergence of methods. This, he said, was good primarily because of the huge complexity from site to site. He felt that local people needed to be assisted with resources and knowledge to deal with the complexity in their own situation. If the capacities to innovate are to be strengthened, farmers probably need not only a wider diversity of technologies but also a wider diversity of methods or approaches. The ICRAF meeting referring to collaborating institutions indicated that in order to learn from successes and failures with using these diversities of technologies and methods, there was a need to develop an analytical learning culture amongst partners.

The ongoing documentation and systematisation of experiences with wide ranges of technologies, strategies and methods is a useful tool for discovery and dissemination. These best practices must guide the process of scaling up: systematisation of lessons needs to be planned for, if successful sharing is to take place at different levels. Unfortunately there is a lack of documentation on best practices dealing with sharing between farmers, NGOs and different institutions.

**Partnerships and alliances**

The nature of most efforts to scale up involve a multiplicity of players and it is therefore not surprising that all the four workshops stressed the importance of institutional collaboration and partnerships. Many would argue that partnerships are an essential element of a strategy to scale up: to reach larger numbers of people in horizontal scaling up, a wider range of organisations might be involved. The need for widening the representation of stakeholders, especially policy makers and local leaders was also stressed. Involving a wide range of actors at different levels also helps capitalise on different strengths among various players. In vertical scaling up, efforts are
It was felt that efforts to enhance and strengthen the social capital would be important for flexibility at all stages and the need to continually review the agreements on collaborations and exit strategies. Partners must accept that collaboration has its own costs and resources must be set aside for this.

**Ownership and social capital**

However, as was emphasised in the Washington meeting, merely engaging multiple stakeholders in a consultative process is not adequate to build ownership. Instead, strategic alliances need to involve the participation of a broad range of stakeholders as early as possible and in different stages of the project cycle. The report of the Whitstable meeting (Gündel and Hancock, 2001), which focused on project cycle dimensions, pays special attention to this. It reminds us of the need for flexibility at all stages and the need to avoid rivalry in terms of ownership of innovation as it is not the technologies which matter as much as the process. It is indeed a reality that competition and mistrust between players exist in almost all situations and that these are considered as impediments to scaling up efforts. Inter-institutional collaboration and coordination is not only important, it is crucial and a prerequisite for maximising impact. However, we are reminded that reaching consensus and gaining commitment from the different stakeholder groups are important first steps. In this context, several references were made by Juan Sanchez at the Washington meeting about the value of social capital (Box, p.17). He emphasised the value of the ‘meses de concertacion’ (roundtable discussions involving community members, their local government and those engaged in R&D). It was felt that efforts to enhance and strengthen the social capital would improve the quality of partnerships and foster increased networking. The value of cooperation is stressed, whether in arriving at common policies or in joint action. Different institutional interests are considered in negotiating strategies. Transparency and accountability of the different partners is fostered.

The ICRAF workshop stressed the value of a strong network of partners with shared and complementary agendas. There will, however, be a need to continual review the agreements on collaborations and exit strategies.

Participation and scaling up

Participation studies (1999), while recognising the value of champions, many participants cautioned about the fragility of a process championed only by a single person. This is probably why the IDS Participation studies (1999), while reinforcing the importance of champions also reminds us about the challenge for the future to multiply the number and effectiveness of champions, especially local ones. Relying too much on a single champion could affect the long-term sustainability of the effort and limit its expansion to other areas. One has to find and support champions wherever they are - in government, in donor agencies, in civil society etc.

**The critical role of markets as driving forces**

The Washington and Nairobi meetings put a considerable amount of emphasis on the value of markets in influencing scale. Paul Rice at the Washington meeting had three core messages for participants: 1) all farmers produce to market – they need to produce but they also need to sell and earn; 2) farmers need to organise themselves to achieve economies of scale to produce economically and profitably; 3) consumers are increasingly concerned about social and environmental concerns and are often willing to pay more for quality products. Farmer organisations can help their member farmers take advantage of the economies of scale and better prices. Co-operations marketing large volumes of produce can negotiate better prices and access distant markets. But, for many farmers it is also equally important to recognise their need to reduce risks.

**Success** in small-scale initiatives can provide inspiration to go to scale.

**Crisis** - crisis situations and the raising of questions on where technologies, projects, programmes, etc. should lead to - can also become sparks.

However, Carl Taylor warns us, that in moving from a bottom-up to top-down approach, the spark that produced the initial empowerment can be lost. Experts can “engineer out the spirit and human energy that gives heart, motivation and life to the process.”

While recognising the value of champions, many participants cautioned about the fragility of a process championed only by a single person. This is probably why the IDS Participation studies (1999), while reinforcing the importance of champions also reminds us about the challenge for the future to multiply the number and effectiveness of champions, especially local ones. Relying too much on a single champion could affect the long-term sustainability of the effort and limit its expansion to other areas. One has to find and support champions wherever they are - in government, in donor agencies, in civil society etc.

In all the workshops discussed in this report, the question invariably arose about whether participation is sacrificed during efforts to scale up. Uphoff,
Esman and Krishna (1998), in their review of cases, cite the case of the National Dairy Development Board’s work in India which indicates that, inevitably, there are risks of “dilution and diminution of effort” and that patterns of organisation and operation were compromised in scaling up. However, the authors emphasised that the criterion of success is whether the capacity for collective action that has been fostered is used by rural people to improve their lives in other ways.

At the Silang workshop, the issue on how to maintain not only adequate levels of participation but also how to assure quality in expanded programmes was raised. While believing that participation should not be sacrificed in scaling up, many participants felt it was inevitable. A lack of participation however, could also mean that benefits are not being maintained. It could also suggest the existence of tension resulting from different paradigms of development e.g., top-down approaches used in a government bureaucracy and the bottom-up approaches of NGOs. However, if a right approach is used, a NGO-GO link can help NGOs to mainstream participatory approaches that they have developed or are engaged in.

Broad-based grassroot level movements can also provide the pressure to bring about change at higher levels. An initiative like a farmer field school can be important, because these are often precursors of local institutions (e.g., farmers’ associations). The large-scale, people-centred IPM programme in Asia has built, over the last decade, local capacities to engage farmers in active learning. A decentralised farmer-led approach, we know, has been useful in tackling location-specific demands of tropical agroecology (see Dilts, p.20). However, this programme also involved a process of large-scale re-education, often using training as the initial strategy.

Planning for scaling up: implications for project design, monitoring and evaluation

The Whitstable workshop raised a concern about the fact that in natural resource management research projects, the issue of scaling up is only addressed in the post-project phases. In other words, scaling up is not thought of earlier nor is it planned for. Participants at the workshop in Silang came up with a checklist to facilitate planning. Participants of the ICRAF workshop made an overview of the fundamentals of scaling up agroforestry research. The Whitstable meeting identified key strategic elements for scaling up activities in the pre-project, implementation and post-project phases. All of these have implications for project design for which a guiding framework was created (Gündel et al., p.11).

One important implication is the need for donors to fund a pre-project phase where a considerable amount of time and effort is engaged in situational analysis, defining target groups, objectives and outputs and a monitoring and evaluation (M&E) system. This also involves an engagement in policy dialogue on a “poor” agenda. The Whitstable report also suggested that the focus on M&E should be established at an early stage but not necessarily with rigid indicators but “with initial ideas of what aspects of process and what levels of impact will be addressed.”

In their book, “Reasons for Success”, Uphoff, Esman and Krishna (1998) raise concerns about donors being wedded to the project approach despite evidence that this is not a good way to use resources. They believe that if a project is carried out in a learning process mode, many of the pitfalls of a blue print orientation can be avoided. The authors call upon donors, especially when they have confidence in a certain approach to rural development and certain leadership and model of operations, to fund programmes on a “wholesale” rather than a “retail” basis, allowing for flexibility and complementarity. The bottom line, according to Uphoff, Esman and Krishna, is that while funding is required, “successful rural development programmes depend more on ideas, leadership and appropriate strategies than money!”

References

- Taylor CE. 2000. Sustainability and equity in scaling up social development. IIRR Workshop.
The overall question addressed during the workshop in Whitstable, UK, was "what can research contribute to scaling up". The mix of participants from relevant projects in Nepal, Uganda, Bolivia, Colombia, UK and the Philippines, from the North and the South, from academic and development backgrounds helped to bring out key issues, which contributed significantly to the process. During the workshop the participants discussed the importance of a framework for scaling up and identified strategic elements. The workshop was part of a wider review process facilitated by the Natural Resources Institute on which a report is available.

A project design framework for scaling up NRM research

Sabine Güdel, Jim Hancock and Simon Anderson

Table 1. Activities, strategic elements and attributes of scaling up processes for NRM research

<table>
<thead>
<tr>
<th>Project phases</th>
<th>Activities relevant to scaling up</th>
<th>Strategic elements towards successful scaling up</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-project</td>
<td>Situation analysis</td>
<td>Engaging in policy dialogue on pro-poor development agendas.</td>
<td>Inclusive &amp; plural</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Identify community, institutional, and environmental enabling and constraining factors to scaling-up.</td>
<td>Recognise differentiation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Appraisal of institutional capacity of agencies to be involved in scaling-up required.</td>
<td>Consulative</td>
</tr>
<tr>
<td></td>
<td>Identifying target groups</td>
<td>Identifying appropriate research objectives and outputs within development processes to ensure widespread uptake</td>
<td>Collegiate</td>
</tr>
<tr>
<td></td>
<td>Setting objectives and outputs</td>
<td>Identify indicators and planning, monitoring and evaluation methods to measure impact and process of scaling-up</td>
<td>Participatory</td>
</tr>
<tr>
<td></td>
<td>Developing M&amp;E system</td>
<td>Building networks and partnerships to increase local ownership and pathways</td>
<td>Constructive</td>
</tr>
<tr>
<td></td>
<td>Collaboration</td>
<td>Develop appropriate funding mechanisms to sustain capacity for expansion and replication</td>
<td>Innovatory</td>
</tr>
<tr>
<td></td>
<td>Capacity building</td>
<td>Building capacity and institutional systems to sustain and replicate</td>
<td>Vertical sharing</td>
</tr>
<tr>
<td></td>
<td>Institutionalising</td>
<td>Demand, supply &amp; support actors identified.</td>
<td>Start early</td>
</tr>
<tr>
<td></td>
<td>Partnership forging</td>
<td>Other resource actors contribute with products and by building technical capacity</td>
<td>Collegiate</td>
</tr>
<tr>
<td></td>
<td>Networking</td>
<td>Multi-media dissemination of findings.</td>
<td>Inclusive</td>
</tr>
<tr>
<td></td>
<td>Awareness raising</td>
<td>Aggregate and assess findings from individual projects and derive policy relevant information</td>
<td>Pro-active</td>
</tr>
<tr>
<td></td>
<td>Policy dialogue</td>
<td>Central to scaling-up processes in providing evidence to influence policy-makers, in deciding what should be scaled-up and how this might be achieved</td>
<td>Concerted</td>
</tr>
<tr>
<td></td>
<td>M&amp;E and Support studies</td>
<td>Concerted action required on a regional level</td>
<td>Accessible</td>
</tr>
<tr>
<td></td>
<td>Exit strategy</td>
<td>Should involve the target group as disseminators</td>
<td>Participatory</td>
</tr>
<tr>
<td></td>
<td>Dissemination</td>
<td>Built upon M&amp;E. Representatives of target part of assessment team. Technological and livelihoods assessment required.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Impact assessment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
potentially useful outputs. It may also serve as additional material in evaluations of research programmes.

Key strategic elements for successful upscaling

1. Engaging in policy dialogue on pro-poor development agendas.
   Research needs to be placed in the context of local, regional and national development agendas as this helps identify key entry points and the major needs. This is ideally done at an early stage so as to shape the overall project design, but can also be done through regular reviews of the project or at other development discussions.

2. Doing situational analysis to identify community, institutional, and environmental enabling and constraining factors to scaling up.
   The likelihood of scaling up will be increased if key hindrances as well as opportunities are found out at an early stage, thereby allowing key channels for scaling up research activities and development outcomes to be identified. All enabling and constraining factors cannot be identified at the outset and the research activities (project) will need to build in mechanisms to review new issues and plan around them or with them. This is crucial in terms of addressing the real priorities of target groups, as well as in identifying catalysts for scaling up.

3. Identifying appropriate research objectives and outputs within development processes to ensure widespread uptake.
   Rather than identifying outputs and forms of dissemination just at the end of research, these should be shaped at an early stage together with stakeholders and users, and subsequently modified throughout the project. These outputs may include identification of solutions, which can be very technical in nature.

4. Identifying indicators and planning, monitoring and evaluation methods to measure impact and process of scaling up.
   Should be central to scaling up processes in deciding what should be scaled up and how this might be achieved, and in providing validated evidence to influence policy-makers. To manage, learn from and gain credibility, methods and measures for assessing pro-poor and NRM impact on different scales needs to be elaborated. The intermediate supporting processes and institutional changes to achieve this will also need agreed measures and review mechanisms. Various participatory methods are vital to ensure open feedback. A major area of this work is in identifying cost-effectiveness, so as to work towards it.

5. Building networks and partnerships to increase local ownership and pathways to scaling up.
   In order to achieve the above elements, researchers and their institutions need to develop relationships throughout the process which can then develop into firmer partnerships with development and other institutions, always with a firm link to the grassroots and end users. Personal relationships also foster direct interest and enthusiasm, increasing the chances of institutionalisation and spread of ideas.

6. Building capacity and institutional systems to sustain and replicate.
   The capacity to manage ‘learning through doing’ is critical for scaling up to be an on-going and dynamic process. It is also important especially in the implementation and exit stage to internalise new ideas within institutions, especially within communities and government.

7. Developing appropriate financing mechanisms to sustain capacity for expansion and replication.
   Maintaining flexibility and ensuring funding for softer activities (local and regional networking, capacity building, consultations) is considered in the pre-project stage. At the same time, one has to begin building ownership through clear shared resource commitments to activities. Seek opportunities for self-sustaining results in research outcomes, or at least mechanisms for reducing costs when expanding, replicating etc. Take into account the very real dynamics between technologies and wider economic spheres, and financial constraints facing local and government institutions.

The strategies and framework proposed are not prescriptive and have to be understood as a guide only. The limited number of successful cases in scaling-up research shows no absolute strategies or prioritisation of elements.

Major implications for research

The adoption of the above framework for guiding future research projects and programmes will have major implications for researchers and research programme managers:

- Project calls have to be addressed towards institutions and organisations in the target regions to strengthen the implementation of a demand-led approach.
- Shifting the emphasis of research to partners in developing countries may require the development of regional capacities in terms of demand-led approaches, sustainable livelihoods and scaling up and development of partnerships, and innovative means to fund, monitor and evaluate these strategies.

The implications for researchers and their institutions are:

- The establishment of functioning partnerships with in-country agencies, particularly in terms of working within participatory development processes and producing outputs suitable for addressing and communicating local and regional situations.
- That researchers and their institutions have to become accountable in their contribution to scaling up, which in turn requires the identification of indicators that show research effectiveness in terms of extent of impact.
Extension Education in the context of a changing agriculture

R. Dwarkinath

Indian agriculture is undergoing a rapid transformation under globalization, from a simple way of making a living to a complex economic endeavour. As such, extension service too has to make appropriate readjustments in its goals and strategies, while its principles and processes remain intact.

There was a time when agriculture was entirely a self-contained, local pursuit of livelihood, in a traditional setting. But, as science progressed, some elements of new knowledge were seen as useful in agriculture. Modernization of agriculture began as linkages between science and agriculture started taking shape, as advisory service or extension education.

The pre-requisites for this linkage to be functional are a body of validated knowledge viewed as useful, practical and acceptable, a perceived need for this knowledge in the farming community, and a linking mechanism. Here, by connotation, advisory service is one that prescribes or offers new knowledge to the farmers, recognizing the local need for such knowledge. Extension education, on the other hand, goes a step beyond, and not only offers new knowledge but also guides farmers in its proper application under local conditions. In simple terms, while the advisory service provides the “know how”, extension education provides both the “know how” and the “do how”.

It is perhaps necessary for the academicians to recognize adequately the fact that modernization of agriculture is not merely a matter of induction of new technology into farming, but is also a matter of capacity building among the practicing farmers. This capacity building function is widely recognized as “out-of-school education” or “adult education”. This venture, which involves both communication and education, has come to be known as extension education.

It may be useful at this stage to take note of the common definition of extension education:

Extension education is a system of working with farmers, their families and communities, employing non-formal educational procedures, to relate useful, practical knowledge to their needs and interests, thereby enabling them to make satisfactory improvements in their ways of living and making a living.

MOVING A STAGNANT AGRICULTURE

On attaining freedom, India inherited not only a stagnant agriculture but also an enormous food deficit. As a part of the rural reconstruction effort, the country then launched the Community Development Programme and the National Extension Service, introducing a multi-purpose extension functionality, supported by a set of subject-matter specialists. This approach, working with available support services and available technologies, succeeded in building up durable contacts with the rural communities and local leaders, and winning their trust and confidence. Even though the progress in agriculture was modest at this stage, the contacts established with the farmers proved to be very useful when the new agricultural technology, based on seed-fertilizer combination, became accessible, which led to the historic green revolution.

During this period, as agricultural progress acquired greater urgency, the multi-purpose extension functionary was made to work exclusively as the agricultural extension functionary. This phase of extension work, marked by a tremendous amount of enthusiasm on the part of the farmers, extension staff, researchers, local leaders and policy makers, delivered the country into food security and modest exportable surpluses. The extension system, thus, had made its share of contribution, effectively.

But then followed a phase of slackness, in the wake of green revolution, by when the stagnant agriculture had become a surplus producing system. The extension agency lost its direction; farmers began feeling contented; research output slowed down; and the policy makers relaxed. But, it is at this stage that the extension system should have been geared up to deal with the second-generation problems, and the other follow up agricultural development activities.

NEW CHALLENGES BEGIN TO SURFACE

Over the last fifty years, overcoming the huge food deficit may be regarded as the major achievement to the credit of Indian agriculture. However, many after-effects of green revolution began materializing in the subsequent years. Further, several fresh problems also got added to the development task. Out of these, some that are relevant to extension service are indicated here.

Purpose of Farming is changing

Farming is progressing in phases. To begin with, it was family farming. It was entirely a self-contained venture, with the seed coming from the past harvest, manure from the farm wastes, and labour from the joint family, while the produce was for the family’s consumption. But, faced with an enormous food deficit, the country had to go into surplus farming, making use of the new agricultural technology.

Here, while the farmers produced far beyond their family needs, the surpluses entering the market did not create any price collapse, since the supplies largely remained below the market demand.

At about this time, the rural society was moving away from the barter economy, into the money economy, as the system of village services and artisans was falling apart. As such, all farmers, big and small, began seeking cash incomes. Farmers, therefore, began entering some kind of market farming, to meet the family expenses on the one hand, and to purchase farm inputs, on the other.

There were, broadly, three kinds of market farming ventures. One, a large number of small farmers, occasionally using purchased inputs, produced mainly commodities that were saleable in local shandies. Two, a small number of elite farmers took to high-tech farming, to produce export commodities of international standards, against known demands. Third, a considerable number of mid-size farmers, with access to technology, resources and political power, went into producing huge surpluses of common commodities, ignoring the demand limitations. It is they who created the market gluts and price slumps.

Then, the recent processes of liberalization, privatization and globalization are pushing the farmers into a vast competitive market. As a result, entry into commercial farming...
has become necessary. Here, farming has to become a business. In this phase, market surpluses will have to face not only the domestic competition but also the international competition under WTO regime.

**Farming conditions degenerate**

The conditions under which farming is practiced have undergone vast changes. This has taken place both on the farms and around the farms. These changes together make a tremendous impact on the farm enterprise as a whole.

**Environmental degradation** is a major one. Under semi-arid conditions, farming requires the close support of the environment. Depletion of vegetation on non-arable land has become the bane. Primarily, the recycling of organic matter is drastically reduced. The microclimate is also adversely affected. Rainwater loss results in enhanced runoff and lowered infiltration, reducing the ground water recharge. Further, the bio balances between the cultivated crops and the vegetation around, gets seriously upset. All these affect crop stability and yield levels.

**Impaired soil fertility** is another factor. Arable lands have suffered heavily in the last few decades. Erosion of the top soil, particularly the finer fractions from uplands; reduced soil organic matter affecting nutrient content; water holding capacity; and the soil biological life are the major problems. Under irrigation too water logging and salinisation are becoming serious problems. All these, again, affect farm productivity. Excessive reliance on farm chemicals is not only causing soil health problems but also many pollution problems.

**Our farm holdings** tell another story. Over the years, the farm holdings are getting marginalized. Within 30 years, between 1961 and 1991, the average size of the holdings has come down from 2.69 ha to 1.57 ha. With Karnataka as a case, within 25 years, between 1971 and 1996, the small and marginal holdings have increased in number by 125% and coverage by 110%. Thus, the uneconomic holdings are increasing, unabatedly.

**Infrastructure support**, as farming moves towards commercialization, is no different from what it was twenty years ago. The backward linkages including input supply, credit, power and irrigation have seen no marked improvement. If anything, their dependability has suffered. The forward linkages including roads, transport, storage, processing and marketing facilities have far less to claim.

**Farming communities are troubled**

The rural population keeps growing. In 1951, the total population of 36cr. had 83% in rural areas. By 2001, the total population was 102 cr. of which 72% was rural. But, in absolute numbers, the rural population increased from 30cr. to 74cr during this period. The farmland remaining the same, this amounts to an enormous pressure on land.

Meanwhile, the outlook of the farm population is also changing tangibly. The increasing exposure to urban life and mass media has transformed their worldview. Many of the farmers now think that farm life is dull, farm work is drudgery, and it is not a paying occupation. The educational levels having gone up, farm youth feel that there are other ways of making a “good living”; and farming is their last choice. Thus, farm life seems to have lost its earlier dignity.

**DEVELOPMENT APPROACH FOR THE FUTURE**

Agriculturally, India is placed in a peculiar position. We have a large human and animal population, with relatively limited land resources. Our farm productivity is not of the highest order. Our record of conservation and management of natural farm resources, at least in recent times, is not in the commendable category. A large proportion of our population is still trapped in farming for a living, and will perhaps remain there for decades, since the prospect of trade and industry absorbing the excess rural population is remote. As such, there is no other option than making a greater investment in the development of our farm resources and human capital.

In the wake of green revolution, we see three prominent consequences. One, our farmers have accepted and absorbed some of the advanced farm technologies, and have gained a degree of surplus production capacity. At the same time, they have become over-dependent on fertilizers and pesticides, and have resorted to monocropping, neglecting sound traditional practices. Also, they have begun to overlook the necessity of maintaining good environmental support to farming. There are repercussions, which we are facing now.

Another present day concern is the cumulative impact of liberalization and globalization, taking the form of WTO regime. With the removal of quantitative restrictions, foreign farm goods of competitive cost and quality have begun entering the domestic market. As a result, even to remain in our own market, our farmers have to quickly gain the management abilities for cost cutting and quality regulation. With this end in view, determined development efforts have to be mounted, now.
Survival requires efficiency
First, the on-farm production efficiency must improve vastly, leading to reduction of areas now assigned to different enterprises, which can facilitate diversification of farm products, in response to market demands. Second, conservation and management of natural resources on the farms, which is not given adequate attention at present, has to be given due priority, in the interest of sustainable agriculture. Third, the farm environment, which has so far suffered extensive depletion, has to be rapidly rebuilt through community efforts, again with agricultural sustainability in view. Agricultural extension must focus on this.

As farming moves towards commercialization, the backward and forward linkages and infrastructure facilities will assume enormous importance. In fact, without this support, agricultural development as a whole will be constrained. At this stage, post-harvest technologies and value-addition processes will also gain critical prominence. This, again, is a new focal point for the extension service.

Facing the limitations of small holdings
Small and fragmented holdings pose the most serious problem to Indian agriculture in coping with the WTO challenges. The potential of the concept of small farmer consortium, proposed some time in the past, has not been fully explored. Voluntary “interest groups” of small farmers have to be promoted more seriously. Pooling their land resources and efforts, they may be able to gain the benefits of scale economy, at least to some extent. “Self-Help Groups” seem to have kindled some hope in this regard. Survival of such groups appears to be linked to their voluntary nature, indicating that any top-down approach may become counter-productive. Contract farming opportunities may be another approach. Also, labour-intensive enterprises, tuned to the situational advantages we have, is an option. Farmers must be guided to explore these alternatives.

Promoting sustainable agriculture
For a country like India, with narrow land-man ratio, soil farmed for ages, and depleted forests and farm environment, sustainable agriculture must be a matter of highest importance. So far, this has not been a prominent part of the development effort. Even the traditional practices contributing to sustainability have been ignored in recent years. Therefore, sustainable agriculture, with emphasis on resource conservation, bio mass production, crop rotations, eco-friendly production practices and combination of enterprises, must be high priority extension goals, in the future.

Building people’s organizations
Further, development efforts in future have to be largely people-centered. For, much of what requires to be done in the days ahead will be within the capability of local people. Resource management, restoration of environmental support and building local facilities will all be handled quickly, efficiently and economically, if the people concerned are sensitized, enthused and guided. Hence, organizing people for development will be a major future extension task.

RESETTING THE EXTENSION FOCUS
Globalization of the Indian economy will have a pronounced impact on the agricultural sector. The new market pulls will bring into existence an elite category of Indian farmers which is interested in and capable of entering into commercial farming, often catering to the international markets. At the same time, this impact will also lead to the formation of a larger segment of small and marginal farmers, generally in the resource-poor category, basically engaged in subsistence-cum-cash farming.

The extension service required by these two segments will be distinctly different. The commercial segment will require, over and above the general technical services, specialized technical services related to their commercial ventures, mostly from private agencies, while the larger segment of subsistence farmers will require general technical services, relevant to the times.

Farming community differentiates
The commercial segment will be a relatively smaller portion of the farm population, essentially made up of venture-some farmers. These are people who are constantly on the lookout for new profit-making ideas, in an enterprise-based agriculture. Also, they will often take it as a matter of prestige to be on the forefront of the modernization process.

The subsistence segment is a large proportion of the farm population consisting of small and marginal farmers. Meeting the family food needs will be their major concern. Also, as compelled by the present day lifestyles, they must ensure some cash income to cover family expenses and farm expenditures. Hence, they seek to combine cash crops with food crops. Or else, they take up some off-farm employment.

Prospective extension service
The public extension system - For a long time to come, till the trade, industry and service sectors are able to absorb the surplus rural manpower, the country is bound to carry a predominantly large subsistence segment in the agricultural sector. Most of these farmers are stuck in agriculture, with nowhere else to go. They will have to be provided with a farm-door extension service, aimed at incremental farm improvements, within their resource limitations. Here, attention will be devoted to improving the on-farm production efficiency, resource management and environmental support, along with market management.

The specialized technical service - Keen attention needs to be paid to promoting the growth of commercial farming, recognizing that this will create more wealth and employment in the rural sector. Since the competence required to provide this service will be normally beyond the public extension system, groups of professional experts in different fields will be encouraged to provide this service, as private agencies. A few such groups are already in existence. This will be supplemented by the services provided by input firms, processing units and farmers’ organizations.

Reconditioning the extension service
As an economic sector, agriculture, compared to industry, suffers certain handicaps. Depending on the monsoon, its productivity is unstable. Also, in the market, it faces unstable price situations, since surpluses or shortfalls arise out of seasonal conditions. It is a highly unorganized sector. All the same, it is providing livelihood for the bulk of the population. For all these reasons, the democratic regime will have to provide the extension service to the farming communities as a welfare service. Hence the need for strengthening the public extension system to provide an efficient service, keeping the future tasks in view.

(Paper submitted for the National Seminar on “Responding to Changes and Challenges: New Roles of Agricultural Extension”, College of Agriculture, Nagpur, 7-9, February 2003.)

R. Dwarakinath
Former Vice Chancellor, UAS, Bangalore.
Address (Res) : 143, 6th Main, IV Block, Jayanagar, Bangalore - 560 011.
Scaling up social development

Carl E. Taylor

It is apparent that our current models of development are not working, especially when judged by the fundamental criteria of sustainability and equity. Scaling up of social development is our most urgent problem. It is a pleasant task therefore, to share experiences from the health sector about the complex concept of learning to scale the complex concept of learning to experiences from the health sector about pleasant task therefore, to share our most urgent problem. It is a equity. Scaling up of social development fundamental criteria of sustainability and laying the foundation for the Punjab’s international consultants was involved in parallel, at the Ludhiana Agricultural medicine in India in the 1950s. In the first department of community research centre was based in the village of Narangwal at a teaching health centre our Johns Hopkins Rural Health of development are not working, only a universal process to find appropriate local solutions in a biological growth model.

Three basic principles in building up valid processes of scaling up

Principle One – Three way partnerships are essential to maintain an effective working balance between bottom-up and top-down action.

1. The community must be treasured and always be in eventual control. This is the bottom-up component.

2. In a new role, government and NGO officials must learn to support community empowerment. This is obviously the top-down component and it is here that most development projects fail because all the reflexes of officials are conditioned to demand that they be in control. A basic conclusion is that officials need to make a tremendous shift in their attitudes and values. They should realise that nothing will facilitate their success as leaders so much as delegation of control. As people close to the action take over the routine and dull tasks of management, it permits those higher in the hierarchy to focus on policy and innovation that will eventually set new directions.

3. Experts must guide the process by learning how to synthesise scientific innovation with traditional wisdom. The key concept is that the experts’ responsibility is to bring the outside-in. They store and apply knowledge from around the world and open new horizons applying the best of modern science and simplifying it for rapid general use in improving human welfare. However, changing their attitudes and values is almost as difficult as re-training officials.

Principle Two – Action must be based on locally specific data.

Growing experience with participatory methods of data gathering and decision-making shows that one of the commonest reasons for failure of development efforts has been the long tradition among officials and experts that they deliberately and consistently excluded the people from participating in decisions about

GOING TO SCALE MODELS AND CHARACTERISTICS

Blueprint
- Experts select successful interventions from local or international experience
- Blueprint is designed by outsiders and imposed with regulations and targets
- Community participation becomes top-down community manipulation
- Tight supervision and incentives achieve quick results but lose sustainability

Explosion
- Focused interventions selected as national or global priorities
- Tight control and efficiency assured by vertical hierarchy for one purpose but usually duplicating management
- Effective in filling infrastructure gaps if then integrated into whole system
- Social mobilisation can strengthen local system but over-riding local priorities often destructive and not sustainable

Additive
- Bottom-up comprehensive and culturally adapted development at community pace
- Stimulated and financed by outside donor (NGO) usually works well in local area-great impact of inter-sectoral action
- Phasing over to local control often difficult because of dependency and being accustomed to outside pay and equipment
- Too slow to rapidly go to scale or fit into national system; need a top-down enabling environment for scaling up

Biological
- Existing successful community-based projects are selected which demonstrate self-reliant empowerment
- Healthy communities are not mechanical structures but replicating organisms
- Each community becomes a biological growth node for exponential and rapid expansion with infrastructure for enabling environment, sustainability and standards for equity
- Integrated inter-sectoral development evolves naturally as communities learn to demand services for their priorities
their own future. Officials have learned the rhetoric of community participation, but it has in recent decades mainly been used in a distorted form for community manipulation. Data gathering for social development has been treated as a simplified version of social science research. People have been excluded from the process to ensure scientific objectivity. Modern experience is clear that the best way of promoting community ownership and empowerment is to get communities deeply involved in continuing data collection. The more important result is that when the people know how the data is gathered they trust the findings, feel ownership and are motivated to act.

Principle Three – Changes in community behaviour produce sustainable social change.

The most sustainable social development depends not on outside inputs of money or materials but on behavioural change among the people. The changes in behaviour must include all partners. We find that the most difficult part of social change is to change the attitudes, values and behaviour of officials and experts. Calling for behavioural change seems to have similarities to preaching about religious revival. It is easy to talk about but hard to do. Behaviours are embedded in social norms. They change most readily when people experience practical demonstrations that meet their basic or imaginary needs and self interest in promoting the welfare of their families and friends. Most convincing are messages about successful innovation that are transmitted by people like themselves. Biological models of scaling up work mainly because they themselves. Biological models of scaling up work mainly because they

Three dimensions of going to SCALE

Through fieldwork in many parts of the world we have observed the biological approach to be the most common pattern for large-scale expansion. It unfolds in an organic way that appears at first hard to describe. But after analysing numerous examples, there appear to be three clusters of commonalities which we term dimensions and indicate by acronyms: When development is initiated by local people, action typically begins with community-based SCALE One; they try a few ideas, see success, then try some more. When a cluster of innovations are worked out, that community-based action becomes a demonstration for other communities, or SCALE Squared, providing formal training to other communities and refining ideas in an on-going way for greater local adaptation. When a larger enabling environment is created to nurture this process, the demonstrations and ideas to spread; the dimension that unfolds then is SCALE Cubed.

SCALE One – Successful Change as Learning Experiences

Bottom-up social development has gradually spread throughout the world with successful examples of empowered communities in every country and region. In different places the empowerment process started with varying kinds of projects focusing on innovation, in subjects such as: agricultural extension, income generation for women, education for women, primary health and nutrition care, family planning or small-scale crafts and home industry. A combination of factors that clicked with local culture, available resources and indigenous skills created the synergy to empower the community to continue expansion to a variety of other innovative changes. Each community must start this process from where it is. The challenge is to identify priority issues that are both locally important and do-able. Because community energy grows mostly from success, perhaps the best starting point is a project that can mobilise the greatest energy – perhaps one involving primary health care, credit for women, forestry, emergency services. The starting point need not be an indigenous success. Who initiated the project is not important (for instance, in addition to community, a NGO, university, or government programme could have started the work.) as long as the community recognises the project as a success and accepts it as part of the community. This acceptance cannot be enforced, as then the community will not believe that it has the competence to continue.

Outsiders often press for action to begin with the most needy, but doing so reduces the chances of sustainability. Development is momentum, and momentum cannot be gained when the first step is uphill. Projects should be targetted at the neediest sections only after there is an example of success to build from. The subgroup that can least afford failure, should not be expected to take the lead position of being the first project where the probability of problems is higher and their competency levels are lower for solving those problems.

SCALE Squared – Self-help Centres for Action Learning and Experimentation

Few good interventions can be transferred directly from one setting to another, without some degree of adaptation. People adopt ideas and methods most readily when they see them being implemented in conditions similar to their own by people who are like them.

The central source of power in scaling up comes from a cluster of SCALE One communities which are selected as being representative of a whole region and then the motivation, capacity and resource base is provided to form them into a learning centre. Here bottom-up, top-down, and outside-in functions come together. Control of their future must remain with communities, but the extension function requires more active roles by officials and experts. This is where experts bring in and try out new ideas. A SCALE Squared centre is both a community-based laboratory and a school without walls. One lesson builds upon another; findings from one demonstration lead to solutions for new problems, as capacity is built and the knowledge base keeps expanding. These learning centres have two functions.

1. The first function of a SCALE Squared Centre is educational but with a new learning by doing orientation. The action learning function moves communities beyond concern just for their own progress to intentional extension of the change process to other communities. The SCALE One communities welcome people from other communities to learn how they can help themselves. In these exchanges and workshops both groups share questions as answers are worked out with mutual benefit. Doubts are cleared when visitors see people like themselves solving problems they struggle with every day. Some development projects spend as much as 50% of their budgets on bringing in consultants to draw up plans and do evaluations. Spending that money on arranging for community members to go to parallel projects and learning centres will almost always yield a far higher rate of return. Taking citizens and policymakers on trips may seem extravagant, but it opens doors to new areas of knowledge and provides role models to help them adapt what they see working.

2. The second function of a SCALE Squared Centre is experimentation.
Experts from many disciplines are brought in to work with community leaders in the new discipline of participatory research. Their synergistic interaction combines scientific understanding with traditional wisdom. Those of us who have had the privilege of doing this kind of research know that usually the most innovative and usable insights come from the village people and we can mainly supply skills and tools which they simplify and quickly learn to use even without our sophisticated jargon.

SCALE Squared centres should resist the temptation to become showcases. Communities understandably want to take credit for having a "good" project, and activists in the community want affirmation. But making SCALE Squared centres look spectacularly good often make unreplicable, both them and the lessons they are trying to teach. As SCALE Squared centres become established in regions, it is useful to form a network for sharing among them; here modern technologies can help extend the reach of traditional experiential learning.

SCALE Cubed – Systems for Collaboration, Adaptive Learning and Extension

Expanding social development successes to all communities in a region requires systems for extension based on a network of SCALE Squared Centres. Experience shows that communities left to their own resources usually do not spontaneously learn from each other. The systems needed for bringing about wider impact resulting in regional change include:

1. **System for sustainable collaboration and partnership** using approaches such as: seed grants; opportunities for communication between and with SCALE Squared Centres; objective critiques of ideas and experiences between communities, officials and experts; and special regional events such as fairs, competitions, concerts, festivals and formal workshops to create a sense of being part of a larger, expanding movement.

2. **System for adaptive learning:** The purpose is to provide opportunities for step-wise learning as communities learn about themselves using annual self-evaluation surveys. They develop an annual work plan and evaluate each year’s achievements to do better incrementally. The SCALE Squared Centre provides the framework for testing new approaches to learning.

3. **System for extension of innovations.** I have been repeating the theme that the main difference from the blueprint approach is that in scaling up, the expansion of innovations grows biologically not mechanically in radiating ripples around SCALE Squared Centres. Officials and experts should not try to “remote-control” this extension, but let people do it themselves. However, growth will not happen by itself. Officials and experts are needed to create an enabling environment. They need to change their policies, laws, regulations and administrative infrastructure. People must be given control and very small incentives to change by providing simple resources not available locally. They need to change financing mechanisms, which mainly are designed to favour and suit the convenience of the people with money not those who use the money. They need to change basic relationships with the main service agencies: agriculture, health, education, public affairs, etc. Problems of inter-sectoral cooperation disappear when the communities have the right to ask for help. When communities build up capacity to know who can help and how to ask for it, then cooperation is sustainable.

Scaling up must start with successful communities and ensure a systematic process of replication to permeate a whole region so that all communities become SCALE One in being empowered to solve their own problems of social development. Some SCALE One communities will become SCALE Squared Centres. Other SCALE One communities will simply continue to build on their success, supported by demonstrations from SCALE Squared centres and the enabling SCALE Cubed environment.

If a government is out front trying to nurture the rapid spread of change, this community energy can mount very quickly. Expectations soar, people are ready to sacrifice (and others move in to take advantage) but the exponential potential is obvious. This energy can be quickly sidetracked if people begin to see leaders taking advantage of the momentum they have created. 

**Six criteria are needed to measure progress in social development.**

Modern management emphasises the need for indicators to measure progress. We have found that seeking universal indicators is unrealistic. Since every situation and community is different the specific indicators should be chosen to fit the local time and place. However, to have a rational framework, six criteria (within which local indicators need to be sought) must be defined.

1. **Collaboration around a Shared Vision.** Communities need to agree on the direction they want to go and a shared vision helps internal collaboration. This can evolve from immediate concerns or from underlying causal influences over time as observed in annual reviews.

2. **Equity is defined as reaching out to those in greatest need and in providing opportunities to those who have been deprived in the past.** The only way a whole community can improve overall welfare is when the groups, which have the greatest concentration of priority problems are helped to get better living conditions and lifestyle. In most communities local patterns of discrimination are deeply entrenched and outside pressure is needed to make the elite share. This can be done efficiently when top-down standards are set for communities that can be met only by improving conditions for those who have the greatest problems.

3. **Sustainability is where most social development has failed and it requires measuring from the beginning for benefits that will last.** Is development exhausting water, forest, and energy sources or increasing pollution? Are debt loads being incurred that cannot be repaid and will be passed onto future generations? Is change undermining treasured cultural values? There are always trade-offs that must be carefully, unselfishly and pragmatically evaluated.

4. **Interdependence not dependency is essential for a just and sustainable process.** Dependency produces victimisation and vulnerability to control by outsiders. In many instances outside assistance has been great in satisfying the egos of givers but has been terrible for the self-reliance that happens when capacity building is a primary goal. Development cannot be bought. Donors often want to pay start up costs to accelerate action but this will fail if this creates expectations both
Iterative action leads to sequential adjustments in interlinked relationships. Using annual surveys a community tries one idea, the next try makes it work a little better, more people bring in their own improvements and behaviour changes to produce new social norms. Iteration gives opportunity to identify those loose ends and fix them incrementally until all fit together with growing precision. Action should not wait for precision to be imposed from external quality standards; instead quality control should depend on internal building of capacity. Once people have agreed on starting a do-able action, it should start while interest is high. Then the emphasis should be to recognise that failures will be frequent. But getting the action right is not as important as getting action going and then improving the process. The amazing thing is that in community development this is what succeeds because people learn from each other and the whole is greater than the sum of its parts.

5. Holistic action at community level is automatically inter-sectoral.

Breaking development indicators into the bureaucracies’ use of agriculture, health, education, etc. destroys the basic need for holism in action. Solving combinations of priority problems leads communities to awareness of underlying causes. Synergistic entry points emerge as each activity opens understanding of new potentials. Together they strengthen the fabric of community and family life to produce a “rising tide” of progress, in which the big boats should not swamp the little and leaky boats.

6. Iterative action leads to sequential learning and continuing improvements in underlying causes.

On Social Capital and Partnerships

SOCIAL CAPITAL means “trust” and “cooperation networks”. As a form of capital, it is possible to invest on it to save and to stock it – but it is possible to lose it, too. The principal strategies for “investing” in social capital are:

- Create a “common space” among different institutions (social organisations, NGOs, public sector, entrepreneurs) to identify common goals as stakeholders.
- Make transparent the interests of the different institutions in negotiating common goals.
- Identify the “added value” of cooperation through the different types of support coming from each of the stakeholders. The added value is like the interest rate of social capital. The main OUTPUTS of social capital are:
  - Reduced “transaction costs” among institutions
  - Increased in the “cooperation values” in a community or region
  - Increased competitiveness of the stakeholders in the market.

How Social Capital Influences Scaling Up Efforts

Technical aspects

- Creates environment for farmers to reach agreements in their organizations to support an “inter-learning process” e.g. in sharing successful technologies
- Allows for agreements to be reached among farmers organisations, NGOs and the public to promote watershed management and forestry programmes and other natural resource management/protection strategies and programmes.

Political aspects

- Makes way for defining and implementing common policies that promote sustainable agriculture in a local/regional context (e.g. tax reduction for NRM projects, laws to punish pesticide use, etc.)
- Facilitates designing and implementing common programmes for sustainable agriculture in a watershed and mobilising institutional resources (human, financial, physical). For example, the “round table” in the Cajamarca project permitted the municipality to multiply its resources through social and private resources by a ratio of 1:3 (three-fold).
- Demonstrates to the national government the importance of cooperation in a region to raise more funds for the decentralisation process.

Economic aspects

- “Social Capital” makes possible new loans from banks to farmers organisations (social guarantees among farmers can serve as replacement/alternative to collateral requirements in the absence/lack of property rights to land).
- Makes it possible to design and implement new strategies to “reduce the risk” of markets (new roles among municipal governments, farmers organisations, NGOs, local banks and the private sector can increase the efficiency of institutional resources and to create “cooperative guarantees” to attract investments and loans).
- “Social Capital” among social, public and private institutions can increase the competitiveness of a region in the country (competitive advantages instead of comparative advantages).

Juan Sanchez

Carl E. Taylor, John Hopkins University, 615 N-Wolfe St., Baltimore NED 21205, USA.
Email: ctaylor@jhsph.edu
Shortened version of a paper presented at the International Workshop on “Going to Scale: Can we bring more benefits to more people more quickly?” held at the International Institute of Rural Reconstruction (IIRR), Silang, Cavite, Philippines, April 2000.

Reference

From farmers’ field schools to community IPM

Scaling up the IPM movement

Russ Dilts

A people-centred IPM movement has grown in Asia over the last ten years, and is now spreading to parts of Africa, Latin America, and the Middle East. During this period, many variants have evolved, and continue to evolve, within the specific natural and operational environments of different countries, cultures, and communities. From the first Farmer Field Schools consisting of 25 farmers each to a people centred IPM movement, which counts several millions of farmers in many countries (e.g. more than one million farmers have been trained in Indonesia alone), the IPM programme has indeed gone to scale.

Farmer Field Schools - from extension to education

The IPM Farmer Field School programme emerged out of a concrete, immediate problem. Farmers were putting their crops, their health, and their environment at severe risk through massive abuse of highly toxic pesticides promoted aggressively by private industry and government. Pest species were becoming resistant and in some cases resurgent. What was called for was a large-scale decentralised programme of education for farmers wherein they would become ‘experts’ in managing the ecology of their field – bringing better yields, fewer pest problems, increased profits, and less risk to their health and environment. “Grow a Healthy Crop” is the first principle of the IPM programme.

The basic framework for the educational approach addresses three fundamental learning domains (adapted from Habermas):

1. Technical domain of work: If one has ever seen the look on the face of a farmer who doesn’t comprehend why he lost his crop, despite all his hard work, one can readily understand the empowerment that occurs when a farmer regains control based upon direct understanding. From this emerged the entire ‘Farmers as experts’ approach underlying the Farmer Field School (FFS). In Field Schools farmers themselves learn to conduct experiments independently, create learning materials on their own, manage a ‘field laboratory’, and plan for special sessions such as ‘IPM Field Days’ or ‘IPM Popular Theatre’. Farmers do not master a specific set of contents or ‘messages’, rather they master a process of learning that can be applied continuously to a dynamic situation: the ecology of their field.

2. Practical domain of interaction and communicative action: Farmers do not work in a vacuum. Their attitudes, decisions, perspectives, and practices are greatly influenced through their interaction with their peers and community. From the outset the Field School intentionally included processes and methods that would provide such interaction. Participants work together in small groups to collect data from the field, generate analysis through discussion, present results, conduct experiments, and make group decisions for field management. For many farmers, unaccustomed to even speak in front of groups, this confidence building and process mastery is the most important outcome of their Field School experience.

Interaction skills are also addressed directly through exer-cises in communication, collaboration, group problem solving, and discussion/analysis techniques. The processes used for analysing social reality are in essence the same as those employed in ‘discovering’ ecological realities in the field. These skills are applicable not only to IPM, but also to everyday life in the community. These skills do not come overnight, but must be practised and reinforced, and elaborated upon over time. This is assisted by the length of the Field School which lasts across an entire season and is begun with preparatory meetings which also include participatory methods of problem analysis and participant selection such as labour analysis, mapping, and joint ‘learning contract’ formation.

3. Domain of emancipatory action for empowerment: Emancipatory learning is the next step, in which people examine their internal or group constraints and options as they relate to a larger social, political, economic, and ecological environment. In this sense, the initial Farmer Field School, and even follow-up activities such as Farmer-to-Farmer training, farmer action research/field studies, etc. are just ‘starters’ for empowerment and local institution building. Further efforts are needed to allow for the evolution of empowerment outside their immediate control that must be addressed through other kinds of action.

Going beyond Field Schools - farmers as experts

Through evaluations and case studies we found villages where the cadre of trained farmers had ‘captured’ their entire community as they continued to spread and deepen IPM. However, in other locations we found that, even where good quality Field Schools had taken place, the programme had vanished with little trace. Based upon this, early in the programme a number of activities we started aimed at strengthening the roots of the programme within the community. Our goal was sustainable farmer initiative and the ‘institutionalisation’ of
IPM at community level - this meant going beyond field schools.

- **Farmers as trainers** - We postulated that if farmers could master the process of ‘discovery learning’ in their own fields, they could also facilitate other farmers in their learning. The first ‘Farmer to Farmer’ IPM field schools emerged spontaneously. They were then built in as an integral part of the programme. Currently, nearly 50% of all IPM Farmer Field Schools are organised and run by IPM farmer trainers. Over 20,000 Field School graduates have gone on to be trained as farmer trainers and conduct Field Schools for other farmers.

- **Farmer Researchers** - Most believed that farmers would be limited to simple experiments and ‘demplots’. However, in hundreds of locations farmers are currently engaged in field scientific investigations of complex local problems. Farmers are undertaking programmes previously thought impossible, such as the rearing, breeding, spreading and maintaining of complexes of bio-control agents (parasitoids, virus, bacteria) while training other farmers in their use. Now, IPM ‘farmer researchers’ are often invited to national research meetings on IPM to present their findings and their programs. Needless to say, researchers unfamiliar with the independence, intelligence, and diligence of IPM farmers are initially shocked.

**Community IPM - from expert farmers to empowered communities**

Again, we found that while this increasingly complex array of farmer-based activities was of great help in broadening and deepening IPM, the programme still resembled a ‘menu’ of follow-up activities and dependency upon central and provincial project funds remained high. Institutionalisation of IPM at community level had to be pursued.

- **Farmers as strategic planners and organisers** - In many locations networks of active IPM farmers had been established, and many of the functions previously done by government or NGO fieldworkers had been taken over. However, the organisers of most activities, except at village level, remained with outsiders. Within Community IPM, activities were developed that would provide trained farmers with the skills and opportunities to build their own institutions. For this, a number of different fora were initiated, at first funded by the national program. These included seasonal planning meetings for IPM farmers from villages and sub-districts. Herein farmers were trained in participatory planning methods while making actual plans for their groups, allowingplans and planning skills to be honed through interaction with other farmers. Groups were linked across communities and across villages into networks where they could discuss their plans and share experience. Farmers were also trained in methods of ‘lobbying’ local government and applying effective demand through organising. Once again, the farmers surprise people in their ability to develop thorough and detailed strategic plans incorporating problem and social analysis, ‘vision’, ‘principles for action’, strategy, tactics, and operational plans.

- **Farmer policy making** - As the ‘Reformation’ period in Indonesia has begun, so has IPM Farmer involvement in local politics since their networks represent one of the few organised institutions composed of true farmers. Most of these activities were focused at the sub-district level, which is seen as a ‘strategic universe’ for farmer organising. In Indonesia, the sub-district is the interface between government and other services (banks, markets, etc.) and rural communities. Villages are often too small to provide the scope of institutions that farmer organisations need to interact with to improve their access to resources.

- **Institutional diversity** - An array of IPM farmer institutions has sprung up across the country. These vary from single-village focused activities to province-wide ‘IPM Farmer Congresses’ involving thousands of people. Some IPM farmer institutions have taken the form of networks, with meetings and leadership revolving across specific geographic areas. Others have formed more formal ‘associations’, some even with the official legal status of ‘foundation’. Some have made close links with local government at various levels and serve as training/service agencies for government programmes. Others have linked to local political or social forces, such as Islamic organisations. In the last 6 months, some have even begun to dabble in the heretofore forbidden realm of ‘practical politics’, organising campaigns and getting IPM farmers elected to village head positions.

As a point of principle within Community IPM, the training, education, funding, and other opportunities and resources provided do not foresee or proscribe any specific institutional outcome. The job of outside organisers is to provide tools, methods, skills, experience and opportunity only. It is up to the farmers themselves if they want to organise, for what, and how. At present various forms of IPM farmer organisations are still emerging, growing, dying, evolving, stalling, prospering, disappearing. Current efforts from the ‘facilitators’ involve bringing farmer organisers into the analytical dialogue through programmes geared to provide farmers themselves with the ability to document and analyse, to ‘map’ the progress of their institutional initiatives and to formulate ways to further strengthen their efforts.

**Institutionalisation and civil society**

The goal of community IPM is the institutionalisation of IPM at community level. The Gerung case (see box p.21) provides a look at how alumni in one sub-district in Indonesia are working to institutionalise IPM in their villages. Specific organising activities include reactivating farmers groups, organising a sub-district alumni association, and taking advantage of water users associations. The farmers groups are planning and conducting a variety of activities to help farmers overcome specific field problems. The alumni association and water user associations serve to spread the results from field studies to all farmers in the sub-district.
Apparently the leadership skills of farmer IPM trainers, their ability to facilitate open processes and group decision-making, has been recognised by local farmers. The farmer IPM trainers have been elected to leadership positions of farmers groups and maintain prominent positions in the water user associations. Local governments have provided funds to support Field Schools conducted by farmer IPM trainers. The provincial agriculture service believes that the activities of IPM alumni will lead to a sustainable agricultural system in Gerung. And having put themselves on the local institutional/organisational map, alumni organisations are becoming institutionalised through the legitimacy accorded to them because of their activities.

An important outcome of community IPM activities as they accomplish institutionalisation of IPM at the village level is that civil society in a given village is also strengthened. Government, non-alumni, and other local organisations are legitimising IPM and the IPM organisations being established in Gerung. This institutionalisation will influence behaviour patterns for all local organisations in Gerung. Hence, the conditions common to a strong civil society are being established. The civil society that evidently is taking root in Gerung will enable the community of farmers in Gerung to better manage the ecological and social conditions common to a strong civil society that evidently is taking root in Gerung. This institutionalisation will facilitate open processes and group decision-making, has been recognised by local farmers. The farmer IPM trainers have been elected to leadership positions of farmers groups and maintain prominent positions in the water user associations. Local governments have provided funds to support Field Schools conducted by farmer IPM trainers. The provincial agriculture service believes that the activities of IPM alumni will lead to a sustainable agricultural system in Gerung. And having put themselves on the local institutional/organisational map, alumni organisations are becoming institutionalised through the legitimacy accorded to them because of their activities.

Keys to successful upscaling

Despite going against “conventional wisdom and conventional approaches”, IPM has grown to be a farmer-driven movement in Asia. Looking closer at the process of scaling up, some keys to success can be found:

- Trusting in people as being able and willing to take control of their lives, communities and environment and capable of dealing with the ecological and social complexities of the programme.
- Having a concrete entry point addressing a multi-faceted problem
- Pressing on realising that nothing worthwhile succeeds overnight.
- Developing a shared vision through continuous dialogue and reflections on accumulated experience
- Being aware that methods and approaches are not “neutral” and allowing for human views to be incorporated
- Making efforts to push down roles which reside “at the top” as in the case of strategic planning which is now done at community level by farmers
- Giving room to leadership to emerge, be built up, shared and rotated to maximise “human capital”
- Building “social capital” by helping people to learn to organise towards achieving goals that are worthy
- Tolerating, encouraging and enjoying diversity as the stimulus for learning.

Community IPM as an entry point for Sustainable Livelihoods

For the last 10 years, IPM training programmes in Asia have been pursuing multiple objectives with considerable success - farmer empowerment, conservation of biodiversity, food security, community education, protection of human health and policy reform amongst them. These multiple objectives have arisen from a growing recognition – among governments, NGOs, donors and farmers themselves - of the interdependence of different aspects of development, and the need to put people at the centre of the development process.

These concerns have given rise to the concept of ‘sustainable livelihoods’. Within a Community IPM programmes, participatory approaches (including farmer-to-farmer training, action research and policy dialogue) are being used to transform a range of assets (including natural, human and social capital) into a number of livelihood outcomes, including security of incomes, food supplies and health, and improvements in rural civil society.

Russ Dilts, FAO Programme for Community IPM in Asia, PO Box 1380, Jakarta 12013, Indonesia
Tel: (6221) 719-7887,
Fax: (6221) 719-7961,
Email: CommunityIPM@ATTglobal.net

Shortened and edited version of a paper presented at the International Workshop on “Going to Scale: Can We Bring More Benefits to More People More Quickly?”, held at the International Institute of Rural Reconstruction (IIRR), Silang, Cavite, Philippines, April 2000

More cases and specific information can be found at the Community IPM Website: http://www.communityipm.org

IPM farmers in Indonesia demonstrate for their rights.
Initiatives of farmers in spreading the message

Experiences from Gerung Sub-district

I PM National Programme efforts established a critical mass of IPM alumni in Gerung. Since 1996, IPM Alumni have been organising several types of activities that, for the most part, they have funded themselves. They have been very active and creative in informing others about IPM and in establishing their own organisational network. They have forged steadily ahead in the development of a local farmer-led IPM Programme.

Farmer conducted field studies - Alumni conducted field studies have increased farmer understanding of ecological issues, to adapt and test out recommendations in local conditions, and to increase alumni confidence regarding their understanding of specific practices.

“Farmers get worried during the first couple of weeks of soybean growth because of the appearance of bean seedling flies. Although only five percent of the plants may be lost, farmers begin spraying at this time. So that we would know when and at what levels damage could be sustained without significant loss in yields my friends and I set up this study. Planting distances are also important to this issue so we have worked with the farmers of Kebun Ayu Village who are conducting a planting distance study. We will use this study to establish a set of basic practices among the farmers in our Farmers Group in the planting of soybeans.” - H. Patuchorrohman, IPM Farmer Researcher

Alumni helping others to learn about IPM - IPM Alumni in Gerung have used all means, formal and informal, to help educate other farmers in the villages about IPM.

• Religious training as a vehicle for IPM dissemination - Twenty-nine year old Rusdi Aminullah, a farmer IPM trainer from Lembang Village, serves as a religious teacher at the Madrash Nujumul Huda in his village. In the classes that he conducts he usually finds a way to incorporate IPM into his lessons.

“I don’t necessarily rely upon the curriculum or the school’s schedule. Every time a topic arises that is connected to the environment, nature in general, or health I discuss the basic principles of IPM with my students. I hope to plant the seed of love for God for the enjoyment of humanity not for humanity to destroy. If I can plant this seed now, they will grow to appreciate the importance of nature. I would be thankful if at the very least they will be able to influence their parents.”

• Dissemination of IPM by women through informal groups - Women often take advantage of informal situations to discuss household issues with each other. Ms. Syifa ‘iyah of Lembang Village, an IPM alumni says:

“I often gather with other women in the bruga (meeting place) and talk about IPM. I also teach at the Madrash and every time we hold religious instruction for women. I slip in information about IPM. I have told them that in this world, if you have nice plants you surely are going to have pests. But if there are pests, there will also be natural enemies that prey upon them. These natural enemies are there to help farmers. I have also talked about the danger of pesticides to the environment and to people.”

IPM farmers organising - IPM Alumni have taken their own initiative to create a multi-tiered structure of semi-formal and formal groups. They have established an IPM Alumni Association through which the groups keep in touch with each other. The goal is to develop a system to sustain the IPM movement in Gerung. These efforts are independent of outside agencies.

• The Bruga as the foundation for an IPM movement - The custom of people gathering in the bruga of a household has been taken advantage of by IPM alumni to create a foundation for a semi-formal IPM network. The bruga of households are being used as meeting places for IPM discussion groups. These groups form the backbone of a farmer controlled IPM Network. According to Bachriandi, farmer IPM trainer, “Spreading information about IPM via bruga is appropriate, we farmers don’t much care for formal meetings. At the bruga we can talk about IPM in a relaxed and informal manner without worrying about protocol. Farmers usually gather in the bruga in the afternoon as it starts to cool for a cup of coffee. While families have always had bruga, the role of the bruga has expanded in village life. The bruga serves a greater social purpose. With the advent of IPM an additional role has arisen for the bruga: they now serve as neighbourhood forums to support the spread of information about IPM and to strengthen the understanding of farmers regarding IPM principles. The bruga has given birth to farmers who embody the spirit of IPM. They are changing how they farm.”

• Farmer groups reorganised - The farmer IPM trainers and other alumni in Gerung Sub-district have provided the leadership to breathe life back into inactive farmer groups. Alumni note that their FFS experience provided them with new ideas and a new perspective on how to work effectively as a group. As alumni brought new energy to their farmers groups, farmers in general learned that alumni had something new to offer both in terms of knowledge and motivation. They have helped members of their farmers groups to improve their farming practices by involving them in learning through field studies. IPM alumni, including former IPM trainers, have become the heads of their farmers groups and as such the nodes of an IPM movement. Among their roles as heads of farmers groups, the former IPM trainers have worked to connect one farmers group with another via the IPM network that has grown up. Farmers groups have become the second tier in the organisation of an IPM movement in Gerung Sub-district. The farmers groups provide bruga discussion group members with a forum for discussing IPM issues among a larger group of farmers. Farmers groups provide a context in which farmers can plan and effectively manage a variety of activities that respond to their needs.

• Sub district level organisation - The next tier of alumni organisations is at the sub-district level. “Along with other farmer IPM trainers and IPM alumni we are in the process of creating an IPM Alumni Association at the sub-district level. We feel that the primary activity of the association will be to expand the application of IPM by farmers via the implementation of field studies in response to field problems identified by farmers.” says Rizalihadi, a farmer trainer involved in setting up the organisation.

• A mega-tier - Bachriandi and Rizalihadi have promoted a new initiative - the inclusion of water groups to form a network that is more inclusive and more extensive than an IPM Alumni Association, a collective of farmers groups, or neighbourhood brugas. The same key individuals, IPM alumni and farmer IPM trainers, are in both, but there is a potentially larger audience for IPM by including water users groups. The heads of water groups meet regularly. This provides a forum that allows for communication amongst all affiliated groups.

“Rizalihadi and I agreed to try to expand our organising to truly cover all of the sub-district. Fortunately I am still trusted by farmers to co-ordinate the Collective of Farmers Water Users Association for Pengga Kanan and Rizalihadi holds the same position for Pengga Kiri. We will use this opportunity to spread Field Schools throughout the watershed areas of the sub-district. Wherever the watershed includes another sub-district, we will be active there as well. I get really nervous whenever I see farmers using poisons. Many farmers still don’t realise that they are playing with fire. If they are unlucky they could die. We need to stop this. We, all of our farmer IPM trainers, are now actively pursuing this.” says Bachriandi. The network has helped farmers groups to take a co-ordinated approach to their activities. It has enhanced the ability of farmers groups to plan and organise activities, establish methods for sharing and exchange of information.
Balancing our Way to Scale: PTD for Sustainable Dryland Agriculture in South India

Y.D. Naidu and Edith van Walsum

Introduction

This paper is about collaborative action between institutions and individuals in South India, seeking to support small and marginal farm families in developing sustainable dryland agriculture. Over the past six years, AME - a resource organisation for sustainable agriculture - developed an approach to Stakeholder Concerted Action, with PTD as ‘entry strategy’. The initial focus is on field level guidance to farmers and NGO staff in conducting experiments with LEISA technologies. We then start working ‘upwards’ by feeding the lessons learnt in PTD processes into the formal knowledge systems of research institutions and the Government extension system. We work ‘sideways’ by facilitating the formation of stakeholder platforms of farmers, NGOs, researchers and Departments of Agriculture; and ‘forwards and backwards’ by involving banking institutions, input suppliers, and processing and storage experts in these platforms. In this paper we will discuss the various steps in the process and we would like to share some learnings that emerged from going through the process.

Choosing the entry points

A PTD process begins with the identification of entry point problems. In dialogue with farmers and institutions working with farmers in a specific area (NGOs, the Department of Agriculture and regional research stations), we identify the immediate problems farmers face in their agricultural production. Mostly such problems are symptoms of larger problems, which have to be addressed but which cannot be tackled at once. We start designing experiments with a few groups of farmers, on one or two important crops. With such experiments we want to address the immediate needs – e.g. to control certain pests and diseases, to increase the net profit from a crop. We work primarily on technologies that are weather permitting – almost sure to give the farmers an increase in their net profits and, if possible, their yields. In this way, farmers gain confidence to try more.

It is equally important to create an ambience wherein farmers gain or regain the confidence to experiment with different technologies and farming methods. More important than “giving the technologies to farmers” is to provide farmers with the tools to experiment with technologies, so that they can draw their own conclusions about what works and what does not.

Farmer groups

At the village level, PTD experiments are taken up by one or more farmer groups. This is often an existing Self Help Group, sometimes a Watershed Development Association. Sometimes groups are formed around the PTD process. There are mixed groups as well as single gender groups. In the latter case we encourage the spouse also participates in critical stages of the PTD process. We always work with groups, never with individuals. As a group, farmers learn faster and the group serves as a source of inspiration and encouragement. Being organised in groups, farmers can better negotiate for (eco-friendly) inputs, arrange for loans, marketing, etc.

We introduced a system of revolving funds. These were given via the NGO to the farmers’ SHG; it was the SHG’s responsibility to manage the funds. The purpose was to enable farmers to procure the macro inputs required for the experiment (seeds, organic fertilisers), in time. A more strategic long-term objective was to enable farmers to prove to the regular banks that the LEISA package tested by them is economically viable and thus worth considering for a regular loan. As the rural banks are already familiar with the concept of lending to SHGs, a logical next step would be to lend money to SHGs for eco-friendly agricultural inputs.

Connected farmers

Many small farmers feel they have few options left. Their dependency on (commercial and political interests).

Entry Points for PTD Processes

In Andhra Pradesh and in neighbouring districts of Karnataka and Tamil Nadu, groundnut was chosen as the entry point, as it is the main sustenance factor for a large population of farmers. Farmers did not have answers for many of the problems they are facing in groundnut production. We started a PTD process, suggesting the farmers to try out eco-friendly technologies that had been developed elsewhere.

In Tiruchi, Tamil Nadu, the thrust was towards integrated management of pests and diseases in paddy and cotton. The Farmer Field School approach was adopted because, especially for paddy this approach has proven to be very effective. Farmers were trained in agro-ecosystems analysis and they were encouraged to experiment with various low external input technologies – indigenous as well as non-indigenous.

Our team in Raichur, Karnataka, combined the approaches followed in the other two areas. Groundnut, cotton and paddy were taken as entry crops. Raichur District faces a peculiar situation; half of the district has a typical dryland scenario, the other half is in the command area of the Tungabhadra River Irrigation Project. Here the dependency on chemical inputs is high, and the whole system of agricultural production is strongly dominated by a nexus of commercial and political interests.
moneymakers is high, not just for money, also for agricultural advice and inputs (although SHGs have decreased their dependency to an extent). Depending on their resource base, the labour situation in their household, and ultimately on their own mind-set, farmers have an interest or have lost interest in farming. It is this interest, and a deeper motivation for farming that lies behind it, that forms the basis for meaningful experimentation.

In each PTD process, we found some farmers with this deeper motivation, who became a source of inspiration to many others. Through PTD processes, farmers can — to some extent — re-gain this sense of being connected with nature. It is extremely important to create a learning environment in which farmers are encouraged to re-connect with nature. This can be done by giving importance to observing agro-ecosystems and natural processes. Needless to say that this requires facilitators who are sensitive, knowledgeable and connected themselves.

Women are keen learners
Many a times, women are the keenest to learn and try out new things. They are experts when it comes to local agricultural knowledge, but they also realise that this does not provide them with a real way out of the situation they are trapped in. Women have shown to be very capable experimenters and also, once they are convinced of the benefits of a technology they become dynamic disseminators. Women increasingly manage agriculture in dryland areas. In 1996 about 30% of farmers involved in PTD processes were women, whereas in 2000 65% were women. How do we look at these figures? They show that women indeed are quite interested in learning new things about farming. They may also indicate an increased awareness on the side of institutions (NGOs and Departments of Agriculture) about gender issues. But perhaps the most important reason for this increased women’s involvement is the fact that women have become, to a large extent, the farm managers as there is an increasing tendency towards male migration. This is a tough situation for the women. Inspite of increased responsibilities and an added work burden, they still have little control over resources and face several institutional gender biases. When implementing a PTD process, these factors have to be clearly kept in mind. Forgetting to do so may lead to ineffectiveness of the PTD efforts, and worse, it may lead to more problems for the women (see for a detailed case study Kolli and van Walsum, 2001).

Involving research institutions
From an early stage, we began linking up the PTD processes to research institutions. These have an important role to play. First of all, they are providers of technologies. There is no shortage of useful technologies, the problem is one of interface between researchers and farmers. Research-tested technologies may be potentially useful, but before they can really be adopted by farmers, further fine-tuning is often required.

Research institutions are gradually becoming more open to participatory approaches to technology development. During the past years we have built up working relationships with researchers who became more and more interested in the PTD approach. Some started getting involved in PTD processes during weekends, as a hobby, but they gradually began to mainstream PTD and LEISA concepts and approaches in their work. We have seen researchers going through radical shifts in their thinking about agriculture, research and farmers.

Banks
Over the past ten years, the rural banking system has opened up to collective initiatives of small and marginal farmers, mainly through their positive experience with women’s SHGs. Individual bank managers, who noticed that the LEISA package of practices developed through PTD processes by farmer groups was economically viable, started adjusting their lending policies. There is still a long way to go however in convincing the banking system that LEISA is an economically viable and ecologically sustainable alternative to conventional high external input farming. So far it is easier to get loans for ineffective packages of chemical inputs and for drilling a borewell than for applying a package of ecofriendly measures.

Input suppliers
AME encourages farmers to try out ecofriendly inputs such as biofertilisers and biocontrol agents, and to assess for themselves what works best. Once farmers have seen that these technologies are effective, they also should have access to them. In all the PTD areas, farmers have worked out collective arrangements with eco-friendly input suppliers, with some initial assistance from AME and the NGO. In some cases, NGOs have started taking up production of biological inputs, to make them more accessible to farmers and also to see whether this could earn income for their own organisation or for farmer groups. A ‘second-generation’ type of PTD experiments has emerged in which NGO staff members, together with innovative farmers, have started experimenting with the production of bio-control agents and with alternative small-scale production processes of bio-fertilisers (in thermost flasks).

From joint experimentation to Stakeholder Concerted Action
Farmers, NGOs and AME share their learning on a regular basis: during field visits, training sessions, and in monthly review meetings. We invite researchers and government extension staff to join at important stages in a PTD process. Sometimes specific field days are organised where researchers, DoA staff, farmer groups from neighbouring villages and the local press are invited to visit the farmers’ fields and have discussion with the experimenting farmers. At the end of the season there are regional meeting of representatives of all PTD farmer groups across the three states. This regional meeting feeds again into the annual meeting of the Crop-based Working Groups for Groundnut and Cotton. The objective of forming these groups is to create a mechanism for joint learning and information exchange between institutional stakeholders – field level practitioners, researchers and policymakers - with a focus on ‘bottom-up’ flows of information, and also to strengthen important forward-backward linkages.

In 1997, AME organised the first meeting of the Groundnut Working Group (for a detailed account see Prasad et al. 1991). Researchers, suppliers of eco-friendly inputs, the NGOs involved in PTD processes, representatives of the DoA and bank officials participated in the meeting. Since 1997, such meetings have been held annually. They have become an event where stakeholders meet, discuss and review the outcome of the past year’s PTD processes in groundnut and other relevant developments in the larger ‘groundnut scenario’. Plans for collaborative action in the next groundnut season are being discussed. This working group has formed the basis for several joint research initiatives between researchers and NGOs (see for instance the case study of Kolli et al on the development of the Leaf Wetness Counter). Intensive learning is happening and up-front feedback is being given during these meetings.

In 2000, a Cotton Round Table was formed. This time, the prime mover was CEC, another support NGO that found
the ‘model’ of crop-based working groups useful. The Andhra Pradesh Cotton NGO Network (APCOT) was formed by a group of seven NGOs from seven districts in the State. The network tries to address the problematic situation faced by cotton farmers. Many of them became heavily indebted as a result of over-dependence on pesticides, poor yields and inappropriate advice. The Cotton Round Table supports this Cotton NGO network, feeding it with information about promising cotton IPM technologies that may be considered for testing, and assisting it in the analysis of experimental data. It also meets on a (bi) annual basis.

Training
Training is a very important ingredient of the whole process of PTD moving towards Stakeholder Concerted Action (see for a more detailed account Van Walsum et al, 1999). We go through a comprehensive training process with NGOs which has two phases, each covering a period of about three years. This sounds like a time-consuming process – it is! But we are talking here of a long-term capacity building process where practical field-based training is the entry point. From there, we move on to Training of Trainers (ToT), strategic discussions on scaling up, resource mobilisation and other related issues.

The support given to each organisation is specific, depending on background and experience – a different starting point and mix of social and technical development and a varying degree of complexity. The experience of the participants is the starting point for both practical and theoretical learning. AME prefers to work with NGOs that are active members of larger networks, because this enhances the potential for scaling up. We aim at building up network teams that can handle the training needs of member organisations in the long term.

First phase of training: Initially, the emphasis is on season long field training (on a weekly or fortnightly basis) around PTD processes. From the second year onwards, we start Training of Trainers (ToT) programmes for NGO field staff and farmers with proven training capacity.

Second phase - scaling up: The trained NGO and a core group of farmer trainers are expected to be able to carry on by themselves. AME monitors field-level training and PTD activities implemented by the NGOs and farmer trainers. Stakeholder fora are being strengthened, and there is strengthening of forward-backward linkages.

Table 1 shows the number of NGO staff and farmers who went through season-long training and ToT processes between 1996 and 2001. Shorter courses organised by AME are not included. The table shows the shift in training focus, from season-long training directly supporting PTD processes in the field, to a greater emphasis on ToT for NGOs’ staff and farmers. This led to a significant increase in numbers of farmers trained; most of them were trained by NGO staff, not by AME. AME continues to guide the NGOs and farmer trainers and monitors their training activities.

Effects of PTD processes
What have farmers gained from being part of a PTD process? Reviews with farmers groups, our own field level observations and a detailed impact study in one area (V. Khatana et al, 2001) lead us to the following conclusions.

Farmers’ knowledge about LEISA practices has increased: Notably about the importance of FYM application, the rationale for reducing fertilisers and pesticides, and alternatives available. In the farmers fields we see an increase in FYM application and therefore in organic matter content of the soil; farmers have stopped selling FYM. The use of fertiliser has considerably reduced.

AME reviews knowledge is not always applied. Sometimes inputs are not available (e.g. bio-control agents, bio-fertilisers, organic fertilisers). There may be labour constraints for women or men. Groundnut farmers may decide not to apply a LEISA practice when rains are poor, as, an alternative use of their labour (e.g. as farm labourer) gives safer returns. Generally, efforts are made to strengthen linkages with input suppliers, with SHGs playing an active role.

Farm performance has improved: Paddy yields have increased by 20–40% on average, cotton 10–20%, groundnut 20–30%. The quality of produce has also improved: E.g. groundnut in experimental plots, where more FYM and other natural fertilisers were applied, had better germination, more haulm, higher yield and higher pod-filling percentage. Organically grown paddy stores and tastes better and the seeds germinate better. Pesticide-free paddy is easier to shell: less rice is broken. In most cases, net profit has increased, sometimes considerably (this can be up to 40% when IPM practices are applied in paddy).

Farmers have increased on-farm biodiversity: inter / mixed cropping, trees, green manure, and reduced pest and disease incidence. There is a better soil health and moisture retention capacity. They are better able to see larger connections in agro-ecosystems. Farmers decided to grow trees on field bunds, as these provide living space for predator insects. Farmers are aware of the natural balance between pests and predators.

Social coherence got strengthened:
PTD as an activity has been integrated in the agenda of SHGs. Collective decision-making on input purchase, pest and disease management, and marketing, is happening. Farmers have improved access to knowledge centres: farmers visit as a group. They visit each other’s farms more frequently and learn more from each other.

Women are empowered by increasing their knowledge: Knowledge empowerment of women through PTD is an important aspect of a larger empowerment process. Women’s mobility has increased; they visit agricultural knowledge and training centres and regional farmer meetings. Especially for women, more knowledge leads to more self-respect and respect by others. In several cases, women resisted pressures of husbands to go back to chemical farming.

Some technologies are labour intensive especially for women, e.g. bio-fertiliser and mussoorie phosphate application. Other technologies are big labour savers, e.g. in cotton IPM women are spared the work of fetching water for pesticide application (+ 800 km walking with water per acre per cropping season). Women take labour reduce increase positively, as long as it is offset by benefits in terms of improved status and/ or more say in decisions about farm and money.

Health and nutrition improved: The reduction in pesticide use leads to less
health problems, less medical expenses, food tastes better and can be kept overnight because the storage capacity has improved. Skin rashes, loss of appetite, respiratory tract problems and reproductive health problems are frequently mentioned in connection with pesticides.

Innovation capacity and general awareness increased: farmers are applying the concepts learned through PTD on other crops. They also have taken up experiments independently. Confidence in own capacity to improve agriculture has increased. Farmer groups resist pressures of pesticides dealers and money lenders and collectively negotiate for ecofriendly input supplies.

Spreading results
Technologies and approaches spread, within one farm - from one crop to another, from entry point to system level. They also spread from farmer to farmer, from village to village, within and between organisations, and so on. In 1997 we started experimentation with 270 farmers in four districts, in collaboration with 12 NGOs. In 2002 we are involved in PTD processes with 1900 farmers in 27 districts, with an estimated outreach to another 10300 extension farmers, who get exposure to the technologies tested through PTD and are encouraged to also try them. Eight NGO networks are involved, with a total of about 180 member NGOs.

Our impact study gave insights into the way in which PTD tested innovations spread autonomously. It was found that the spread is quicker when the crop is more profitable, the technology is simple, and when there are low crop specific risks. Social cohesiveness of the group and the village also contribute to the extent of spread. In some cases farmers federations started playing an active role. This lead to a shift in strategy in areas with strong federations. From an earlier strategy that focused on capacity building at NGO level, we moved towards a strategy that views farmer institutions as the central pillars for scaling up. As the records of our partner NGO Myrada in Kadiri show, the shift in strategy was effective: whereas only 37 farmers adopted LEISA technologies through PTD in the period 1997–98, two Federations of Self Help Groups became involved in 2000 and were instrumental in involving 900 farmers.

Active NGO networks and good collaboration between NGOs and government extension and research institutions can help innovations to spread far and wide, once farmers have seen their usefulness. A good example is the very fast spread we have witnessed of IPM in paddy in Tamil Nadu: from just a few villages in Tiruchi District in 1997 to as much as 2 lakh farmers in nine districts in 2002.

The challenges ahead...
From entry points to Integrated Farming Systems: the challenge is now to move with the farmers and institutional partners towards more complex changes in their farming system. The aim is to gradually restore the ecological balance in the farm as a whole, moving towards more sustainable land use systems, etc.

Capitalising on the potential of people’s institutions: we have seen the enormous potential of people’s institutions to take PTD processes further. In future we will further capitalise on this, by giving strategic support and training to the key people in these institutions.

Strengthening Stakeholders Platforms: District level Working Committees which consist of a cross-section of important stakeholders should increasingly act as a platform for stakeholder concerted action at the district level. Similarly, the Crop-based Working Groups should become effective instruments for policy advocacy and lobbying.

Balancing the scaling up process: How far should we go in scaling up? Once going into the mode of stakeholder concerted action, lobbying and policy advocacy, there is a risk that we lose touch with field level realities - and being connected with them has been our strength. We need to evolve models of institutionalisation which can be replicated and taken further to scale by others.

Can PTD become part of an alternative route to globalisation? The dryland farmers in South India are facing crashing farm gate prices for almost every crop. Are there new niches for dryland farmers? These challenges we have begun to confront by looking together with the farmers, for alternative cropping and marketing systems.

Table 1: NGO’s and farmers trained

<table>
<thead>
<tr>
<th>Year</th>
<th>NGO staff newly trained</th>
<th>Farmers trained (cumulative)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Season-long training/PTD</td>
<td>ToT</td>
</tr>
<tr>
<td>1996</td>
<td>10</td>
<td>—</td>
</tr>
<tr>
<td>1997</td>
<td>64</td>
<td>—</td>
</tr>
<tr>
<td>1998</td>
<td>63</td>
<td>18</td>
</tr>
<tr>
<td>1999</td>
<td>70</td>
<td>36</td>
</tr>
<tr>
<td>2000</td>
<td>61</td>
<td>48</td>
</tr>
<tr>
<td>2001</td>
<td>80</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>348</td>
<td>137</td>
</tr>
</tbody>
</table>

This article is a shortened version of a paper presented at the International Workshop on Advancing PTD organised by IIRR and ETC Ecoculture in September 2001, in The Philippines.

References
Krishi Vigyan Kendras - The Grass root endeavours in dissemination of appropriate technology for rural Poverty alleviation

Nisha Aravind and D. Rakhesh

India is endowed with vast potential resources. Some of the factors that helped us to make great strides in agricultural production were: proper planning, bold agricultural strategy and exemplary adoption of technology by the farmers. Still, there exists a wide gap between technology generation and technology utilization.

The ecological foundation of agriculture involves judicious nutrient management and crop planning based on land and water use pattern and attention to building up soil health. This requires top priority to meet the food challenges in the years to come. To meet these challenges, the major responsibility lies with various extension systems working in the country.

KV K - An effective means for transfer of technology

KV K is one of the major extension wing established by the Indian Council of Agriculture (ICAR) with the main objective being technology transfer. KV Ks are playing a vital role across the rural economy in areas as diverse as animal husbandry, horticulture, plant protection and food processing. They are strengthening the linkages between academic institutions, line departments and rural people. These include small and marginal farmers having small land holdings, especially rural women and youth. KV K is ideally placed to disseminate field tested proven technologies, modifying them based on local conditions, needs and priorities. Nearly 300 KV Ks in various parts of the country are actively involved in diverse areas to empower rural communities with new skills and knowledge through participatory approaches.

CARD-Krishni Vigyan Kendra was established at Pathanamthitta District, Kerala. The Christian Agency for Rural Development (CARD), Thiruvalla, a registered NGO is implementing KV K activities in the district.

Farmers are involved in selection, experimentation, adoption, implementation and evaluation of new technologies. Some of the joint experiences are described in the following paragraphs.

Vermi composting - a boon for a rice farmer

Kerala the green stretch of land lying on the coast of Arabian Sea was once among the leading producers of rice. In 1974-75, area under rice cultivation was 8.81 lakh ha. and production 13.76 lakh tonnes. Owing to scarcity of labour, high labour costs and costly inputs like chemical fertilizers, pesticides, etc., farmers moved away from rice cultivation to more profit-oriented cash crops like arecanut, rubber, pepper, cocoa, etc. As a result, in 2001, the area under paddy decreased to 4.1 lakh hectares and production was 8.2 lakh tonnes, i.e., 25% of requirement of the State.

Besides increasing the productivity, the major thrust area identified was bringing down cost of cultivation.

CARD-KV K took up a demonstration in vermi compost with an innovative farmer, Sri Rajan Varghese. With technical assistance and training from CARD-KV K, he constructed four vermi compost pits and used worms of variety Eudrilus Eugenia. In his field of 1.5 acres of rice crop, he applied two tonnes of vermi compost. By avoiding steameal and cow dung as basal application, he did save Rs. 4000/- being the cost of steameal and Rs. 2,500 for cow dung. He also reduced the application of urea as basal dose from 40 kg to 30 kg.

Some of the most important advantages he reported were: convenience of transporting vermicompost over cow dung; labour savings; reduced pest incidence thereby reduced sprays (in fact only one when compared to three by neighbouring farmers); reduced irrigation.

With his positive experiences he has become a master trainer and a role model for many farmers.

Case of backyard poultry rearing and vegetable cultivation in gunny bags

A Participatory Rural Appraisal (PRA) was conducted with 100 families from landless colony, with malnourished children and below the poverty line. The priority expressed was, requirement of nutritional food for their own consumption. Training and critical inputs were provided by KV K.

The groups were involved from seed to seed and egg to egg stage. The groups demonstrated their skills to other groups.

Good yields of vegetables were reported and were able to add necessary vegetables in their diet. Through poultry rearing, they were able to produce sufficient quantity of eggs for domestic requirement and also able to make profits by selling eggs and birds. The cheerful faces of these farmers inspired several others.

Nursing entrepreneurship

Mr. Joseph and Mr. Philip were uneducated and unemployed youth, when they visited KV K. They chose to start a nursery after examining several options provided by KV K. They attended requisite training sessions and jointly started an agricultural nursery with financial assistance from the National Watershed Development Programme for Rainfed Areas. They received technical guidance and planting materials from KV K.

These two entrepreneurs have now successfully produced a number of planting materials. They expanded their nursery and have set up an outlet near the town area. They further took part in a flower show at Pathanamthitta Municipal Stadium, in which their plants not only received a good response, but they also obtained export orders. They serve as role models for youth in the area.

Empowering rural women

PRA exercises conducted in Ashtamudi area of Kollam district, Kerala, revealed that a major problem faced by the rural
poor of that area was serious environmental hazards caused by dumping of tonnes of undecomposable coir pith waste from the coir industry.

The women’s cell comprising of marginalized rural women from the area prioritized this problem, and KVK intervened with options for coir pith composting. A series of training sessions were offered. These women later formed a group known as “Sthree Sakhi” with the assistance of KVK and started production of compost on small scale with minimum investment. Now, this small group has income from the enterprise leading to household food security.

Case of mushroom cultivation by women SHGs

The poor and destitute women found mushroom cultivation as a very good alternative. KVK was able to organize members of different SHGs and SHG members were imparted an intensive training on group management and mushroom cultivation. Through interactive discussions, KVK experienced that popularization of mushroom cultivation among rural people is mainly constrained by the non-availability of raw material (spawn) and technical support from time to time. Therefore, a bio control lab for producing spawn to these groups, was established. SHG members have started a mushroom production unit financed by DWCRA. These groups are earning reasonable amounts by selling their products through door to door marketing and also through different super markets.

These groups are now exploiting the possibilities of starting a spawn production unit in that area.

Leisure time avenue for rural women

With a majority of women below the poverty line, the future looked bleak to Nellimala Mahila Samajam, a SHG group in Kozhchencheny, Pathanamthitta, Kerala.

Most of them worked as maidservants, involving back breaking labour. They continued with the work, as there was no other way to earn their livelihood. KVK helped them to identify alternative options and prioritize. Majority of them were ready to undertake value addition involving back breaking labour. They started a small scale unit in their samajam buildings for making tapioca cutlets, mushroom cutlets, etc. They are selling the products through bakeries and taking the orders for parties. It is observed that the unit is quite profitable thanks to the active participation of SHG members. The expenses and savings were equally divided among the members. The members agreed that the low cost technologies imparted by KVK has changed their lives.

Besides obtaining the benefits of economies of scale, the group approach brings about a sense of common awareness and oneness of purpose, thereby minimizing the opportunity for exploitation. Above the village level Mahila mandals, it is possible to envisage a cooperative society at block level in which all women’s activity groups can become members. Such an umbrella type society will provide the efforts formal status, which the informal activity groups now lack.

The technologies to be transferred are evolved in response to the needs of rural poor who have little purchasing power. In all of the above cases, the focus was on involving landless labourers / poor farmers / women below poverty line, as, “primary stake holders” at all levels- as producers, as consumers and change agent from designing to adoption of cost effective technology package to suit local needs.

From the examples cited, it is clear that participatory efforts would be very effective and rewarding. PRA & PTD serve as the best suited developmental approaches that can ensure accurate appraisal, timely formulation, effective implementation, inbuilt monitoring and realistic evaluation of projects. More importantly, the role models being available among the communities themselves, ensures spread.

Nisha Aravind - Training Associate (Agricultural Extension), CARD-KVK, Pathanamthitta dist. Kerala and D. Rakhesh - Soil Conservation Officer, Changanassery, Kottayam District, Kerala

References


Themes for the LEISA-India

Vol. 5,3 September 2003

Access to and control over resources

Around the world, many different systems and arrangements determine who has access to and control over land and other natural resources, and under what conditions. The way these systems work, in law and in practice, is one of the main determining factors in the livelihood security of small farmers.

Systems of access and control range from very new, from collective to private. Arrangements change and evolve over time, in most cases moving towards increasing privatization and formalisation. Resources regulated by these systems include not only land but also resources such as trees, water, grazing and manure. Water users association, Joint Forest Management, tree pattas, pastoralists using agricultural land for grazing, private land deeds, communal use of land, share cropping etc., are just some examples of mechanisms that communities and societies develop to regulate their resource use. How do these systems work, and why? This issue of LEISA will try to bring into focus some of the practical aspects of different systems for access and control. We invited you to share your experiences.

Deadline for contributions: 1st August 2003

You are invited to contribute to these issues with articles (about 1800 words + 2 illustrations or photographs), suggest possible authors, and send us information about interesting issues, publications, training courses, meetings and websites.
Scaling up sustainable agriculture

Lessons from the Campesino a Campesino movement

Eric Holt-Giménez

For thirty years the Campesino a Campesino (CaC) movement of Mesoamerica has been hard at work developing Sustainable Agriculture, patiently, empirically, step by step. What started as a village alternative for a small group of Cachikel Mayans in the Highlands of Guatemala has spread through Mesoamerica in spite of (and sometimes because of) military conflict, widespread agrarian failures and chronic economic crisis. Presently there are well over ten thousand practising farmers in Central America alone.

The effectiveness of the agroecological practices promoted by the movement were made clear in the aftermath of Hurricane Mitch: thousands of “agroecological” farmers survived the century’s most destructive hurricane with more topsoil, less erosion and fewer crop losses than their neighbours practising conventional agriculture. (LEISA Magazine 17.1, p.18-20).

The essence of Campesino a Campesino

CaC is more than a wide-flung, loosely related collection of NGO projects. It is not simply a horizontal methodology for learning or technology transfer. It is a social movement based on the belief that farmers are capable of developing their own agriculture (Holt-Gimenez, 1996).

The CaC movement “walks” on the legs of “innovation and solidarity” by experimenting on small, local scales and by widely sharing knowledge, creativity, experience and wisdom, farmer to farmer.

The movement “works” with the two hands of “production and protection’. By focusing on overcoming limiting factors to production and on strengthening the weak ecological functions in the agroecosystem, farmers first reduce and then substitute external for internal inputs. To the extent possible, they gradually eliminate inputs altogether by redesigning the farm system to rely primarily on ecosystem functions. Protection of the environment then becomes crucial to the productive function of the farm. Watershed hydrology, habitat and biodiversity become key considerations for on-farm soil and water conservation and pest management, thus linking farmers’ collective watershed management to their individual farm management.

The movement “sees” with the shared visions of farmer-led sustainable agriculture. In its “heart” members of the movement are motivated by deeply held beliefs in the divine, in family, in nature and community. The shared expression of these beliefs in practice has led CaC to reaffirm the cultural capabilities and the social imperative of farmers’ contribution to sustainability, both locally and globally (Holt-Gimenez, 1997).

Basic principles of Campesino a Campesino

The basic principles of CaC evolved from Roland Bunch’s concept of “people-centred development” three decades ago:

- Start small, go slowly
- Small-scale experimentation to overcome limiting factors and stabilise ecological functions
- Multiplier effect
- Limit introduction of technology
- Teach others
- Reduction, substitution, redesign: 3-phase conversion to sustainability
- Vertical and horizontal integration of production

Lessons from experience

Experience over the years has brought out a number of activities and methodological/organisational lessons. First is the centrality of campesino culture. Farmers learn from each other by sharing wisdom, creativity and knowledge, not just information and techniques. Rather than simply transferring technologies, farmers first and foremost “make culture” - sharing that leads to action builds a culture of sustainable agriculture. Technology transfer is actually just one (and not always the primary) component of this cultural matrix.

Part of farmers’ enthusiasm for developing agriculture comes from the sense that they are actually contributing to and shaping society. This subjective, but very powerful motivational force has been nurtured through cross visits, “encuentros” (farmer gatherings... sometimes similar to scientist’s symposia) and the inclusion of farmer-promoters in workshops held by national and international agencies for agricultural development.

Farmer promoter teams have played a key role in CaC. Teams have the advantage of spreading the knowledge, time, talents and risk among several like-minded promoters. They also allow for entry and exit of farmers from promoter duties and the continual renovation of the team itself. Teams are peer mentorship programmes for young or new promoters, as well as a reservoir of expertise for NGOs who frequently hire experienced promoters, (either on short or long term basis) to open new programmes. Teams also ensure an installed capacity for a wide range of social, economic and technical activities that work directly and indirectly to help sustainable agriculture scale out
Farmers in the recent Central American study on spread Success not the only key for the technical and methodological agenda the movement has profoundly influenced identifying with the movement. In fact, technologies without specifically professionals within NGOs have adopted these farmers fall outside the NGO areas (The numbers are undetermined because over 10,000 farmers identify in the first and/or most successful in converting to organic practices, in pp.12-13). These farmers have often been conventional farmers from the same study indicated that their lack of adoption was due to: Insecure access to land Too much land (can afford to degrade the agroecosystem) Access to credit for external (chemical) inputs Lack of time/labour (engaged in pluri-activity) Ignorance Apathy At this juncture, the limits to scaling out appear to be related to the structural problems of scaling up. These problems have less to do with technologies and methodologies than with national policy contexts and institutional behaviour. The CaC movement provides a perspective on these factors as well. Factors that impede scaling out Lack of documentation: There has been little “sistematizacion” or documentation of the movement done in a way that actually provides feedback to technicians, promoters and farmers. This has meant that the sharing of most of the agroecological, methodological and organisational knowledge in CaC is limited to farmer to farmer exchanges. While these horizontal learning networks are of prime importance for building the culture for sustainable agriculture, the lack of documentation prevents these lessons from scaling up into institutional networks. This in turn limits institutional learning, resulting in many projects “re-inventing the wheel.” Further, lateral learning by government and private sector institutions is virtually non-existent, resulting in little headway for CaC outside the informal social networks connecting remote villages and the NGO institutional world. No effect on formal research: Several interesting studies regarding technologies and methodological approaches have been undertaken. Some national and most international centres for agricultural research (NARIs and IARCs) have a small section or project that deals with sustainable agriculture, in general. Yet, CaC has not significantly affected formal agricultural training and research. In fact, lately, privately-funded research in biotechnology has begun to dominate IARC research agendas, dwarfing sustainability-oriented projects, which remain isolated and wield little influence.

A more sustainable agriculture

This combined approach of developing pools of local expertise and sharing experiences widely has accomplished three important tasks in the development of a more sustainable agriculture:

1) It has generated and adapted locally-based alternatives that are easily incorporated to the ecology of each particular area, increasing agroecological diversity and resilience,
2) It has spread simple, adaptable technologies at low cost to thousands of farmers and has improved the capacity to innovate,
3) It has developed farmers’ social and agroecological capabilities.

The widespread adoption of Velvet Bean (Mucuna pruriens) and other green manures in Mesoamerica is largely due to farmer to farmer innovation and solidarity, as is the knowledge and practice of soil and water conservation technologies (ILEIA Newsletter 13.3, pp.12-13). These farmers have often been the first and/or most successful in converting to organic practices, in diversifying their markets, and in vertically integrating production.

While over 10,000 farmers identify in one way or another with the movement, thousands more have been influenced. (The numbers are undetermined because these farmers fall outside the NGO areas of influence). Likewise, many professionals within NGOs have adopted parts of the CaC methodology or technologies without specifically identifying with the movement. In fact, the movement has profoundly influenced the technical and methodological agenda of many NGOs in Latin America (ILEIA Newsletter 16.2, p.26).

Success not the only key for spread

In the recent Central American study on Farmers’ Agroecological Resistance to Hurricane Mitch (Holt-Giménez, 2001), one thousand practising farmers indicated that their reasons for adoption of sustainable practices included:

- Need (highly degraded agroecosystems, high cost and diminishing returns on credit and external inputs)
- Access to farmer to farmer training
- Consistent technical assistance
- Access to appropriate credit and market opportunities

However, while these factors help explain CaC’s success, the question remains, “If it works so well, why hasn’t it spread more?” One thousand conventional farmers from the same study indicated that their lack of adoption was due to:

- Insecure access to land
- Too much land (can afford to degrade the agroecosystem)
- Access to credit for external (chemical) inputs
- Lack of time/labour (engaged in pluri-activity)
- Ignorance
- Apathy

Don Pedro Rodriguez, promotor, Nicaragua explains how CaC walks on the legs of solidarity and innovation, works with the hands of production and protection, has a heart that loves family, nature and other campesinos, and eyes for a campesino vision of the future.
empowerment (beyond technologies and/or markets), particularly in regards to influencing the policy context for sustainable agricultural development. Claims to partnerships notwithstanding, campesinos remain “clients” of most development programmes, rather than “constituents” of organisations working for social change.

Inability to influence decision makers:
Despite its extensive presence in one of the largest farmers’ unions in Central America, CaC has not been very successful in scaling-up its agenda within national and regional farmer organisations. Basically, promoters from CaC have been unable to penetrate decision-making circles (boards, directorships, etc.), dominated by medium and large producers interested primarily in conventional agriculture. Consequently, while some farmers’ unions can boast of CaC projects (this is important for obtaining international funding), the lack of power sharing and the dominant conventional strategies for agricultural viability precludes these unions as lobbying agents for sustainable agriculture.

Conflicting economic interests: The importance of economic viability has led many CaC groups to establish international linkages for Certified Organic and Fair Trade marketing. While both Fair Trade and the Certified Organic market have proven a windfall for many campesinos groups, neither is necessarily agroecologically sustainable or inter-generationally equitable. Farmers anxious to obtain quick certification have chopped down forests for access to fertile, uncontaminated soils. Others have shifted from diverse agroecosystems that produce food for local consumption to organic monocultures geared for export. Finally, many NGOs, eager to attract farmers to their projects, substitute broad-based, organising efforts around food security, autonomy and sustainability, for short-term, market-oriented strategies. This has drawn in farmers interested more in profits than sustainability and has excluded those farmers whose factors of production do not permit farming for the international market.

Establishing linkages with the international market does not in and of itself develop local or inter-sectoral linkages with urban, consumer, or environmental interests. But these linkages on local, national and regional scales cannot be ignored if scaling up itself is to be sustainable. This does not mean that sustainable agriculture must operate outside the market or that Certified Organic and Fair Trade should not be pursued. Simply, it means that programmes for sustainable agriculture cannot afford to push market options uncritically.

Unfavourable institutional and policy contexts: The decentralised, informal and horizontal nature of CaC has given tremendous resilience and diversity to the movement, whose reticular development has allowed it to establish effective technical and methodological alternatives for sustainable agriculture over a broad geographical area. The knowledge-based, farmer-driven approach has been especially appropriate to the ecosystem-specific nature of sustainable agricultural development. However, it appears that CaC has found its limits in the unfavourable institutional and policy contexts that do not favour sustainable agriculture or farmer-led development. There are many credit and market mechanisms that could be brought in to improve the conditions for sustainable agriculture, as well as research, training and extension programs – just as they were for the Green Revolution. However, the lack of effective political will on the part of governments and research centres makes this a remote possibility. Developing this political will depends in large part on pressure from civil society. For the CaC movement to successfully influence decision makers reluctant to sustainable agricultural policy, institutional mechanisms for this expressed purpose must be developed. How much of this can or should happen within the NGO, academic, or private (market) sectors should be a subject of serious debate. It is likely that all avenues should be pursued in some form.

Movements and alliances for scaling up and out
To be an effective social movement for sustainable agriculture, CaC may well need to establish broad social alliances for sustainability with other sectors and with actors from Central America’s new social movements (gender, environment, urban dwellers, social justice, etc.).

Given that many NGOs working in sustainable agriculture also address many of these issues (either within the agricultural project or within the organisation itself), there may be good opportunities for this. However, it should be noted that while NGOs have been very good at introducing issues, technologies and methodologies into civil society, until now, they have not necessarily pursued a strategy for building movements or alliances for social change. Many professionals working within NGOs see their organisation or their project as and end in itself, and not as a means to enable social change. On the other hand, Central America’s rich (if violent) political history has meant that activists often involved in movements for social change are still around, many of them in NGOs working for sustainable agriculture. Experienced or not, these professionals can help develop strategies for “scaling out” through movements such as CaC, and “scaling up” through farmer-led, inter-institutional alliances.

CaC illustrates the importance of farmers’ movements for developing sustainable agriculture on the ground. Perhaps the most pressing lesson is simply that agriculture in general will change not only when farmers change, but when farmers (and their allies) are capable of changing the institutions that hold change back. We still have much to learn about just how to do that. The formation of international and regional alliances for influencing agricultural research and development may provide a useful way to overcome the present policy impasse in sustainable agriculture.

Eric Holt-Giménez, Dept. Environmental Studies, University of California, Santa Cruz, CA. 95064. USA. Email: eholgim@cats.ucsc.edu

References
The International Centre for Research in Agroforestry (ICRAF) has been conducting research on contour hedgerow technologies for the past decade in Claveria, Misamis Oriental, assessing the management strategies that address key technical constraints of the system. Since adoption of the technology by farmers was low, ICRAF refocused its efforts in finding alternative systems that address the technical and institutional issues of conservation farming. Natural vegetative filter strips (NVS) provided simple solutions to the technical constraints of soil conservation on sloping farms. These are buffer strips laid out on the contour in which natural vegetation is allowed to re-grow into thick, protective cover. NVS also provided the foundation for complex agroforestry systems with fruit and timber trees. This system is being widely adopted, enhanced by a dissemination approach called “Landcare.”

Landcare is a movement of farmer-led organisations supported by local governments with backstopping from technical service providers - they share knowledge about sustainable and profitable agriculture on sloping lands while conserving natural resources. This dynamic voluntary movement has grown to include more than 5000 farmers in 250 groups from five municipalities in northern, central and eastern Mindanao. Today, Landcare has become the melting pot for farmers and others who discuss issues, share lessons, invest talents, skills and other resources geared towards better land husbandry and protection of the environment from degradation. It threads a path for constructive, long term and practical action at a community level for tackling environment and sustainability issues for the well-being of people and their communities.

Experiences with and strategies for scaling up the Landcare approach and the locally-led natural resource management planning process are described here.

Farmer innovations in erosion control
ICRAF’s project sites are located in two adjoining provinces in northern Mindanao, namely Misamis Oriental and Bukidnon, in the municipalities of Claveria and Lantapan respectively, with similar biophysical conditions. Rainfall is about 2200 mm/year and soils are degraded, acidic (pH 4.5-5.2) with low availability of P (Mercado et.al, 2000). Sloping fields in Claveria experience up to 200 t/ha of soil loss annually. About 95% of the cropping activities (mostly maize and some vegetable) take place on lands of more than 15° slope.

Contour hedgerows of pruned leguminous trees or Sloping Agricultural Land Technology (SALT) had been promoted in Claveria since the early 1980’s by the Philippine Department of Agriculture (DA). It aimed at providing effective soil erosion control, organic fertiliser to the companion crops, fodder for ruminants, fuelwood for farm families, and restoration of water quality and quantity in the watershed etc. In spite of these benefits, farmers’ adoption was not widespread due to high labour in establishment and maintenance of the hedgerows, resource competition between the hedgerows and associated crops, limited added value from hedgerow pruning, and poor species adaptation.

However, farmers began to adapt the technology. Some placed their crop residues in lines on the contour to form “trash bonds”. These accelerated the growth of native grasses and weeds and soon formed stable hedgerows with natural front-facing terraces. Others laid out the contour lines but didn’t plant anything. These contour lines eventually evolved into natural vegetative strips (NVS) that controlled erosion but needed less maintenance and labour than the tree based contour hedgerows. (Mercado et al, 2000).

These simple innovations attracted many farmers in the area. In 1994, it was estimated that 150 farmers had adopted contour hedgerow systems while the number of pruned tree hedgerow fields decreased after 1990. The new wave of hedgerow systems was predominantly NVS with contour ploughing replacing up-down tillage.

The evolution of Landcare
ICRAF also developed and put into test an extension programme that rapidly and inexpensively diffuses conservation farming and agroforestry technologies
using the group approach. This approach was found effective in strengthening government extension programmes and expedited the dissemination process. It also encouraged local governments to provide technical, leadership, logistics and policy support. At the beginning farmers came together to exchange knowledge and skills on soil conservation and agroforestry practices. With time they felt the need to be more cohesive and to look at other degradation issues - a process of group development that required leadership skills. This key institutional innovation for technology dissemination gave birth to “Landcare”, a land conservation approach and movement, which has its origin in Australia (Campbell and Siepen 1996).

What is Landcare?
The Landcare approach is based on effective community groups being in partnership with local government. Such groups respond to issues affecting them and are more likely to find and implement solutions independently, rather than follow those imposed by external agencies. Landcare is about people and the key to success is based on a mature social capital and a close bond between and among farmers ‘communities’ and governments. The tripartite relationship of key actors in Landcare: grassroots Landcare groups, local government units (LGU) and technical service providers and facilitators (ICRAF, Department of Agriculture (DA), Department of Environment and Natural Resources (DENR), others) is indicated in the figure below. The success of Landcare as an approach is dependent on how these 3 key actors interact and work together.

Concerned Citizens
(Farmers, Women, Students, Youth, Professionals, Business groups, etc)

In 1996, we started our technology dissemination programme in response to farmers’ requests for technical assistance in conservation farming. 25 farmers requested for training on the establishment of NVS and decided to form a group and share the technology with other farmers. That group of 25 farmers made the history of Landcare in Claveria. Today, there are more than 250 Landcare groups in Claveria and Lantapan. Most of them are based in the sub-villages (sitio or purok) and are federated at the village (barangay) and municipal levels. More than 3000 farming families are involved and have successfully extended conservation farming technologies to more than 2000 farmers and established more than 300 communal and individual tree nurseries (Mercado et al 2000). Thousands of fruit and timber tree seedlings are planted on the NVS, on farm boundaries, on buffer zones of protected areas, on riparian areas, and some are planted on small-scale tree plantations. Some groups have also linked with other service providers, including the business sector, for funding of their nursery activities and livelihood projects.

Who is involved in Landcare?
Landcare is a voluntary group that is currently represented by a large number of farmers. However, interests from other sectors - women, students, youth and professionals - are emerging. This implies a wider applicability of Landcare for a range of community groups in varying situations. They are:

1. Concerned citizens in the community who are:
   - Willing to share their talents, skills and other resources
   - Usually resource poor and want to improve their livelihoods
   - Willing to learn, share experiences and employ new sustainable farming techniques
   - Committed to resource conservation and protection and the creation of workgroups for the purpose
   - Tilers, non-tillers, owners, tenants of the land

2. Local Government Units (LGUs) who can provide:
   - Policy support for the institutionalisation of conservation farming, agroforestry and other practices for sound environment and natural resource management, and budget allocations through creation of local ordinances.
   - Leadership in facilitating Landcare groups and related activities
   - Capacity-building programmes for the overall development of Landcare
   - Financial support for Landcare activities

3. Technical facilitators (ICRAF and other line-agencies) who can provide:
   - Appropriate technologies for sustainable agriculture and natural resource management
   - Facilitation for Landcare group formation and their activities
   - Information, communication and education programmes
   - Network support for Landcare groups

What are the aims of Landcare?
The issues in Landcare are varied and usually location-specific, and form the basis for defining goals. Generally, however, Landcare aims at:

- Protecting, conserving and restoring the resource base: soil fertility by controlling soil erosion and other conservation technologies that increase and sustain farm productivity.
- Engaging in field level action research that addresses other issues on sustainable agriculture and natural resource management.
- Developing marketing strategies for agroforestry and environment-friendly farm products
- Strengthening and empowering local people to think, create and initiate activities that improve livelihoods as well as protect the environment from degradation.
- Sharing technical knowledge among researchers, extension agents, local officials, farmers, students, women, professionals, business sector, civic groups and other members of the community about sustainable agriculture and natural resource management.
- Seeking technical and other forms of assistance from government and non-government agencies as well as private companies.
- Drawing support from all sectors for the common interest of land care.
- Fostering and safeguarding the welfare and interest of its members.

Steps of the Landcare approach
During the gestation and evolution of Landcare in Claveria, we identified the following steps in developing this approach as summarised below (Garrity and Mercado, 1998).

1. Select sites with good potential
This is to bring conservation farming technologies to where it is most needed—on sloping lands where soils are prone to erosion. It also involves meeting with key leaders in the local government units, interested farmers, and other stakeholders. Their understanding of the issues to be addressed and their willingness to support and complement the programme are crucial to the success or failure of Landcare at a given site.

2. Expose key farmers to successful technologies and organisational methods
The aim is to develop strong awareness among prospective key actors – especially innovative farmers and farmer leaders – of the opportunities to effectively address production and resource conservation objectives through the new technologies. The success of the activities can be measured though the enthusiasm developed to adopt the technologies within the community. Exposure activities include:

- Cross visits to the fields of farmers who have successfully adopted the technology
- Training experience for farmers in the target communities to learn about the practices through seminars in their villages; and
- Opportunities for farmers to try out the technologies through unsubsidised trials to convince themselves that they work. If so, these farmers become the core of a conservation team to diffuse the technology in the municipality

3. Organise conservation teams at the local level

Once it is clear that there is a critical threshold of local interest in adopting the technology and a spirit of self-help to share the knowledge among the villages of a municipality, then the conditions are in place to support the implementation of a municipal conservation team. The team is composed of an extension technician from the Agriculture Office and possibly from the Environment and Natural Resource Office, an articulate farmer who has experience in applying the technology, and an outside technical facilitator. The team will initially assist individual farmers in joint implementation of desired conservation farming practices. Later, they can conduct seminars and training at the village level if sufficient interest arises. During these events, the team can respond to requests for the organisation of formal groups.

4. Evolve Landcare farmers organisation

If and when the preconditions are in place for a Landcare farmer organisation, then the facilitator may assist the community in developing a more formal organisation. A key ingredient for success is identifying and nurturing leadership skills among prospective farmers. This may involve arranging for special training in leadership and management for the farmer leaders and exposing them to other successful Landcare organisations. Each village may decide to set up its own Landcare Association and a Village Conservation Team. A village may organise Landcare Association sub-chapters in their sub-villages. A sub-village conservation team usually includes a local farmer technologist, the sub-village leaders and the councillor assigned in that sub-village. The sub-village conservation teams are the front liners in conservation efforts providing direct technical assistance, training and demonstration to farmer households. They are backstopped by conservation teams at the village and municipal levels. At the municipal level, the Landcare Association is a federation of all village level Landcare groups. The municipal conservation team is part of a support structure, which also includes other organisations that can assist the chapters for the organisational set up of the Landcare Association.

5. Attract local government support

Local governments can provide crucial political and sustained financial support to the Landcare Association in meeting its objectives. The municipality has its own funds earmarked for environmental conservation. These can be targeted to Landcare activities that enhance natural resource conservation. The municipality can be encouraged to develop a formal natural resource management plan, which can help guide the allocation of funds. The villages can also allocate financial resources from their regular internal revenue allotment. These funds can be used to organise the conservation teams and Landcare Association activities at the village level. The municipality can complement the funds of the villages, just like it happened in Claveria. The municipality allocated 50,000 pesos (about 1,250 US$) to each village to support Landcare activities. External donor agencies can best support Landcare development by allocating resources for leadership and human resource development, communication equipment and transportation to enable the Landcare leaders to make maximum use of their time.

We noted that Landcare performed impressively in villages whose activities were mostly funded by the local (village) government. Here the village officials made sure that the activities were well implemented so that their investments paid off, as compared to those that were in part funded externally.

This implies that when the investments are coming from local funds to support self-help activities, it is likely that local people ensure the gains of their investment, resulting in good and successful projects, and sustained actions.

6. Monitor and evaluate

Monitoring is a necessary tool to assess the progress of the activity and use outputs for strategising activities or planning actions to make the programme more dynamic and relevant to the needs of the target community. For monitoring purposes, ICRAF has been keeping records of all those who have attended a training or had been assisted with establishing NVS on their farms, as well as farmers who requested assistance. Details on farming and conservation practices, training and follow-up needs are recorded on a diagnostic card, which is updated on regular follow-up visits by ICRAF staff. The leaders of the Claveria Landcare Association (CLCA) chapters and sub-chapters have been supporting this activity by facilitating the distribution and collection of the diagnostic cards to and from the sub-villages and new CLCA members.

Scaling up the natural resource management planning process

In 1996, the local government of Lantapan embarked on a bold step to develop their “natural resource management and development plan”. It was probably the first of its kind in the history of local development planning with emphasis on natural resource management. The planning process was designed by the local government and technically supported by an international research consortium in which ICRAF is an active member. The plan drew national recognition and emerged as a model for a local government-led, participatory and research-based planning process. Today, the plan is vigorously implemented through public-private partnership. This means, everybody involved in either research or development activities within the area need to streamline their programmes towards meeting the objectives of the plan.

Based on the experiences in Claveria and Lantapan, different scaling-up modalities were developed (Catacutan et al. 2000).

MODALITY 1: Scaling up through the local development planning process (From Claveria to Lantapan). This mode requires an engagement with LGUs in their local development planning process, resulting in the institutionalisation of the project at the planning stage as in Lantapan. Landcare is embedded in the bigger NRM and development plan of the municipality.

MODALITY 2: Scaling up through “integration” within the conventional extension programme of local government line agency. Municipal Agriculture Office (MAO), Claveria (From Claveria to Malitbog, Bukidnon). The local government of Malitbog invited ICRAF to help them develop their Landcare programme. Landcare was then embedded in the extension programme of the MAO in Malitbog that provided both human resource and financial support. Local champions – persons committed to Landcare – play an important role.

MODALITY 3: Scaling up through the local development planning process and...
integration in existing local programmes (Lantapan to Manolo Fortich, Bukidnon).

This modality is a marriage of the two modes cited above.

MODALITY 4: Province-wide scale scaling up through integration of programmes implemented by government-line agencies and special local warm bodies at the provincial level (Lantapan and Claveria to other municipalities in the two provinces). This mode requires a review of the different line-agencies and special warm bodies operating within a provincial scale and involves an understanding of their mandated programmes and identifying committed local champions who can mobilise programs on a provincial scale.

MODALITY 5: Scaling up through networking, collaboration and integration in existing special projects implemented by both public and private sectors (for provincial, regional to national levels). We identified pathways whereby NRM can be streamlined in the development goals of different government line agencies from the provincial level down to the municipalities such as the Protected Area Management Board, Provincial Planning and Development Office, National Government Agencies such as Department of Environment and Natural Resources (DENR) and the Department of Interior and Local Government (DILG) and the League of Municipalities. The challenge was to contextualise NRM in respective programmes and mandates of these agencies.

We also have had interaction with other development service groups engaged in this issue, such as the Governance on Local Democracy (GOLD) project of the Associates in Rural Development Inc., and recently again, the Philippine Watershed Coalition. A potential partner for future scaling up is the Forest Management Bureau in implementing the Philippine National Watershed Management Strategy.

Keys to Success

In our experience, there are key principles that should be applied when scaling up technologies, concepts or processes. These are:

1 - Identify your strategic partners. You can do this, by critically examining your potential entry points that can be government officials, government offices, government programmes or NGOs, POs and their programmes. Be sure to get as much knowledge about your potential partners - their programmes, skills and even their personal interests. Be conscious of the different personalities of people.

2 - Build that strategic partnership. Partnership is about relationship. It is important to approach the relationship as equal partners and be open on what each partner can invest.

We are very careful as we carry the banner of an International Centre. We usually begin by saying, “we are here, not as a bank, a donor, or a sponsor, but—we are here to share our experience and our little successes”.

3 - Use opportunities to build upon the programme. Don’t create confusion or chaos in an already organised system. Refrain from being identified as “Organiser” but as “Innovator and Facilitator”. Avoid creating foreign structures. The key word is “Refinement” not “Re-engineering”. Your proposed programme should be put in the context of already existing programmes by reviewing their working structures and relations and building on it. Be subtle and kind, and don’t impress upon them that you are there to solve their problems. At the end of the day, they should claim ownership to the programme.

4 - Be flexible. Flexibility is very important in partnership building, from conceptualisation to implementation, but avoid “double standards”. Each locality has its own unique conditions. Your scaling-up modes and even the project level approaches for the delivery of outcomes should vary according to local conditions.

5 - Maintain good communication and a friendly attitude. Just as in any relationship, communication is essential to success. Occasionally, socialise with your partners, but don’t lose the limits. Be respectable by avoiding broken promises - don’t promise anything you are not able to deliver.

6 - Be dynamic and innovative. Make things exciting by bringing in new and relevant information to your partners from time to time. Don’t forget to be humble - yet show that you know something and that you are willing to share it with them.

7 - Be reflective and encourage your partners also to reflect on issues, problems and past events. It is always important to evaluate how things were delivered and look forward to mid-course corrections, if necessary. This can be a mutual learning exercise by the partners themselves.

8 - Networking. Invest in network building and maintain a supportive role to the network. Building networks is like building relationships - it is therefore, important to show an untiring effort and sincerity to potential networkers.

Challenges and future plans

Our analysis indicates that there is more to be done in further releasing the power of the Landcare concept. The public and non-government sectors can assist in facilitating group formation and networking among groups, enabling them to grow, develop their managerial capabilities, and enhance their ability to capture new information from the outside world. They can also provide leadership training to farmer leaders to ensure the sustainability of the organisations. Cost-sharing external assistance can also be provided. For this, the use of trust funds can be emphasised, where farmer groups can compete for small grants to implement their own local Landcare projects. This has been remarkably successful in the Australian Landcare Movement. We envision that the Landcare approach may be suited to other locations in the Philippines and elsewhere, providing a national focus for the sustained management of resources by farmers with minimal local government support (Mercado et al, 2000). On the other hand, the NRM planning process manifests a strong basis in the implementation of provisions mandated in the Philippine Local Government Code. Both Landcare and the local NRM process exhibit the essence of local governance. The modalities for scaling up provide more options for project implementers to contextualise approaches for scaling up on the basis of opportunities and build the blocks for accelerated progress in that local condition.

Delia C. Catacutan (ICRAF), Agustin R. Mercado, Jr. (ICRAF) and Marcelino Patindol (Claveria Landcare Association), International Centre for Research in Agroforestry (ICRAF), Lantapan Research Site, Sungco, Lantapan, Bukidnon, Philippines 8722. Tel/Fax (963)-0912-711-8117, E-mail: icraf@mozcom.com

This article is a shortened version of a paper presented at the International Workshop on ‘Going to scale: can we bring more benefits to more people more quickly’, IRR, Silang, Cavite, Philippines, April 2000

References

Southern Africa has a fast growing human population, making food security a major challenge. Over 70% of the population live in rural areas and depend largely on rain-fed traditional agricultural practices. The climate is characterised by unimodal highly erratic and unpredictable rainfall lasting four to five months from November to April, followed by a severe dry season. The average annual rainfall ranges from 500-1200 mm. The eco-region is mainly an undulating plateau landscape, with a mean altitude range of 600-1200 m above sea level. Maize constitutes the predominant food crop. Livestock production (cattle, goats and pigs) is extensive and traditional communal grazing is widespread. Fertilisers and improved germplasm that fuelled Asia’s “Green Revolution” have generally not worked throughout Africa. There are some commercial farmers in Zimbabwe and South Africa who have utilised the Green Revolution approach. However, the Green Revolution has bypassed the majority of peasant cultivators (80% of the regions farming communities) Here, agricultural production is dominated by complex, diverse and low-input farming systems characterised by infertile soils, unreliable rainfall and low yields. The majority of these farmers live in remote villages with little or no access to research and extension services, high yielding seed varieties, capital and credit, fertilisers and pesticides.

Fertilisers and improved germplasm that fuelled Asia’s “Green Revolution” have generally not worked throughout Africa. There are some commercial farmers in Zimbabwe and South Africa who have utilised the Green Revolution approach. However, the Green Revolution has bypassed the majority of peasant cultivators (80% of the regions farming communities) Here, agricultural production is dominated by complex, diverse and low-input farming systems characterised by infertile soils, unreliable rainfall and low yields. The majority of these farmers live in remote villages with little or no access to research and extension services, high yielding seed varieties, capital and credit, fertilisers and pesticides.

Fallow management research in Eastern Zambia
Fallow management and other agroforestry interventions have been the subject of the International Center for Research in Agroforestry (ICRAF)’s research since 1985. The most promising amongst them are improved fallows with Sesbania sesban, Tephrosia vogelii, Gliricidia sepium and Leucaena leucocephala. Results from Zambia show that Sesbania sesban is the species most preferred by farmers. However, on-station research has shown that coppicing species, particularly Gliricidia sepium, has a high potential to complement Sesbania. In general the coppicing species are able to suppress the striga weeds, diversify biomass resources and produce fuelwood on farm. If the clay content in the soil is less than 10% Sesbania fallows will not grow well. Sandy soils, root knot nematodes and the crop damaging leaf beetle Mesoplatys can be major constraints to the widespread use of Sesbania sesban.

Sesbania improved fallows have a great potential to increase maize yields with or without application of inorganic fertilisers. Maize grain yields of 5 and 6 t/ha were obtained in 1990 and 1991 following 2 and 3 year Sesbania fallows, respectively. This was in comparison to 4.9 and 4.3 t/ha from continuously cropped maize with fertilisers (112 kg N/ha) and 1.2 and 1.9 t/ha without it. In addition, 15 and 21 t/ha of fuelwood were harvested after 2 and 3 year fallows, respectively (Kwesiga et al, 1999). If the Sesbania biomass at the end of the fallow is above 9 t/ha, a farmer can grow maize for 3 years before going back to the fallow phase. For biomass yields of approximately 7 t/ha, a maize growing period of two years and then reverting the field back to fallow is recommended.

Economic analyses revealed that these improved fallow systems were feasible, profitable, and acceptable to farmers. The returns per labour day were very similar to those of the fertiliser option. After six years the returns from one year and two year fallows were considerably superior to the control option of continuous maize cultivation without fertilisation (Kwesiga and Coe, 1994)

The demonstrated potential to increase maize production without applying inorganic fertilisers has excited thousands of farmers who are enthusiastically participating in the evaluation of this technology. The number of farmers who are testing and using a range of improved fallow
practices in the Eastern Province of Zambia has increased dramatically: from 200 in 1994/95 to about 10,000 in 2000. There are 100,000 farm families in Eastern Zambia who could potentially benefit from this innovation and 120 million farmers in the wider Southern Africa Development Cooperation (SADC) region. The challenge now is to scale up the adoption of this technology.

**Scaling up improved fallows in Eastern Zambia**

Farmer involvement initially followed the classical technology-transfer approach of diagnosing farmers’ priority problems followed by on-station research and then on-farm research. Since 1992, on-farm research became the main vehicle for assessing the biophysical and economic performance of the technology, with farmers gradually taking over the design and management of trials in their fields. Nevertheless, farmer designed and managed experiments were characterised by intensive farmer-ICRAF interaction and substantial support was provided to individual farmers in terms of information, training and technical backstopping visits. This support extended to individual farmers could be considered as the minimum incentive necessary for making a technology like improved fallows to be adopted in the first place. In fact such incentives are necessary for an innovation like agroforestry which takes a long time to provide tangible benefits. Scaling up is about people and not technologies alone. Our approach to technology dissemination is demand-driven, being highly dependent on private sector equipment manufacturers, seed and seedlings producers, retailers, and farmers for its success.

The enthusiasm generated by increases in maize yields after sesbania fallows has triggered a large demand for the technology by farmers. Dissemination and farmer experimentation with improved fallows has now evolved into a true client-driven process.

**Why and how farmers adopt the technology**

A participatory study to understand why and how farmers decide to adopt improved fallows was undertaken with 81 women and 40 men in four villages. The main findings are:

- Exhausted soil fertility and lack of alternative innovations are the driving forces for trying improved fallows;
- Awareness and information about the potentials of the improved fallow technology are pre-conditions to use. Women have less access to information, less formal education and hence should be given special attention when disseminating improved fallows;
- The current use of the technology appears to be spread evenly by both men and women farmers;
- Better off farmers are more likely to test first, presumably because they are better able to cope with risk, however out of the poorer ones that are testing, women are more successful and more likely to expand planting of improved fallows on their farms;
- Among women users, the largest numbers come from female-headed households where women can take their own decisions on land management choices;
- Men are more likely to test for the first time only after hearing about the potential of improved fallows, whereas women are more likely to test after seeing first hand for themselves, ideally from peer farmers.

**ICRAF’s main strategies for scaling up**

**Working with government extension service**

Government structures are often rigid, hierarchical and autocratic and have a natural tendency for centralisation, bureaucracy and control. In spite of these drawbacks, working with government to scale up may be more beneficial to the poor because governments:

- remain largely responsible for social services including health, education and agricultural extension on which the poor rely;
- remain the ultimate arbiters of wider political changes on which sustainable development depends;
- are seen as the only providers, especially in Africa.

Constraints and difficulties of the government system - resources in short supply, lack of motivation due to low salaries, poor conditions of service - have to be recognised and accepted beforehand. Inevitably, if progress has to be achieved, it will be slow. Thus, agencies that undertake to work in partnership with governments must be committed for a long time. ICRAF, for instance, has a memorandum of understanding with the government of Zambia, to conduct agroforestry research and development work in her territory. In return, ICRAF gets land for experimentation, scientists on secondment, access to field sites without interference, and an enabling environment to work with the rural poor. The improved fallow technologies were developed in partnership with government research agencies and extension services. Personalities and relationships between individuals are a vital element in successful government-NGO partnerships, without which no amount of money or advice will make a difference. In Eastern Zambia, ICRAF still enjoys very good relationships with the political establishment; from the office of the provincial minister to chiefs and village headmen who allocate land and influence local policies. ICRAF’s good relationships with the provincial and district agricultural offices have enabled access to the district Farm Institutes to demonstrate technologies and get feedback from farmers. The camp extension officers were attached to the project to learn and be trained in agroforestry technologies as well as to select farmers with whom to conduct initial on-farm trials. This pathway is still one of our main strategies for scaling up. Furthermore, ICRAF has access to the government media to disseminate technologies, and hopes to impact on government policy and practice when the conditions for influence become favourable.

**Networking and partnerships with NGOs**

World Vision International (WVI) in Zambia and ICRAF share the objective of addressing food security through increased farm productivity. Whereas ICRAF had developed the technology, it lacked the capacity and mandate for wider dissemination. ICRAF’s capacity to mobilise at the grassroots level could only reach very few farmers carrying out on-farm research. At the same time, its traditional partners, mainly government
extension services, had limited understanding of natural resource management strategies since they were largely commodity based. They were also constrained by limited budgets that curtailed their day to day functioning including training.

Therefore, to move forward in a manner that would benefit smallholder farmers, ICRAF needed partners with the willingness to understand her technologies as well as the capacity and credibility to operate at grassroots level. WVI has a grassroots network of staff and volunteers trained to facilitate extension. It also has networks with churches, women’s organisations and other community groups. World Vision was aware of the potential of agroforestry interventions and had, at a small scale, already tried out using improved fallows.

With both parties acknowledging that they needed each other, it was easy to find common ground. A jointly designed 5-year project aimed at introducing improved fallow technology to 12,000 small-scale farmers in the Eastern Province of Zambia. For its part, ICRAF agreed to provide the technical aspects, which included training in nursery development and management, supply of initial seed, training of trainers and guidance to farmers, provision of laboratory support and soil etc. In general, ICRAF would be on hand to answer technical questions from WVI staff.

The project included components such as introducing agroforestry to communities that had not been reached by ICRAF and government extension agencies, crop diversification, soil moisture conservation, improved farmer access to agricultural extension and markets. By the 1999/2000 planting season, the project was working with over 3000 farmers. The number of farmers adopting and planting improved fallows is expected to increase sharply once the main groundwork has been laid.

Building grassroots movements to replicate successful projects

ICRAF facilitates exchange programmes for introduction of new technologies between farming communities that have experience in agroforestry. The main objectives are empowerment of farmers as trainers, knowledge transfer from farmer to farmer, farmer assessment of technology performance and farmer-to-farmer backstopping of activities. The more intensive farmer-to-farmer capacity building programmes usually last 3-5 days in host villages. Planning and organisation of programmes including content is largely carried out by host farmers. ICRAF provides some logistical support like transporting farmers, while the host farmers organise accommodation, meals and entertainment in the village for the trainees.

We have found that one participant of such a farmer-to-farmer capacity building programme reaches an average of 6-10 fellow farmers at home, who again will plant agroforestry trees on their land. This, together with the low costs involved, makes the farmer-to-farmer exchange pathway a very attractive one for achieving sustainability and wider impact. The advantage of the farmer-to-farmer training linkages between the Eastern Province of Zambia, the Central & Southern Regions of Malawi and the bordering areas of Mozambique is of interest. We call this area the “Chichewa Triangle”, as language and culture are the keys for successful dissemination. Further geographic diffusion by building bridges to other neighbouring languages and cultures in the region is anticipated.

Influencing policy reform: Linking with grassroots organisations

In addition to the dissemination efforts highlighted above, ICRAF has organised workshops for different levels of policy makers to promote the adoption of agroforestry. The policy makers range from village headmen in traditional authorities to paramount chiefs, elected officials, senior civil servants and the private sector. These workshops have been very useful and have helped to produce strong recommendations (by-laws) that protect and promote on-farm cultivation of trees. The large number of stakeholders in natural resource management issues and the existence of groups with conflicting interests necessitate the involvement of various levels of policy makers in these processes. For example, in Eastern Zambia institutional arrangements authorise free range grazing of livestock after the harvest of crops. For those land users who may want to establish nurseries and plant improved fallows and other trees in their farms, this arrangement poses a serious threat to the survival and sustainability of the desired agroforestry interventions. In 1998, ICRAF in Zambia facilitated a workshop under the auspices of the local traditional chiefs to identify institutional arrangement that hindered or accelerated adoption of agroforestry technologies and to seek ways of alleviating these constraints. The workshop provided an opportunity for institutional arrangements to be established to facilitate wide adoption of agroforestry. These included:

- penalties on those whose livestock damaged agroforestry trees and crops because they did not herd their animals during the cropping season
- time periods when bush fires can be set–early burning after harvest
- prolonged tenure on leasehold land if the land user planted trees
- by laws empowering the local authority to prevent crop cultivation on hill sides if soil conservation measures were not adhered to.
- revisions to the chiefs act by the government to reinstate some of the powers of the chiefs and other traditional authorities.

Factors contributing to the current achievements

Development is a process whereby people learn to participate constructively in the solving of their own problems. The driving force is people’s enthusiasm for change. People who work with development programmes must motivate farmers through results rather than by promises. Our current achievements so far can be attributed to:

- Correct diagnosis of farmers’ problems from the onset of the programme;
- Involvement of farmers and extension staff in the research process from the inception of the programme. The scientists, like the camp extension staff, spent much time interacting with farmers and could respond quickly to the needs of farmers;
- Starting small and using local knowledge in the design of solutions;
- Demonstrating easily recognisable results;
- Testing a wide range of management options with farmers (e.g., offering different species with intercropping and pure stand options) and then allowing them the freedom to modify, innovate, and improve the prototypes;
- The technology that could be used by men and women alike (half of the participating farmers are women) It also appears to be attractive to different types of farmers, e.g., high income and low income, ox-and hoe-cultivators.
- Working with partners at all levels: government research and extension services, local farmer groups and big NGOs like World Vision who shared a similar vision with ICRAF;
- The funding of the research programme (thanks to Sida and Cida) has been adequate and for a reasonable length of time,
- Ex-ante economic analysis helped identify key features of the technology that make it financially attractive, e.g. bare-root seedlings and the superiority of a two-year fallow over one-and three-year fallows;
Development of an adaptive research and dissemination network for testing and extending the technology in new areas.

**Constraints to scaling up agroforestry innovations**

- **Erratic and low seasonal rainfall during establishment** means that many of the agroforestry seedlings planted will fail to establish, and those that do, will not grow very well. This diminishes the impact of the fallows on maize yields. Farmers are more cautious about establishing sizeable nurseries and instead prefer to make smaller ones so that less effort is wasted if a season of poor rains occurs. The lack of sufficient water is a further disincentive to the establishment of nurseries.

- **Seed availability** is a major bottleneck for scaling up the adoption of agroforestry technologies in the region. Even though most farmers are producing their own seed, the demand for seed remains high. ICRAF is developing a seed strategy that will establish the amount and variety of seed available now and make projections for future demand. The strategy will provide guidelines on collecting tree seed and establishing seed orchards. It will also provide clear seed quality control and pricing guidelines within the region and for each country. This work will be undertaken in collaboration with competent seed centres, which also have the mandate to produce and certify seed. In addition, the project will create awareness aimed at increasing the involvement of farmers and the private sector in seed production, distribution and marketing.

- **Initial support to farmers and NGOs.** As the project builds up momentum for scaling up it will need adequate technical backstopping capacity for the various farmer trainers, groups and organisations. ICRAF’s present capacity in not sufficient to provide backstopping to all partners, who need to go through at least one cycle of the technologies before they gain the confidence and know-how to manage the scaling-up process on their own.

- **Weak extension services.** Throughout the region, government research and extension services are largely enfeebled or paralysed through lack of staff, low salaries, low morale and lack of operating funds. It is left to the project to catalyse the relevant government services. On the other hand, farmers are enthusiastic and actively helping in scaling up. The issue is how to keep them motivated with different options that generate results and address their food needs.

- **NGO constraints.** NGOs offer very good collaboration to the project and the opportunity to tap personnel, community contacts, financial resources and geographic coverage that the project by itself would be unable to achieve. However, the NGOs are rarely able to manage the dissemination of project technologies alone due to high staff turnover, short life spans and coverage of small areas. Besides, these NGOs usually have priorities other than agroforestry in their programmes, and most are unable to provide any technical backstopping as they usually have no relevant research capacity and few technical skills. In recognition of these weaknesses, ICRAF will continue to provide training and technical backstopping to empower these important partners in scaling up.

- **Diversity of agroforestry technologies.** To date the project has developed and successfully tested appropriate technologies that help small farmers to replenish soil fertility, and to grow woodlots and fodder on their farms. The soil fertility improvement technologies are simple, yet essential for sustainable farming and to eliminate the annual food deficit in the region. Woodlots and fodder offer the opportunity to create cash flow in the farming system. Although each technology was developed in a different country they are all relevant and adapted throughout the region. But, attempting to extend multiple technologies at the same time will reduce the rate at which farmers are contacted.

- **Lack of funds.** It requires only US$20 per month to motivate a field extension Camp Officer and US$200 to hold a community field day (about 200 farmers). It is such small amounts of funding at the farmer level that are required to undertake effective dissemination and scaling up of innovations. At the moment, project budgets for field dissemination activities are very small as dissemination is only being undertaken in a few target areas. Increased dissemination budgets for field activities will be required if dissemination is to be directly stimulated by the project on a significant scale.

**References**


**Freddie Kwesiga, Andreas Böhringer, and Glenn Denning, ICRAF Regional Office, P.O.Box. MP 128, Mount Pleasant, Harare, Zimbabwe. Email: fkwesiga@africaonline.co.zw**
Scaling up participatory development in agricultural settlements

Chesha Wettasinha

The Promoting Multifunctional Household Environments (PMHE) Project was operational in Mahaweli System C, Sri Lanka, from 1991 to 2000. It was a bi-lateral development cooperation between the governments of the Netherlands and Sri Lanka, with consultancy services provided by ETC. During this period, it developed and scaled up a strategy for sustainable agricultural development based on farmer participation.

Introduction

The Mahaweli Development Programme (MDP) is considered the most ambitious development initiative undertaken in Sri Lanka in the recent past. Five major dams constructed on the largest river “Mahaweli” supplied irrigation water to an area of 144,000 ha, deemed unproductive due to lack of water. Nearly 125,000 families were settled in the downstream areas during the early and mid ’80s – many of them poor, landless peasants who left their homelands and journeyed to the “promised land” with the dream of becoming proud owners of a plot of irrigated paddy land. Each settler family was entitled to 1 ha irrigated lowland and 0.2 ha. rainfed highland for a homestead.

The Mahaweli Authority of Sri Lanka (MASL) was the government agency set up for the sole purpose of making this programme work. It played a central role in the construction of irrigation and other infra-structure, in human settlement and in the development (also agricultural) of these vast settlement areas under its purview. Administratively, the area is divided into Systems (B, C, G, H etc), Blocks and Units. An Unit is more or less comparable to a village with an average of 150 resident farm families. Several units form a Block, and several Blocks form a System. Around 11,000 employees arranged in a strictly hierarchical order managed this vast programme until the agency underwent restructuring in the late ’90s and 60% of them were made redundant. Yet, the MASL remains to be one of the biggest government agencies, which as a river-basin authority, will continue to be involved in management of these areas in partnership with farmers and other stakeholders.

The PMHE Project entered the Mahaweli arena in the early ’90’s, when the “Mahaweli dream” had begun to blur. Initial euphoria amongst settler farmers had given way to grievances and apathy – they were far from prosperous; in fact many of them were deep in debt and some had even lost the right to their land. Increasing costs to counter falling yields and poor market prices made paddy farming unprofitable. Socially, too, the settlers were severely affected. There was hardly any feeling of community; disconnected families struggled in isolation to make ends meet. And it was in this context that PMHE was given the task of developing a strategy for sustainable agricultural development for the Mahaweli settlements.

Identifying bottlenecks to development

A 9-month action-research undertaken in close cooperation with settler families in 2 units of System C helped PMHE get a deeper understanding of settler life and identify the specific bottlenecks to development. These were classified under the following broad categories: inability to adjust to new surroundings due to background and origin; blue print approach to development adopted by the MASL which did not meet site specific requirements; insufficient income from paddy farming leading to serious indebtedness; poor social cohesion and lack of organisational capacity among farmers; dependency on the MASL due to prolonged assistance given in an attempt to cushion the “settling in” process.

Developing a strategy for participatory development

These problems that hindered settler development and methodologies to overcome them formed the basis for the 3-year implementation phase that followed. PMHE worked in 12 settlement Units in 6 Blocks of System C during this period. Most of the work was at grassroot level and of an experimental
Farmer participation was set in motion. Agricultural development based on etc. In short, a process of sustainable build linkages for development purposes demand for services, set up enterprises, ability to bargain for better prices, were gaining the confidence and the strengthening. Small group members reliance, forging a collective spirit and finding site-specific solutions to their income and a better microclimate; livestock on the farms resulted in

The changes that took place in the 12 Units were evidence to the success of the strategy. Integration of crops and livestock on the farms resulted in improved family nutrition, higher family income and a better microclimate; farmers were gaining more confidence in finding site-specific solutions to their agricultural problems through experimentation. Small groups proved to be an excellent forum for building self-reliance, forging a collective spirit and forming the basis for community strengthening. Small group members were gaining the confidence and the ability to bargain for better prices, demand for services, set up enterprises, build linkages for development purposes etc. In short, a process of sustainable agricultural development based on farmer participation was set in motion.

Sustaining and spreading participatory development

Having demonstrated that sustainable agricultural development can be achieved within Mahaweli settlements, it was now important to find ways of sustaining and spreading the process of participatory development. Real success was in ensuring that the many thousands of farm families in Mahaweli settlements would have similar benefits. As such, much of PMHE’s energies in its final phase (1996-2000) was focused on creating the conditions in which the strategy would be adopted and adapted by the important development actors in Mahaweli settlements, particularly the farm families and the staff of the MASL. Three large lines of action for scaling up can be distilled from PMHE’s experience:

- Strengthening the capacity of settler farmers to sustain and spread elements of the strategy
- Institutionalising the strategy for participatory development within MASL
- Sharing the experiences with a wider circle of development actors beyond MASL

**Strengthening the capacity of settler farmers**

Providing farmers the knowledge and skills to support other farmers in activities such as farm planning, farmer experimentation, group building etc. was a very effective way of sustaining the process of participatory development. Several methods were used.

a. Farmer to farmer exchange, as an integral part of most interventions, ensured that farmers passed on their experiences and innovations. Farmer to farmer exchange took a variety of forms: group discussions, inter-group events, cross visits, visits to resource farmers, farmer presentations etc.

b. Developing the skills of selected farmers to be village level extensionists/ facilitators was another way of ensuring the horizontal spread of the strategy. This also took several forms, depending on the motivation and interests of the farmers. Praja Sevakas or community servers were those men and women who had a vision and were interested in being facilitators of the process of community development. As such they were given an all-round training and regular backstopping for an extended period of time, so that they could carry on the process of community development even without external assistance. Community mobilisation, Farm planning and experimentation, participatory development and the use of relevant tools, basic accounting and financial management, village development planning and monitoring, small scale business development were among the many topics covered in their training. These Praja Sevakas took an active role in building their communities. Most importantly they were able to identify and analyse problems with the people, find suitable solutions, plan and implement activities, get the services required, monitor and evaluate activities collectively and share the experiences with others. **Resource farmers** on the other hand were farmers who were interested in sharing their knowledge and experiences in a particular area of activity like experimentation, livestock keeping, crop husbandry. These farmers were given additional support in further developing their skills, not only in agriculture but also in aspects such as communication, group moderation etc. Some among them were trained as facilitators of farm planning and were able to work with groups of farmers in developing sustainable farm plans. Others were able to function as village level livestock extensionists capable of providing basic veterinary services, supporting farmers in building marketing linkages etc. The capacities of the Praja Sevakas and Resource Farmers were recognised and acknowledged not only by their fellow villagers, but also by the MASL and many outsiders. Respected as trustworthy and able leaders of the community, they were appointed to office in farmer organisations and looked after the interests of the community. Their technical prowess had earned them a reputation far from home – they were approached not only by farmers, but also by private companies, NGOs etc. who needed farmer-level liaison to support their development ventures in the region.

c. Farmer seminars and workshops were yet another way of getting more farmers involved. **Praja Sevakas** and Resource Farmers often took an active role in such events. Unlike the small-scale farmer to farmer exchanges, these events attracted much larger numbers of farmers from a wider geographical area. Considering that most of the Mahaweli systems are newly settled and sparsely populated areas, these events were excellent for making new contacts and forging new partnerships.

**Institutionalising the strategy within MASL**

The process of participatory development could not be sustained within the Mahaweli systems, unless the MASL supported it. Having mentioned earlier the strictly hierarchical nature of the organisation, its blue print approach to development and its paternalistic attitude towards the settlers, taking on an approach to development based on farmer participation required fundamental changes. These changes had to be brought about at all levels – enabling field staff to take on the role of development facilitators through a process of training and backstopping.

**Photo: PMHE** Interaction between farmers and trainees at a training session of MASL staff.

*LEISA INDIA • SEPTEMBER 2001*
b. Support to manage participation:

Field Officers who adopted a participatory working style needed to be understood and supported by their superiors. Within the MASL hierarchy, this was primarily in the hands of Block Managers, who supervised all field staff in a given Block. Institutional Development and Organisational Strengthening (ID/OS) was considered a very useful tool for Blocks Managers in stimulating the changes required towards managing participation. Being trained in ID/OS, Block Managers were provided backstopping in a variety of applications, i.e. analysing the activities of the Block office in relation to all actors in the community and finding areas for networking, analysing the tasks and skills of Block staff to determine a more efficient use of human resources, incorporating participatory action planning for preparation of annual and seasonal Block plans etc. This intervention brought about noteworthy changes - farmers’ priorities were being incorporated into plans, collaboration was sought with other actors (NGOs, government line ministries and farmer organisations) in development activities, Block staff were working more effectively and barriers among them were being broken down as collective goals were pursued.

c. Creating conditions to sustain the process:

The full potential of all changes at field and middle level could only be realised if the strategy for participatory development was fully integrated within the MASL. It was only then that the benefits could reach settlers in all Mahaweli Systems. Here again PMHE worked on many fronts and with many key persons, mainly at the higher levels of the organisation. Seminars and workshops were specially prepared to provide decision-makers with a clear picture of field developments and raise issues that needed attention. These were also occasions in which farmers were given an opportunity to discuss matters directly with higher officials of MASL. Close collaboration with sectional heads was very important in keeping a continuous and open dialogue about the process of participatory development and its implications. Such dialogue helped to incorporate their views and led to strong support for the strategy. Many openings for integrating elements into routine MASL programmes were found. For instance farmer-to-farmer extension as a means of sharing experiences and farm planning as a tool for sustainable resource management were integrated into many field level agricultural programmes. Policy advocacy was another step in creating the legal framework for further expansion of the strategy into other Mahaweli Systems.

It built on the foundations laid through awareness raising and dialogue and resulted in key elements of the strategy being included into MASL policy for rural development. The new agricultural extension policy of the MASL, for instance, incorporated participatory analysis and farm planning for identifying crops and extents to be cultivated in a given season, farmer experimentation as a means of finding site-specific solutions, farmer-to-farmer extension as a means of sharing experiences, participatory monitoring and evaluation methods for end-season evaluations etc. Similarly, the small group approach to community mobilisation and the participatory analysis and planning approach to strengthening farmer organisations were integrated into MASL’s guidelines for Farmer Organisation strengthening.

Sharing experiences with a wider audience

Although MASL was the main focus of PMHE’s efforts to institutionalise participatory development, it certainly did not exclude others who could benefit from shared experiences.

Networking, workshops and seminars, visits of interested persons and documentation were some of the main activities undertaken for this purpose.

a. Networking:

Two networking experiences deserve special mention as being very fruitful. The first is the PID/PRA (participatory interactions in development/ participatory rural appraisal) Network in which PMHE played a very active role for many years as a member of the working committee. The Network consisted of organisations and individuals, practitioners and trainers in participatory methodologies involved in a variety of sectors – health, agriculture, rural development, relief and rehabilitation. This meant that a wide range of experiences was made available for sharing. This Network made a considerable contribution to promoting participatory development.
in Sri Lanka by sharing and publishing experiences, grooming national trainers and providing access to resources. MASL was introduced to the Network by PMHE and together were able to share some of the unique experiences in using participatory methodologies for development in the Mahaweli settlements. The PTD (participatory technology development) Working Group is the second successful networking experience. PMHE and two other projects working in the field of sustainable agriculture founded the Working Group, which grew to accommodate other projects, government as well as non-governmental organisations. Apart from sharing experiences and learning from each other in a very systematic manner, the Working Group was instrumental in creating a pool of national trainers in PTD. PMHE made a significant contribution to this training effort, which was also used to train MASL staff. These efforts of the PTD Working Group was commended in a study undertaken by a leading university in Sri Lanka to ascertain the effectiveness of training in participatory extension methodologies on the working styles of government field extension officers.

b. Workshops and seminars: The workshops and seminars that fell into this category were mostly at national or regional level. Some were joint initiatives of the above-mentioned networks, and the others were organised by PMHE alone. But all of them had the purpose of bringing the message of farmer participation in sustainable development to those who had a stake in policy formulation and decision making, among them politicians, directors of government agencies, representatives of the donor agencies, heads of research institutes, academics etc. A notable feature in all these events were the presentations of farmers, which gave much more credibility to the message that was being promoted.

c. Visits of interested persons: Although it appears an insignificant aspect, visits were actually a very tangible way of promoting participatory development. Unlike in any of the other options for sharing, visitors could go right down to where things were happening – to the field and talk to the farm families. Despite certain logistical constraints, visits were by far the best exposure to the facts. Even the hardest of sceptics were unable to leave without having food for thought.

d. Documentation: Apart from documentation that was prepared with a specific focus on the MASL, resource material of a general nature was created for the purpose of scaling up. The lack of relevant material in the national language Sinhala prompted PMHE to take on the translation of a number of key books that covered the basics of participatory development and were simple enough for use by field workers and farmers. Case studies of farmers’ experiences published in several periodicals reached a wide audience within and outside the country. More comprehensive information on the strategy as a whole, or important elements thereof, were written up in reports, books etc. that were widely distributed. Special mention in this regard should be given to the video produced by PMHE that provided a concise account of how the strategy was developed and efforts in scaling up within the MASL. The original made in English was versioned into Sinhala for use in Sri Lanka, and in German and French to fulfill the requests of many who wanted to use it in other parts of the world. The video has been screened at many events, national and international, and been distributed to many development organisations worldwide.

Some reflections on scaling up

In reading an article of this nature, there is a tendency to imagine that scaling up was indeed a logically-arranged package of activities which were implemented quite straight forwardly. This, however, was not the case at all. Much of what is written in this article evolved over a couple of years and through a process of action and reflection. Yet, PMHE gained a good measure of success in scaling up - starting with a few farm families in 2 Units of System C the strategy was adapted by the MASL for implementation in all Mahaweli areas, counting direct or indirect benefits to thousands of settler farm families.

In evaluating the success of such a programme, attention would usually be given to the more obvious aspects such as the training of field staff, systematic documentation, capacity building of farmers etc. But there are certainly other, less significant aspects, which deserve mention.

Flexibility - PMHE, like any other bi-sectoral project, had its objectives, interventions, activities etc. set out in neat planning matrices. But in implementation, PMHE was able to adopt a flexible approach that allowed for responding to changing conditions, capitalising on new opportunities and finding the right entry points.

Perseverance - What PMHE undertook was primarily a task of transforming people - changing their attitudes and perceptions through an intensive process of capacity building, the results of which are hard to show and quantify in the short term. This was at times a dilemma for PMHE as a time-bound, donor-funded project. It was only sheer perseverance and commitment that enabled PMHE to get the time it needed to complete, satisfactorily, the task it had begun.

Meeting felt need - The strategy developed through PMHE interventions filled a vacuum in the Mahaweli settlements - it found solutions to the most pressing economic, social and environmental problems of the settlers. As such it found favour, not only in the eyes of settler farmers, but also the MASL.

Shared ownership - Although PMHE invested substantial energy in developing the strategy, it avoided falling into the trap of claiming total ownership to it. In a true sense of participation, it created an environment in which farmers and MASL staff could say, “we did this ourselves”. This is not to say that PMHE was not proud of its achievements, but rather to emphasise the importance of not moulding on to findings in a way that hinders the spread.

Conclusion

What better way to conclude this article than with the words of a farmer who wrote this poem in farewell to PMHE:

“All the efforts that PMHE took to support and guide us, to make us aware To motivate us towards sustainable development We will value as precious gems

The farmers who were fallen Got strength to stand up We respect immensely PMHE’s input in this

Even though you leave us now What you gave us will live on And be given to the next generation As a heritage that lives on”

Cheshe Wettasinha (former PMHE team member), ILEIA, Postbus 64, 3830 AB Leusden, The Netherlands. Email: c.wettasinha@ileia.nl

The author wishes to acknowledge the farm families and MASL staff who so enthusiastically and untiringly worked together with the project in making this experience a success.
A story of hope and of major change

For the first time in 50 years, several state governments are dealing with drought in a different way - moving away from drought relief to drought mitigation. The droughts of 2000 and 2001 have seen Andhra Pradesh, Gujarat, Madhya Pradesh (MP) and Rajasthan undertake major rainwater harvesting programmes - getting people to conserve rainwater that falls in their villages.

This year the MP government organised the world’s biggest ever rainwater conservation programme — Pani Roko Abhiyan (Stop the water campaign). Chanting Gaon ka paani gaon me, Khet ka paani khet mein (Water of the village in the village, Water of the farm in the farm), some 706,304 water harvesting structures were created from February to June.

In the four states put together, there are probably over 20,000 villages today undertaking rainwater harvesting seriously. The good rains of June and July this year have already filled up tanks, ponds, johads (traditional earthen check dams) and other structures built by people with support from government and non-governmental organisations (NGOs). There is jubilation.

But this achievement also poses several challenges for governments and NGOs. Firstly, how will they ensure that the many thousands of structures are properly maintained? Experience shows that when communities harvest rainwater for 5-8 years and keep groundwater recharged, they can withstand as much as three years of consecutive droughts. However sustainability of the structures is crucial and depends solely on how managers these structures. Government apathy has led to the death of millions of the country’s water structures. Where communities are in control this does not happen easily.

In MP, people will be given absolute ownership of the structures to which they contributed one fourth of the costs. The state government is incorporating certain structural changes for transfer of ownership to the gram sabhas (village assemblies) who will be responsible for the maintenance of the structures. Yet, the Gram Swaraj Act that gives power to the village assemblies seems almost ineffective. In Rajasthan, the minister of irrigation, Kamla Beniwal, ordered the demolition of a johad built by the community of Lava ka Baas being of the opinion that: “People do not have the right to tamper with the flow of water... as water resources belong to the government”.

Secondly, the experience of villages like Ralegan Siddhi in Maharashtra, and Sukhomajri in Haryana, which started water harvesting in the 1970s, shows that this is just the beginning of rural ecological and economic regeneration. Water improves agriculture, improved agriculture improves animal husbandry and once people begin to harvest water they begin to take care of their watershed, which means more trees and forests. The combined incomes from improved agriculture, animal husbandry and tree wealth have the potential to not just alleviate, but literally eradicate rural poverty. How will governments and NGOs ensure that water harvesting leads to total ecological and economic regeneration of our villages over 10-15 years?

To make water conservation a sustainable social movement the government needs to put in prolonged efforts. Most of India’s poverty eradication programmes have failed because they have been short-term interventions. Even India’s largest watershed programme in MP is set to withdraw from villages after only four years, and will as in previous experiences undo the advantage of drought proofing.

Ecological regeneration only brings prosperity when it is managed with mature community institutions that need time to be built up.

And, finally, what does this mean for people’s rights over water? India’s water laws, mindless derivatives of the colonial laws, give too many rights to the government. As a result, when chief ministers want water harvesting structures built, the irrigation departments look away. But not when a village or a NGO wants to do so. Will the government get rid of its 19th century hangover and hand over the rights of rainwater to the people in the 21st century? 
How successful is the Wadi model?
Sharad Mahajan, Madhuri Newale, Pratap Pednekar

In 1982, the BAIF Development Research Foundation initiated a programme to improve the living situation of tribal communities in South Gujarat affected by environmental degradation and labour migration. In direct interaction with the tribal communities the Wadi (orchard) model, which combines improvement of human and ecosystem wellbeing, was gradually developed. Today, over 25,000 families from 300 villages have adapted the model. It is now to be implemented in Maharashtra and Rajasthan to cover an additional 20,000 families. In ILEIA Newsletter Vol.16.1 (pp18-19) the Wadi model has been presented and would be useful reading for those interested in a more detailed description. This article discusses the impact of the Wadi model.

Assessing the Dharampur Experience

Dharampur is one of the major tribal blocks of South Gujarat (India) situated in the forest. The area covered under forest is 46% and is declining due to area brought under cultivation (a part of which turned into wastelands) and land used for settlements. The block consists of 237 villages comprising 287,600 people of which 98% belong to scheduled tribes. The hilly region has poor land and water resources as well as infrastructure facilities. The tribal population consists of small and marginal farmers (land holding less than 2ha) and the landless. The farmers use the land for production of food grains. Most of the tribals migrate to urban areas in search of work as hired labour.

The Wadi model has been taken up in the Dharampur block since 1995. 11478 families from 145 villages have adopted the model during the last 5 years.

The effect of the interventions was assessed using community based indicators. Focus group discussions with members of Planning Committees (Ayojan Samitees) of the Village Development Forums (Gram Vikas Mandal - GVK) were organised to develop the appropriate indicators. Discussions were centred around the perception of the community about development, the current situation and their vision. Information on selected indicators was gathered through household surveys, special studies related to cropping pattern, land use, status of development of GVKs and access to services. The overall effect of the model has been assessed through the ‘Barometer of Sustainability’. The results are as follows.

Investing in orchard development

The participating families have established orchards on 4260 ha without disturbing the traditional cultivation area. The major part of the orchards are planted on wasteland (18%) and marginal lands (75%). The orchard plantation includes mango and cashew together with multi-purpose forestry tree species along the borders of the orchard. Farmers have planted 225,000 mango trees, 450,000 cashew trees along with 5 million forestry trees.

Almost half of the total area under orchards is treated with appropriate soil and water conservation measures. These include trench-cum-bunds for gentle and medium slope lands and tree platforms with upstream trenches for steep slope lands.

Table 1: Per family costs for development of 0.4 ha orchard model

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Material</th>
<th>Cost (Rs.)</th>
<th>Total</th>
<th>Period of support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orchard establishment</td>
<td>3150</td>
<td>1030</td>
<td>4180</td>
<td>One time cost incurred during first year</td>
</tr>
<tr>
<td>Land shaping</td>
<td></td>
<td>3500</td>
<td>3500</td>
<td>One time cost incurred during first 2-3 years.</td>
</tr>
<tr>
<td>Orchard maintenance</td>
<td>8040</td>
<td>2100</td>
<td>10140</td>
<td>Recurring cost indicated from second to seventh year of orchard development</td>
</tr>
<tr>
<td>Water resources development and irrigation</td>
<td>1450</td>
<td>1450</td>
<td></td>
<td>Utilisation not for individual basis but on user group basis</td>
</tr>
<tr>
<td>Credit component</td>
<td></td>
<td>On average 25% of the above costs for income generating activities, water resources development, irrigation systems etc,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training and health component</td>
<td></td>
<td>About 5% of the total cost per family for five years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL COST</td>
<td></td>
<td>Rs. 20,000/- (rounded off) i.e. approximately US$450</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Women obtain an additional income from tomato cultivation.
Each family establishes an orchard on their own marginal or wasteland. Core support for orchard development is provided in the form of material (good quality inputs e.g. grafts, saplings of forestry plants, fertilisers, organic manure, farm tools etc.) and training. Considering the long gestation period, the participants are encouraged to work on their own plots for land shaping and aftercare of the orchard. A token cash support is paid to the family for the labour it invests. It helps families to sustain and ensure proper maintenance of orchards. Participants also receive additional support to develop water resources as a group for income generation activities. The support is provided as a partial grant and credit (25%). The costs involved for orchard development on 0.4 ha are about US$450 see table 1.

**Improved utilisation of land and water resources**

The combined effect of orchard development, land shaping and utilisation of available water has led to a change in the cropping pattern.

- Establishment of orchard and cultivation of crops has increased the land use in the range of 30-75%. About 40% of the families have taken up winter cultivation (earlier only rainfed agriculture in summer). The visible impact of the cropping pattern change is crop diversity. Major crops cultivated before the programme were cereals (paddy, coarse millets), pulses (pigeon pea, gram), oil seeds (niger). Farmers added new crops: vegetables (brinjal, tomato, chilli, cucumber, etc) root crops (onion, turmeric, sweet potato), watermelon, wheat, banana, etc.

- About 55% of the families have increased the average paddy area from 0.36 to 0.5 ha. Rice is the main staple food. Growing of other crops for the market is observed in areas having appropriate water facilities. Cultivation of perennial crops is also increasing. This includes coconut, guava, lime, jackfruit, ber, etc. An overall change in the cropping pattern is observed on 51% of the total area under cultivation.

**Settlement in own environment**

Tribals see orchard development as an opportunity to build some assets in the existing subsistence living condition. They take every care to make it successful. In many orchards, elderly family members are engaged in watch and ward throughout the day. About 55% families have either shifted or planned to shift their houses into the orchards. Thus, a resource once considered as written-off has now become a shelter for life. Families have not only started building and utilising productive resources but also acquiring new skills. The baseline situation indicated that only 13% of their income was generated from local productive sources and the economy was primarily dependent on labour migration. Orchards have now started bearing fruits, the cropping pattern has changed, the use of inputs (seeds, fertilisers) has improved and subsidiary agricultural activities such as mango grafting, nursery raising, etc are being initiated. This has brought about a complete reversal in the sources of income and about 60% of the families now generate more than half of their income from local productive resources.

**Improved quality of living**

Settlement of tribals in their own environment and opportunities for developing own resources is reflected in the improvement of their living conditions. The visible changes are observed in a considerable reduction in migration, self sufficiency in food grains and improved access to safe drinking water and health services.

**Reduction in migration.** The baseline situation indicated that 85% of the families were migrating for an average period of 68 days. The people engaged themselves in labour work at construction sites, chemical factories, grape gardens, vegetable packaging centres etc. Women migration was also a common feature in the area and was observed in 35% families. This situation has changed and about 76% families have reduced the migration period (of which 50% have stopped migration). Migration of women has also come down to 15%. People now look forward to increase productive sources of income and simultaneously augment their income through opportunities of local labour.

**Self-sufficiency of food grains.** On an average the families were procuring food grains worth Rs. 1680/- annually, constituting 40% of the cash income. Now, the families have directed their efforts towards achieving self sufficiency in food grains. This has been observed as an immediate effect of land treatment. The area under paddy cultivation has increased. More than 93% families have reduced their food grain purchases of which 57% do not purchase any more. In fact 29% families have even generated income through sale of food grains.

**Availability of fuelwood.** Another significant requirement of families is fuel wood. The families were dependent on forest resources to meet the same. Various fuel-wood species namely Leucaena leucocephala, Acacia auriculiformis and Glicidium trees have been planted around the orchard. These plantations can fulfill fuel wood requirements up to 60% depending on

---

***The fruits of the orchard plantation, ready to harvest***

***Women have learned how to care for the fruit trees.***
the number of established forestry trees. Promotion of energy saving devices such as improved cook-stoves has slightly reduced the fuel-wood requirement. 26% of the families are using these improved cook-stoves.

**Development of support services**
(Primary Health Service, Safe Drinking Water and Credit). Usually the families had to travel up to 10 km to avail even primary treatment. Travelling within the area is difficult due to lack of transport and infrastructure facilities. As a result, families used to get treatment from traditional healers and Primary Health Centres wherever easily accessible.

Local youth (especially women) trained as Village Health Guides have not only improved access to health care but also made the communities more aware on health related aspects. This is quite indicative from the fact that Village Health Guides have been the first contact for primary treatment. The first trimester registration of pregnant women has increased from 27% in 1996 to 42%. Also, national campaigns such as Pulse Polio have succeeded with over 95% coverage for immunisation.

The only safe source of drinking water available before the programme was hand pumps, as open wells were not chlorinated. Yet 31% hand pumps were not functional. Regular chlorination of open wells, awareness generation among families for home chlorination and putting non-functional hand pumps into use through repair and maintenance has ensured safe drinking water to about 80% families.

There were only two banks in the area catering to the needs of people from 145 villages. The limited availability of resources together with poor access to credit reduced the scope of development. The programme interventions have brought improvements in the existing resources use. The GVMs are empowered to mobilise and manage the resources in terms of savings and credit. Credit facilities for consumption as well as production purposes are now available in 109 villages.

**Building local action**

The Wadi model has become a common thread for participating families and provides them a group identity. A total of 1790 Ayojan Samitee members from 143 GVMs are directly involved in the management of all village level activities. Development of the GVM is linked with a feeling of ownership among members, operational regularity and consistency, self-management capacity, resource mobilisation and responsiveness to people’s needs. This is seen from actions like establishment of community dwellings, initiation of regular savings, grain banks, organisation of community marriages, literacy classes, collective procurement and sale of produce, etc. The credit facility available through the GVMs has provided easy access to timely and adequate credit to the participants and ensured sustainability of the development in the long run.

Due attention is given to women as well. All the orchards have joint ownership of husband and wife. Women are organised into self-help groups and take up supplementary income generation activities with regular savings and credit. Simultaneously, need based activities to reduce workload and drudgery of women are taken up.

The field functionaries are engaged in mobilising the people and promotion of technologies for common use through demonstration and training. These functionaries, being local, have an advantage of better understanding the people and the village situation. The training and work experience has given them an opportunity to acquire a special status “a helping hand” in the village and confidence in dealing with external agencies. There are 114 field guides, 111 Village Health Guides, 250 self-help group leaders, 120 barefoot accountants, 71 hand pump technicians, 87 oil engine technicians and a number of nursery technicians.

The strong cadre of local functionaries, Ayojan Samitee members and self-help group leaders has boosted the local initiatives and enhanced the management capacity of people.

**Score on the “Barometer of Sustainability”**

The “Barometer of Sustainability”, a tool developed by the International Union for Conservation of Nature (IUCN), is used to combine indicators related to human wellbeing together with ecosystem wellbeing. It treats both people and ecosystem equally on two scale axes as shown in Fig. 1.

The scale is divided into five sectors in an ascending manner from unsustainable (bad) to sustainable (good). Conclusions about conditions of people are expressed as a point on the human wellbeing axis as an index of human wellbeing. Similarly, conclusions about conditions of ecosystem are expressed as a point on ecosystem wellbeing axis as an index of ecosystem wellbeing. The intersection of two points provides reading of overall wellbeing and progress towards sustainability. The tool implies that improvement in human wellbeing should not be at the expense of a decline in ecosystem wellbeing.

Fig 1 indicates the current stage of development in the tribal region of Dharmpur due to the model interventions as discussed above. The regeneration and effective utilisation of available resources - mainly land and water - are considered as important dimensions of ecosystem wellbeing. In order to bring about these changes, settlement of tribes in their own environment, changes in quality of living and building local action are crucial and thus these factors are considered as part of human wellbeing.

The intersection of human wellbeing and ecosystem wellbeing scores falls on the border of the intermediate to almost sustainable band with the final score at 60. This indicates a balanced growth at

![Fig 1. Barometer of Sustainability](image-url)
The end of five years. This five-year phase can be considered as a formative phase for reconstructing the resource base and building confidence among the people. The programme has not just remained planting trees but has opened a basket of opportunities to shape the people’s future. This is quite evident from actions such as families shifting their houses into the orchards, becoming receptive to new concepts and techniques (mango grafting, nursery raising, composting, appropriate irrigation systems, immunisation, etc.) and thinking towards optimum utilisation of available resources. The GVM has taught people to look beyond self interest.

The key to these changes is: linking the development of people and the environment. The synergetic effects of these efforts lead to sustainable development. There is a direct co-relation between the quality of ecosystem and human wellbeing. The status of health, wealth and quality of living are dependent upon diversity, productivity and nature of the ecosystem of which people are an integral part. The wellbeing of an ecosystem depends on people’s actions which in turn flourishes people’s lives.

**Reasons of success**

Families, initially sceptical about the interventions, start realising the potential of developing a life time asset soon after seeing the initial results. Planting of trees assimilated not only helps to establish the orchard but also brings change in agricultural practices, health seeking behaviour and women’s status in the family as well as in the village.

The newly found identity as “wadi owners” inspires them to come together and the process of development gets a boost through collective action. The GVM becomes the vehicle of “people-owned, people-managed development”. Thus, development takes the shape of a mass movement with mass village participation.

A cadre of local field functionaries gets associated with the GVMs to facilitate extension of services in the areas of agriculture, health, record keeping, funds management, etc. The GVFs initiate the process of building resources through savings, credit and support services development (grain banks, agro service centres etc.) to fulfil the people’s needs. The increased trustworthiness, credit worthiness and self-confidence enable tribals to gain access and control over resources.

With the passage of time, an entry with a single activity (orchard development) leads to comprehensive community development, individual thinking is replaced by collective action and the tribals once trapped in a dependency syndrome enjoy freedom and power. Thus, the model curves out a new family with the help of already available sources, inspiration and perspiration.

**Replication of the model**

The time-bound, result oriented model that started with just 42 families, from eight villages in 1982 in the tribal block of Vansda in South Gujarat, is replicated in tribal blocks of Maharashtra, Gujarat and Karnataka covering about 25,000 families from about 300 villages. It is also to be implemented in Maharashtra and Rajasthan to cover additional 20,000 families.

The model has received worldwide recognition. The project was presented as a successful replicable model for poverty alleviation at the UNDP Forum of Ministers for Poverty and Environment in NewYork, USA in 1999 and at the Global Dialogue in Hannover, Germany. Various government agencies in India are now involved in promotion of orchard development and a few of them have supported NGOs taking up the model. BAIF is also engaged in providing techno-managerial support to development organisations. For this it has received the support from Government agencies such as National Wasteland Development Board, National Rural Employment Programme, Tribal Development Department, District development agencies, Banks and various international agencies.

The model has evolved over a period of time considering peoples’ needs. Agencies adopting the model should consider its comprehensive nature and use it with suitable changes considering local conditions to achieve maximum benefits.

A multidisciplinary team comprising of professionals from agriculture, community health, engineering, social science and extension workers is required to manage the large-scale interventions. It is necessary to develop forward and backward linkages considering resource development and utilisation. These include banks, markets, credit institutions, research organisations etc. The agencies must use participatory strategies, emphasise on capacity building of people, bring in gender development and promote local institution development to achieve sustainable development.

Poor infrastructure limits the pace of development even after successful orchard development. Proper roads, availability of electricity, banking structures, inputs supply centres, market information and development of marketing facilities are the key areas in which government agencies could provide support. Also governments need to mobilise resources to provide long term and timely financial support.

**Conclusion**

The magic of wadi is that it provides self-employment and thereby creates confidence among tribals for self-reliance. It provides opportunities for tribals to make a decent living on the strength of natural resources in their vicinity and within their reach. The wadi model has proved that the poor, the illiterate and the oppressed can be idealised through mutual co-operation and collective efforts.
Economic conditions for sustainable agriculture
A new role for the market and the state

Ruerd Ruben

Field research by the Development Economics Group of Wageningen University on various agro-ecological practices used by farmers in Central America (Nicaragua, Honduras, Mexico and Costa Rica), East Africa (Kenya, Ethiopia, Zanzibar) and West Africa (Mali, Burkina Faso, Benin) provides interesting comparative results regarding the economic effects in different settings. For this research, four specific criteria were used to assess the economic attractiveness of different types of agro-ecological practices: (i) profitability, e.g. the contributions to farmers’ income and consumption, (ii) effect on input efficiency, (iii) consequences for labour use, and (iv) impact for risk management. On the basis of these findings, recommendations for policy reform are discussed.

Profitability

Adoption of agro-ecological practices can only be expected when farmers attain higher and more stable income and consumption opportunities. Contrary to what is usually expected, farmers are likely to apply yield-increasing and sustainability-enhancing inputs for commercially-oriented production activities. In the cotton belts of Southern Mali and Burkina Faso, fertilisers, crop residues and animal manure are mainly used for cash crops that guarantee sufficient monetary returns to warrant these costs. Similarly, animal traction and improved tillage yield higher returns when applied on more fertile fields where commercial crops are grown. In the Central Chiapas region of Mexico, crop residue mulching only appears to be profitable when combined with animal traction on fields devoted to intensive market-oriented maize activities.

Although we found that agro-ecological practices are likely to be adopted by subsistence-oriented, medium-size farmers in remote regions where opportunity costs are usually low, farmers’ engagement in market exchange can still be considered an important condition for profitable and sustainable agriculture. Engaging in trade provides financial resources for the purchase of complementary inputs and consumption goods. Market development enhances the willingness to invest, while involvement in market exchange generally improves farmers’ responsiveness to price incentives.

Input efficiency

Agro-ecological approaches are strongly based on the substitution of chemical inputs by integrated nutrient and pest management systems. High costs of inorganic fertilisers and other agro-chemicals often drive farmers to rely on locally available resources. Reducing the reliance on purchased inputs implies that good substitutes can be found and that complementary relations between different inputs are recognised.

Prospects for sustainable agricultural intensification strongly depend on the possibilities to improve input efficiency, e.g. the marginal returns derived from an additional unit of (organic or inorganic) inputs. Nutrient efficiency (i.e. fertiliser uptake) is determined by the availability of complementary micro- and macro-nutrients, notably soil organic matter and phosphorus. Nutrient recovery and the efficiency of uptake can be enhanced through (i) soil and water conservation measures, and (ii) frequent nutrient applications at times required by the crops (e.g. shortly after sowing and with sufficient rainfall). Both activities are highly labour-demanding and can hardly be mechanised. Input efficiency tends to be low when complementary inputs are not available at the right time or in sufficient amounts.

Organic and chemical inputs are not full substitutes, and combinations of locally available resources with selectively applied external inputs often yield the best results. We found that farmers hesitate to refrain completely from the use of purchased inputs, because it permits better timing of activities, reduces the demand for labour in critical periods, and contributes to a better appearance of the products in the marketplace. Given the low nutrient content and the delayed nutrient availability from organically produced fertilisers (green manure, mulch, dung, compost), chemical fertilisers are gradually reduced but not completely abandoned.

Labour productivity

Most analyses of sustainable practices devote attention to short- or long-run yield effects without acknowledging labour requirements and returns to labour. Family labour is thus wrongly considered as an ‘abundant’ resource. For most small farmers labour is scarce and strong limitations exist for substituting external inputs by labour. For a systematic evaluation of the attractiveness of such practices from the farm household’s perspective, returns to land and labour need to be compared simultaneously. Agroecological intensification can only contribute to poverty alleviation when returns to land and labour increase simultaneously. When agroecological practices are analysed, attention has to be given to marginal returns compared to other activities (i.e. off-farm employment; hiring-out of land).

Agroecological practices can be relatively intensive in the use of labour. Physical soil conservation measures promoted in the Central American hillsides and West African lowlands have resulted in yield increases, but require large amounts of labour for construction and maintenance and involve substantial costs for the purchase and transport of materials. Given their high labour intensity and long gestation period, returns to labour of such measures are mostly critical. Similarly, green manure practices and crop residue mulching in Mexico and Honduras require additional labour for harvesting, transport and under-ploughing. Mixed cropping and agroforestry systems in Central America and East Africa show low returns to labour due to high establishment, maintenance and harvesting costs. Production of fodder crops for livestock in West Africa improves the availability of manure and enable farmers to recycle crop residues, but demand considerable labour investment. Labour requirements for integrated pests and disease management in Zanzibar are equally high due to the substitution of manual for chemical operations. Mechanisation is not a feasible option due to very sloping terrain and the small scale of operations.

We found that high labour intensity can be a major limiting factor for adoption. Labour tends to be scarce in semi-arid areas during the periods of soil preparation, weeding and harvesting and competition for labour occurs when mulching, manuring or crop residue recycling are introduced. Resource-poor farmers are likely to derive part of their income from off-farm activities that have to be reduced when labour-led intensification of their farming system takes place. Farmers are likely to adjust their production system only when the additional income derived from those activities favourably compares to labour’s opportunity cost. Some practices, notably physical soil conservation measures, can be executed in off-season periods, but take up leisure time that may be reserved for social or communal purposes.
Risk-coping

Resource-poor farmers prefer to rely on fairly diversified patterns of activities to ensure appropriate levels of risk management. Farmers facing risk prefer immediate revenues and therefore investment activities with long gestation lags are not popular. Diversification of cropping and livestock production and their integration with (agro)forestry, aquaculture and improved fallow practices could reinforce the resilience of farming systems through processes of nutrient recycling, biodiversity management and integrated pests and disease control. Consequently, yield levels tend to be more stable and dependency on purchased inputs can be reduced.

Risk management can also take place through farmers’ engagement in off-farm and non-farm activities. The revenue streams derived from these activities are far less dependent on variable weather conditions and thus provide an adequate insurance against shocks.

Policy Reforms

Agroecological practices are widely promoted by farmer groups and NGOs to reduce the dependency on purchased inputs and to reinforce ecological sustainability. On the long run, genuine sustainability requires that these practices become economically feasible and independent of external support. To facilitate sustained adoption of agroecological practices, the following economic policy conditions should be in place:

- Stable and remunerative market prices for agricultural products are effective as incentives to mobilise resources towards sustainable production systems. Massive adoption of new cropping systems could, however, lead to pressure on market prices and loss of initial returns.

- Agricultural intensification also implies that land, labour and capital resources can be effectively mobilised. Secure and recognised land and water rights are an important condition to enhance farmers’ willingness to invest. Well-defined ownership, use and transfer (inheritance) rights permit farmers to invest in land improvements and input purchase, and provide a suitable collateral for lending.

- Rural financial systems are necessary to facilitate farmers’ borrowing for investment, input purchase and insurance purposes. While formal banks are usually less inclined to lend to smallholders, local credit and savings schemes could contribute substantially to reduce transaction costs and risks for rural investment.

- Reinforcement of the market environment can be considered as an important incentive for investments in sustainable agriculture. However, incentives should be related to ‘farmer needs pull’ rather than ‘technology push’. Market prices should reflect real scarcity relations as perceived by the farmers and must not be distorted by improper interventions by the state or local NGOs. Subsidies on inputs or credit are not useful to enhance the lasting adoption of agroecological practices. Subsidies on demonstration plots are less convincing to farmers compared to experiments conducted on their own fields and investments made with own resources. In a similar vein, financial support systems based on farmers’ own savings proved to be far more sustainable than subsidised credit systems.

Interventions to improve the market environment in favour of agro-ecological practices:

- Increasing the prices of imported inputs like fertilisers and other agrochemicals through adjustment of the exchange rate (devaluation) and elimination of input subsidies;
- Improving the efficiency of input delivery and output marketing systems, looking for a reduction of the transaction costs involved in market exchange through (public and private) investments in services and infrastructure provision;
- Introduction of user charges and fees for water, roads and technical assistance to facilitate the rationing of scarce resources towards the most efficient farmers, and to guarantee the institutional sustainability and maintenance of these services;
- Creation of more competitive markets through reduction of the market entry costs, including the establishment of farmers trading co-operatives, market information services, etc.;
- Improving value addition in agricultural production and marketing through investments in agro-processing, trade centres, product certification, etc.;
- Enhancing the backward and forward linkages of agricultural production, promoting integrated agro-commodity chains based on delivery of improved implements;
- Diversification of factor and commodity markets, enabling farmers to gain access to off-farm and non-farm income sources that will enable the intensification of their farming systems.

Public investments in infrastructure are required to support the development of local factor and commodity markets. Market development and reduction of transport costs are the most important requirements for sustainable agricultural intensification, since exchange relations favour access to complementary inputs and provide incentives for investment. Improving poor farmers’ access to physical infrastructure represents a major condition for equitable and sustainable rural development. Without such efforts, low-input technologies tend to be restricted to medium-size farmers who are only marginally engaged in market exchange.

Ruerd Ruben, Development Economics Group, Wageningen University, Hollandseweg 1, 6706 KN Wageningen, The Netherlands. Ruerd.Ruben@alg.OE.WAU.NL

References

Farmer to farmer information sharing... most effective

Many innovations by agricultural scientists and dynamic farmers are not reaching the actual farmers or targeted groups due to lack of communication. So the benefits of such innovations have not yielded many possible results. The agriculture extension wings of both the agriculture department and the universities are trying to pass on the new technologies to the farming communities through media like newspapers, magazines, television, All India Radio, etc, and even through training, workshops and seminars. All these practices were able to communicate the new technologies only to a limited number in a huge population of the farming community. In my knowledge and experience better results have been obtained when the same were demonstrated on farmers’ fields. Farmers accept these technologies when they watch them working on a farmer’s field than in a research station demonstration. Publicity about the adoption and its success in such a farmer’s trial is very important so that a huge population can know, visit and get convinced. A similar trial on the system of Rice intensification, also known as the Madagascar method of Rice cultivation, was practiced on my farm during July 2002 and December 2002 and was written about in the Prajavani weekly magazine and spoken about on AIR.

800 farmers from Andhra Pradesh, Karnataka and Tamil Nadu have visited my farm and 40 of them are already practicing this method and another 150 farmers want to adopt the same during February 2003. Again such new technologies have to be discussed in the Grama Panchayat and Grama Sabha meetings. The Sthree Shakthi groups (SSG) have to be educated more to enable more women to participate and insist that their men folk too adopt such new technologies.

Since NGO’s have more contacts with farmers than any other government extension services, the government should co-ordinate their extension services through NGOs for better implementation and results. During the last 3 years, several organic farmers have formed district level organizations to share and discuss their experience in organic farming. The first one started at Hassan district followed by Tumkur, Bangalore rural and Kolar. One Sunday in each district, about 150 to 400 farmers assemble at a farmer’s field who hosts them free of cost, and the next month’s host at the meeting itself. Even though some small donations ranging from Rs. 250 to Rs.1000 towards the cost of food is made, usually no host farmer accepts this money. The association uses this amount for printing and postage charges. Many farmers bring seeds and plants as gifts for the host farmers and also for free distribution among the participants. Not only knowledge and experiences are shared among the farmer participants but they also have to follow some good habits which could bring honor and respect for the farming community. I know some similar farmers’ group in Tamil Nadu at district and even at taluk level, who are continuing very good traditional agricultural practices in a big way without any money being spent on these assemblies. Now farmers all over the world have understood the bad effects of high cost external inputs and its effects on productivity, and the ensuing environmental damages, and are fast changing towards eco-friendly Organic Farming.

L. Narayana Reddy
Srinivasapura, Hanabe P.O.,
Doddaballapura Taluka,
Bangalore Rural District,
Karnataka 561 203
Ph : 76-51360

Practical guidance is provided for programme planners on how to design community-based Natural Resource Management programmes that can be scaled-up. It is based on a review of programmes that have achieved some degree of success in this sphere. Recommendations are put forward on policy preconditions, programme strategies, structure of programme implementing agencies, and appropriate financing mechanisms.

Ripples of the society: people’s movements in watershed development in India. Sheena, Ghandhi Peace Foundation / Sharma PN (editor) Participatory Watershed Management Training in Asia Program FAO. 1998. 128 pp. For copies write to: Environmental cell: Gandhi Peace Foundation, 221 Deen Dayal Upadhaya Marg, New Delhi-2, India, or, Dr. Prem N. Sharma, FAO, PO Box 25, Kathmandu, Nepal. The document is based on eight case studies from the Himalayas and the rainfed desert areas of India. Traditionally, watershed management has been a way of life in the Indian mountains and rainfed areas. The analysis puts the experiences in a historical context to explain why efforts started dying out in the recent century. This happened as the society lost its ownership and control over the process of watershed development due to interference of an alien culture, which continues to impose hypothetic solutions even today without any regard to the native culture. This situation continues to accelerate the loss of confidence among the people in their own capabilities. The analysis shows how to revert this situation so that the national efforts can result into sustainable efforts where the official efforts and the people’s efforts work in tandem to make the present day watershed development efforts sustainable (Sharma). A booklet with inspiring stories of endogenous development.


A description of “lessons” learned from all over the world with two scaling types, the first related to ‘scale’, the second to ‘scaling-up’. The paper discusses the conditions under which INRM is most likely to be successful, and the need to reconcile current top-down and bottom-up approaches, both of which are needed to achieve effective delivery in a structured programme beyond the scale of a few villages or isolated success stories.

Scaling up: Critical factors in leadership, management, human resource development and institution building in going from pilot project to large scale implementation: The BRAC poultry model in Bangladesh by Md. A. Saleque, 1999. Available on: http://www.husdyr.kvl.dk/htm/php/tune99/5-Saleque.htm BRAC’s poultry program in 1999 reached more than one million poor women following a model that is now known as the Bangladesh or BRAC-DLS model. This paper has documented the model’s potential for creating income for the poorest women. Learning on the basis of feedback from the users has been a key element in its evolution. The model is now applied in 380 of Bangladesh’s 460 Thanas.


The Inter-American Foundation has chosen to meet the challenge of scaling up through outreach strategies in Colombia. Recognising that structural poverty can only be overcome through broad-based alliances among local people, their organisations, the State, the private sector, and the non governmental organisations, the Foundation has sought to establish strategic partnerships with key Colombian entities. The partnership with Fundación Social, a unique case study of how to scale up, is described in detail on this website.


In this article the authors present their scaling up research project. The agroecological approach to rural development, promoted by the Latin American Consortium on Agroecology and Sustainable Development (CLADES) and other NGOs in Latin America, emphasises the need to consider environmental, social, technical and cultural aspects of sustainable rural development. In Chile, Cuba, Peru and Honduras, members of this consortium have been promoting agroecological initiatives for several years with tangible benefits to food security and natural resource conservation in specific rural communities. Given the benefits and advantages of such initiatives, two basic questions emerge: (1) why these benefits have not disseminated more widely and (2) how to scale up these initiatives to enable wider impact?

The research proposed by this project will test a series of strategies to scale up successful agroecological experiences in specific areas of four countries. The areas chosen have contrasting potentials in terms of institutional capacity, social organisation and environmental and economic conditions.

The main hypothesis of this proposal is that scaling up is possible if NGOs are able to:
- network more effectively with farmers’ associations and other institutions
- strengthen links, training, dissemination and validation at a farmer to farmer level
- strengthen the role of rural promoters
- improve the participation of farmers in niche markets.

The goal of the project is to initiate and monitor these four scaling up experiences, undertake a comparative analysis to evaluate the impact of the different strategies employed, and systematise lessons learned (IDRC).

Financing the future: options for agricultural research and extension in Sub-Saharan Africa by Beynon J [et al.], 1998. 163 p. ISBN 1 902477 00 6. Oxford Policy Management, 6 St Aldates Courtyard, 38 St Aldates, Oxford, OX1 1BN, UK / admin@opml.co.uk

The objective of this book is to review options for sustainable financing mechanisms for agricultural research and extension to meet the needs of smallholder farmers. The study focused primarily on assessing the situation in, and seeking policy proposals for, Sub-Saharan Africa, but reviewed a broad range of international experience reaching conclusions that are of much broader application. The outcome is a clear and well-constructed essay on financing research and extension. The summary table of operational guidelines at the end of the book is helpful for readers who want to compare the numerous options for alleviating financial constraints described in the text. (WR)

The contributors to this volume have presented a wealth of experiences, data, concepts and competing analyses of what is happening in the relationships between NGOs, states and donors. Donors have poured funds into NGOs, governments have allocated them major responsibilities and their number and size have grown. This book raises the responsibilities and their number and poured funds into NGOs, governments, states and donors. Donors have concepts and competing analyses of what is presented a wealth of experiences, data, reviews and detailed case studies of African, Asian and Latin American NGOs is a complex one. However, the authors warn that NGOs are getting too close to donors and governments and more distant from the poor whom they seek to assist. (WR)


This book presents the outcome of an international workshop held in the Philippines, promoting farmer-led approaches to agricultural extension. The workshop distinguished between truly farmer-to-farmer extension, extension undertaken and controlled by farmers themselves, and approaches aiming at a greater involvement and influence of farmers in extension organised by others, governmental or non-governmental organisations. Based on a very rich collection of cases from all parts of the world, the book formulates lessons and recommendations on both forms of farmer-led extension. According to the authors the second form of farmer-led extension may be applicable on a wider scale but only if public sector extension is really prepared to give up part of its power and become responsive to interests and initiatives from farmers. (LwV)


This publication of FAO is the third in a series of field manuals on small farmer group development, and deals with the topic of developing inter-group associations. As a development strategy small groups have been promoted in order to strengthen the collective self-help capacity of small farmers. However, individual small groups often do not have the resources needed to pursue broader objectives. In such cases some sort of inter-group cooperation is needed to achieve results. With this publication FAO aims at helping groups to build inter-group associations that are capable of financing and managing their own activities, using their own resources and without need of outside help. The manual provides practical information on this subject, in the form of guidelines that cover the whole process of establishment to management of an association. This manual is available for free, downloadable from internet, and FAO encourages users to translate it into their own language and to adapt its contents to their own conditions. (WR)


This booklet, written for field staff and middle-level extension managers, describes a community-oriented approach to rural extension based on farmer experimentation and learning. The action-learning cycle integrates four main phases: social mobilisation through a situation analysis carried out jointly by insiders and outsiders, community-level action planning, implementing of activities and farmer experimentation, and monitoring and evaluation through sharing experiences and ideas. A major focus is on local institutional development. The process in practice - with all its steps - is described and clarified through examples from the field.


Upscaling individual successes to a large-scale programme calls for a perspective of macro-management which, at the same time, has to be rooted in and responsive to the micro-level. This paper describes the experiences of the IGWDP in semi-arid India with the upscaling of participatory watershed development over wide areas. Both the involvement of stakeholders at international, national, district and local levels and the field level collaboration of NGOs, community-based organisations and government departments are discussed and criteria for selection are given. Micro-level watershed rehabilitation reverses environmental degradation and permits a shift in sustainable productivity in the lower slopes of watersheds. This report contributes to the search for participatory but rapidly replicable approaches to micro-watershed rehabilitation. (WR)


This book is written as a companion volume to “Reasons for Hope”, a collection of case studies of programmes that have succeeded in improving prospects of rural households. Successful large-scale and sustainable programmes for rural development are much more the exception than the rule. These books focus on rural development programmes that have had important impacts in their countries and some even beyond their national borders. A wide range of successful experiences in developing countries all over the world is described. In “Reasons for Success”, the authors analyse not only how these initiatives have become successful, but also how to generalise these often local initiatives. The most important aspects that contributed to the success of the initiatives are dealt with in the different chapters of the book: the learning process and assisted self-reliance; the importance of good leadership; local organization and participation; knowledge about how to take better advantage of the available resources, natural, physical and human. This readable book is a rich source of information that shows ways to improve people’s livelihoods whilst sustaining the environment. (WR)

The main papers of the Natural Resources Advisers’ Conference on sustainable rural livelihoods organised by DFID in 1998 are collated in this book. The book opens with an informative introduction on definitions and explanations of sustainable livelihoods, written by Diana Carney, the facilitator for DFID’s Sustainable Rural Livelihoods Advisory Committee.

The papers in the Key Issues part relate to policy consistency. The Entry Point papers go into some detail about the contributions to the sustainability of rural livelihoods that can be made by involvement in any particular area (biodiversity, ethical trade etc.). This book marks a starting point for thinking about a relatively new policy direction and the opportunities it presents. (WR)


These are the proceedings of a workshop organised by the Overseas Development Institute (ODI) and Drylands Research in the series “Transformations in African agriculture” held at the London School of Economics in January 2001. It is part of a study that aims to relate long-term environmental change, population growth and technological change, as a follow-up to the well-known study by Mary Tiffin, Mike Mortimore and Francis Gichuki in Machakos District: “More people, less erosion: environmental recovery in Kenya”. The hypotheses and policy recommendations generated by that study were tested in four other African dryland environments: Makueni District, Kenya; Diourbel Region, Senegal; Maradi Department, Niger; and Kano Region, Nigeria.

Farmers’ investments over time were compared in order to increase understanding of the effects of government policies on farmers’ strategies and their choices between farm and non-farm activities. For each study area, several working papers and a synthesis were prepared. An overall synthesis was discussed at the workshop as reported in these proceedings. The results confirmed that rural people are innovating and finding solutions and opportunities in response to market and environmental conditions, but have often been constrained in these efforts by inappropriate government policies that do not give space for local dynamics. The working papers and syntheses can be obtained from Drylands Research or at the website (address see above), which contains the abstracts of all the working papers. (AWB)


This publication of CTA is also available in French (Les révolutions de l’information) and an electronic version can be found at www.cta.nl. With this book CTA addresses an important topic. The possibilities for information gathering and sharing are rapidly increasing at the moment due to fast technology development. But what perspectives does such development have for rural people. Efforts to use communication in rural development have three aims: provide information to audiences; help audiences find information and facilitate dialogue among audiences. This book comprises success stories of projects that promote information exchange in rural areas of Africa. The book is divided into nine sections, each with up to six stories about particular institutions or sets of institutions. There are sections on radio and television, newspapers and newsletters, literacy and local languages, computers and telecommunications, farmers’ groups and markets, farmers’ knowledge, research and extension links, research networks, and libraries. The stories are carefully chosen; only proven local or national initiatives that really contribute to communication are included. Therefore the book is very useful to everyone who wants to profit from information technology development. (WR)

Participatory watershed research and management: where the shadow falls by Rhoades RE, 1998. 20 p. International Institute for Environment and Development (IIED), 3 Endsleigh Street, London WC1H 0DQ, UK / sustag@iied.org. (IIED Gatekeeper series, ISSN 1357-9258; SA 81).

Professor Robert Rhoades, who has more than 30 years experience in international development, warns in this paper of the pitfalls in the conceptualisation and operationalisation of integrated participatory watershed projects. He mentions a number of problems, which he calls “landmines” that can be expected on the way of implementing participatory watershed management. All these landmines are discussed with remarks on how to avoid them. The paper closes with urgent steps to be taken and an appeal to share experiences and to learn from mistakes. (WR)


Lessons learned in Latin America about the use and dissemination of cover crops in different agroecosystems need to be made more widely available not only in the Spanish-speaking, but also in the Anglophone regions. That is the aim of this workshop report. It concentrates on smallholder agriculture in developing countries where cover crops could provide an appropriate technology for risk-prone and resource-poor farming situations. The selected case studies from different countries within Latin America, which have been analysed during the workshop, form the skeleton of the report. The numerous experiences and variety in lessons learned for a wide range of agroecosystems makes this report a useful reference tool for extensionists, researchers and NGO workers around the world. It is well written and easy to understand. (WR)
Research into the relationship between gender and natural resource management in Sub-Saharan Africa has taken a step forward due to people like Ritu Verma. Her analysis of the relationship between people and land recognizes the extraordinary complexity of soil management in an era of macroeconomic change. It centers on the social relations that dictate land use practice in Maragoli District, W. Kenya. A large part of the book is dedicated to the case study, which focuses on the complex gendered dimensions of soil management, farming and livelihood strategies of individuals who are differently positioned.

Part one is an introduction to the research, part two gives the historical background of the region. Part three, four and five present the research findings and gender analysis of the case study. The book illustrates the complexity and diversity of women’s lives with extensive use of personal narratives and photographs from the farmers of Maragoli. Interesting reading for researchers, practitioners, and professionals in development organizations, grass-roots organizations and government working on issues of gender, soil management, land tenure, income generation, and off-farm livelihood strategies. (WR)


This report describes experiences with an approach to participatory research and development in Latin America appropriate for poor farmers, called Local Agricultural Research Committees (CIAL, spanish abbreviation). The CIAL is a farmer-run research service that is answerable to the local community. The community elects a committee of farmers, the CIAL. The CIAL conducts research on priority topics and reports its results back to the community. Both CIAL members and the community benefit from this approach.

The report describes the history and results of a number of CIALs in Equador and Colombia. It is an impressive example of how poor farmers can help themselves and their community to increase their food security. The report ends with a long list of research topics investigated by CIALs throughout Latin America. The main topics are development of local crop varieties, resistant to pests or adapted to local soil conditions (potato, maize, cassava etc.) and evaluation of livestock diets for poultry, pigs etc. There is also a bibliography with training materials and manuals. This report is a source of useful information for anyone involved in agricultural research and development. (WR)

Social and institutional issues in watershed management in India, 2000. 407 p. ISBN 0 942717 86 4, OIKOS, India and International Institute of Rural Reconstruction (IIRR), Y.C.James Yen Center, Silang, Cavite, Philippines / information@iirr.org financed by DFID-UK.

This resource book produced during a workshop held in India, in March 2000, has brought together “tried and tested” experiences in dealing with social and institutional issues in watershed development. The purpose in putting together this collection of resource materials is to provide trainers, project/field managers, local government officials, researchers and policy makers with a handy, user-friendly resource book on social and equity issues in watershed management. Oikos and IIRR has succeeded in making a comprehensive and user-friendly resource book with a lot of instructive illustrations focused on an extensive number of topics related to participatory watershed management. Fortunately, attention is also given to establishing partnerships and linkages between governmental, non-governmental, technical, social and credit institutions. This is important for sustainability of watershed management as well as for scaling up. (WR)

Nature in war; biodiversity conservation during conflicts : international seminar by Blom E, [et al.], 2000. 174 p. USD 20. - Werkgroep Ecologie en Ontwikkeling, programme of the Netherlands Committee for IUCN, Plantage Middenlaan 2B, NL 1018 DD Amsterdam / mail@nciucn.nl. (Mededingen Nederlandse Commissie voor Internationale Natuurbescherming ISSN 0923-5981 no. 37).

This publication is the output of a workshop organised by a Dutch-based group of independent international nature conservationists called “nature in war”. Members of NGOs from regions that experienced conflict situations illustrated the enormous damage to natural resources and rural areas caused by war. But at the same time they stated that conservation measures are possible and very important for the local situation. Recovery after the conflict is greatly favoured by nature conserving measures during the conflict situation. Nature conservation can prevent the total destruction of the environment of local communities. This publication gives recommendations for all stakeholders in conflict situations, governments, NGOs, humanitarian organisations etc., on how to avoid destruction of biodiversity and other natural resources. (WR)


This paper presents the results of a study undertaken in Tigray, Ethiopia, to explore local people’s perceptions and understanding of their land resources, and the way that their views influence natural resource management. The findings of the study indicate that the cultural and social meanings attributed to specific areas play an important role in the physical condition of fields. The conclusion of the researchers is that policy makers therefore need to pay more attention to the relationships between people and land, and to the value that farmers attach to different fields and plots. (WR)


This extensive review on the use of neem (Azadirachta indica) as a multi-purpose tree contains a list of published and unpublished literature, a consultation during a global electronic workshop and information obtained through fieldwork in Ghana and India. Research shows that the main use of neem is for medicinal purposes, with only a few farmers using neem in crop protection. Constraints for
the use of neem in crop protection have been identified and possible solutions are suggested. The report gives an overview of the possible uses of neem, the constraints at the moment and possible interventions for increasing the benefits of the neem trees. The report comes with a neem database on 3.5 inch disk with bibliographic references relevant to the study. (WR)

The overstory book : cultivating connections with trees by Elevitch CR, Wilkinson KM (eds.)., 2001. 414 p. ISBN 0 9702544 1 5 USD 49.95. Permanent Agriculture Resources (PAR), P.O.Box 428, Holualoa, HI 96725 USA / par agroforestry.net, www.agroforestry.net. This hard copy of the first 75 editions of the electronic journal “The Overstory” is a rich source of information on agroforestry. For people working with agriculture, trees, forests or sustainable resource management the book can function as a manual, filled with useful information in easy-to-read, single-subject articles. The articles are arranged content-wise so that interesting chapters like: saving water, soil and fertility; growing trees for forestry; seeds, seedlings and tree basics; animal assistants etc. form the contents of the book. Subscribers of the journal already know the value of the articles, but this arrangement of the articles together with the “learning more” bibliography and the good index with an additional index on botanical names of trees gives the book added value. Every article ends with further reading suggestions and weblinks and even the articles within the book are linked by a “related chapters” list at the end of each chapter. (WR)

Farmer innovation in Africa - a source of inspiration for agricultural development edited by Reij C. and Waters-Bayer A., October 2001. ISBN 1 85383 820 9 UKE 16.95 -. Earthscan, 120 Pentonville Road, London N1 9BR, UK. E-mail: earthinfo@earthscan.co.uk www.earthscan.co.uk One of Africa’s major untapped resources is the creativity of its farmers. This message comes through very clearly in this volume of studies on how, in spite of adverse conditions and lack of appropriate external support, small-scale farmers - both men and women - are able to experiment and innovate in order to improve their livelihoods. Numerous lively examples show how a participatory approach to agricultural research and development - one that builds on local knowledge and innovation - can stimulate the creativity of all those involved, and not simply the farmers themselves. This rich source of case studies, written primarily by African extension workers, researchers and farmers, analyses how agricultural and development policy can be changed. Among the contents are: Farmer innovation and remarkable innovators; Building partnerships for innovation in land husbandry; Farmer innovation: process, evidence and analysis; Evaluation and extension of local innovations; Raising awareness and mainstreaming. The book will be invaluable for development workers, researchers and policy makers, as well as for students and teachers of agriculture, environment and sustainable development.

Municipal solid waste management, involving micro and small enterprises : guidelines for municipal managers by Haan HC, Coad A, Lardinois I, 1998, 154 p. ISBN 92 90493 65 8 : GBP 18.00. Publications Department, International Training Centre of the ILO, Viale Maestri del Lavoro 10, I-10127 Turin, Italy. SKAT, Intermediate Technology Publications, 103-105 Southampton Row, London WC1B 4HH, UK / itpubs@gn.apc.org. This handy manual about urban solid waste management is meant for municipal managers and others interested in municipal issues. The book is divided into several sections that answer specific questions like “why involve the private sector” or “what policy decisions must be made before starting”.

It covers the “why” and “how” of involving new entrepreneurs and small community-based groups in the collection of garbage. The last part of the book, “the annexes” contains case studies from Latin America, South-east Asia and Africa, sample contracts and backup information. (WR)

Weed management in the humid and sub-humid tropics by Rijn PJ (van), 2000. 234 p. ISBN 90 6832 123 4 USD 32.50. Royal Tropical Institute (KIT), KIT Press, P.O.Box 95001, 1090 HA Amsterdam, the Netherlands / publishers@kit.nl / www.kit.nl. This thorough book on weed management is written by three scientific experts in weed management in tropical crop systems. The abundant growth of weeds can cause high losses in tropical crop yields if no control method are practised. The first part of the book deals with the nature of weeds, ecology, control, cropping systems and main weed species. The second part deals with weed control methods in general and in various crops. A variety of control methods, also mechanical and biological/ ecological, are described per crop. The last chapters are on weed control in pastures and on aquatic weed management. (WR)

Partir pour rester : survie et mutation des sociétés paysannes andines (Bolivie) by Cortes G, 2000. 414 p. ISBN 2 7099 1459 X FF 150.- Institute de Recherche pour le Development (IRD) éditions, 213, rue la Fayette, 75480 Paris cedex 10, France. Genevieve Cortes is a French researcher in rural development and migration dynamics. She has written this study about migration and the complexities it brings about in Andean smallholder economies. The book in French has summaries in English and Spanish. The work sheds light on the economic and sociocultural changes of rural areas in the Andes (Bolivia) analysed in relation to migration. The way in which spatial mobility of smallholder farmers moulds new relationships with space and with home territories is explored, and also the role of migration in agricultural production, modes of consumption and food systems. The study combines both quantitative methods like socio-economic monitoring of households, and qualitative approaches like observations and participation. (WR)

Participation of the poor in development initiatives : taking their rightful place by Long C. 2001. 192 p. ISBN 1 85383 761 X : GBP 15.95. Institute for Development Research (IDR). Earthscan Publications, 120 Pentonville Road, London N1 9JL / earthinfo@earthscan.co.uk / www.earthscan.co.uk. This book is an analysis of the progress made by donors and governmental agencies during the past decade to embrace participatory development approaches and incorporate it in their policies and procedures. NGOs in different parts of the world use participatory development as common language for decades, but large donors like the World Bank and USAID have changed their policies in favour of primary stakeholder participation only in the last decade. The book describes this process of incorporation. (WR)
Community Integrated Pest Management [websites]

The words of Mochtar Lubis “never in my wildest dreams did I think that a programme about ‘bugs’ would bring the dawn of democracy and liberation to Indonesian villages” explain the importance of this very good and informative website on Community IPM, a starter activity for development of sustainable livelihoods. The website provides information on concepts, cases, country programmes, events and makes many links with other organisations on IPM. There is also a Newsletter and many downloadable documents: case studies, training materials and scientific papers, among them the longer version of the article by Russ Dilts on p.18.

Future Generations [websites]

Future Generations has a remarkable track record as an international non-governmental organisation sharing knowledge and experience of how communities can change sustainably and equitably. Future Generations currently works on both sides of the Himalayan range - in the Tibet Autonomous Region of China and the states of Arunachal Pradesh and Utteranachal in India. The Future Generations model of community-based conservation and sustainable development can and should be applied around the globe.

The approach permits development success from one community to expand (or “scale up”) quickly to other communities. The process of “going to scale” facilitates a rapid yet site-specific expansion of community progress that remains sensitive to local ecology, culture, and economics.

The Future Generations website provides useful information on sustainable development, including a resource page with multimedia material and a variety of reports, among others The Future Generations model for community change and several pre-published chapters from the new book by Taylor-Lde DC and Taylor CE. Just and lasting change: when communities own their futures to be published by John Hopkins University Press (see Taylor p.14).

Scaling up participatory approaches [websites]

This page on scaling up participatory approaches is found on the website of GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit).

Participatory approaches in community development are designed for use at local level. Participation implies that the number of people involved is small. However, scaling up is necessary to use these approaches in overall development programmes. Two questions are addressed on this page: how can participatory approaches (PA) be institutionalised in research and extension organisations and how can PA become general practice, to benefit large numbers of people.

Smart Library on Scaling Up [websites]

This website contains a lot of information on scaling up of organisations. Text from a number of documents that handle issues of scaling up are available with a bibliography of the documents used. Scaling up processes in NGOs are discussed in detail. Information on why and how NGOs scale up and what problems can be expected is also available on the website. An easy and fast information source, but does not tackle the issues in depth.

Indigenous conservation tillage system in East Africa with an example of their evaluation from South West Tanzania

This paper, available on the pages of FAO, documents existing indigenous conservation tillage systems in water scarce conditions and in semi-arid zones, and analyses the usefulness and shortcomings of indigenous conservation tillage in a case study from South West Tanzania. It provides 20 pages with information on these farming systems in East Africa.

The World Bank, participation, community driven development [websites]

These two World Bank sites provide information on participation in development programmes. The first page contains case studies and reference literature on the subject; the case studies are ordered country wise. There are also links to other information sources. This site is a rich source of information on community driven development, participatory monitoring and other related topics.

Conservation Agriculture [websites]

The FAO Land and Water portal has a section on conservation agriculture (conservation / zero / no tillage). Among its contents is an overview paper on experiences with conservation tillage: ‘Frontiers in conservation tillage and advances in conservation practice’ by R. Derpsch. This portal also gives access to the African Conservation Tillage Network.
ILEIA visits Ethiopia

During the first half of September 2001, Anita Ingevall and Flemming Nielsen of the ILEIA team spent two weeks meeting several readers of the LEISA Magazine in Ethiopia, assisted by Johannes GebreMichael. Here is a short report on their visit.

The skies were dark grey and the rain poured down as we trudged along in search of some of the readers that had responded to the questionnaire we sent out with the LEISA Magazine 17.2. In this questionnaire we asked our readers in Ethiopia how they actually use the information they get through the LEISA Magazine. We wanted to know if we could establish a link between the information provided in the Magazine and what people actually do in their work; in other words, we were trying to ascertain how the Magazine impacted people.

We know from earlier evaluations of ILEIA that our readers appreciate the Magazine very much and find it useful. But does this mean concretely? Does the Magazine actually have an impact at field level? Does it influence people and change their perceptions, ideas and actions? Does it have an impact on policy level? We wanted to gain some insights into these questions, and find out who our readers are and what they do with the information.

We chose Ethiopia for this study as it is home to more than 2000 regular subscribers, one of the largest readerships we have. The country is still heavily dependent on agriculture and regularly struck by famine. For the past 25 years many different donors have been active in trying to improve the productivity of Ethiopian agriculture through different programmes and different approaches. In spite of these efforts the natural resources continue to degrade and a breakthrough in agricultural productivity has not been achieved.

Getting in touch with the persons we had selected, based on the questionnaires, proved more difficult than expected. Bad telephone lines, sickness, job transfers etc. were some of the odds to be dealt with in getting to people. But nothing could have prepared us for the truly positive responses we received once we actually got in touch!

We visited people in and around Addis Ababa, North of Debre Berhan and in Tigray, South of Debre Zeit and around Awassa, from different backgrounds and with different tasks in agriculture. Among them were farmers, policy makers in the government ministries in Addis Ababa, workers in NGOs or people involved in research, training and education. What struck us was their resourcefulness and dedication to really make a difference in agriculture. Interested, reflective and innovative they were managing to do a lot more than what their circumstances allowed.

We found examples of direct implementation of technologies described in the Magazine. Frequently, the Magazine was used as a source of training material at different levels and as a point of up-to-date references. Some of the articles had inspired people to write research proposals. Several people told us that their ideas on how agriculture should be done had changed completely after reading the Magazine for some time, and others how their approach to farmers and indigenous knowledge had changed fundamentally as a result of ideas presented in the Magazine. Most of the persons we met considered the Magazine as a resource that was directly relevant to their own conditions. It kept them informed about similar developments around the world, which made them feel part of a larger ‘movement’ and which confirmed that ‘they were on the right track’, as one reader put it.

We found that most readers share their copy of the Magazine with friends and colleagues and that the articles often served as a basis for discussions. We were convinced that the Magazine should remain free of charge for those who wish to receive it. This allows individuals to subscribe, thus increasing accessibility and preventing the Magazine from being locked up in an unused library or in the boss’s room. We learnt that clear instructions on subscriptions and renewals could reduce a lot of confusion.

What we also found was that most of our readers are men. Not a surprising finding as technical personnel in agriculture and forestry most often are men, although agriculture as such involves the whole family and in many situations puts the major load on the women. As we consistently try to increase the number of articles that features women in the LEISA Magazine, we would also like to see our number of female readers increase. So, please, inform your female colleagues about the Magazine and how to subscribe!

We would like to thank all the persons we met in Ethiopia for sharing their time and experiences with us. For us it has been an invaluable and very inspiring experience, which will keep us going and which will certainly have an impact on the Magazine.

This study was made possible through the generous contribution of the Swedish International Development Co-operation Agency. The findings will be made available in a report. ILEIA will also produce a small booklet to document the work of a number of Ethiopian readers met during this study.

Photo: Flemming Nielsen
Themes for the LEISA-India

Vol. 4,3, September 2002

Ecological soil management, key to sustainable agriculture

Many problems in agriculture are related to soil and soil fertility management, i.e. soil erosion, low efficiency of fertilisers, nutrient imbalances, soil borne diseases, pests and weeds, soil compaction, farmer induced drought, water pollution, etc. Successes in raising productivity and ecological sustainability in agriculture often come from improvements in soil management. More insights are being gained into ecological soil and soil fertility management in the tropics. What do we know of ecological soil management? How do (traditional) farmers look at soil management and what can we learn from approaches such as organic agriculture, agroecology, natural farming, integrated soil fertility management, zero tillage and integrated pest management? Can traditional and organic technologies be combined with chemical fertilisers? As organic soil management technologies can be very labour demanding, appropriate mechanisation can be important. What experiences have been gained in this regard? Ecological soil management is site and crop rotation specific. What experiences have been gained with fine-tuning ecological soil management for specific conditions and rotations? Your practical experiences are very welcome.

Deadline for contributions: 15th June 2003

Vol. 4,4, December 2002

Feminisation of agriculture needs appropriate responses

The feminisation of small and marginal agriculture is increasing rapidly in many parts of the world due to processes such as labour migration, part-time farming, urban life focused education and HIV/AIDS. This has an enormous impact on women, their households, rural communities and farming. Supporting women in their role as farmers require many changes and adaptations. These relate to property rights, access to productive resources as well as to adaptations, i.e. decision making, labour division, crop management, animal husbandry and production of tools. Also research, extension, information management, input supply, financing and marketing etc. have to become more women-focused and have to develop methodologies and procedures adapted to the specific conditions and needs of women. Often, women as the main managers of change have to cope with ecological degradation. What specific needs do women in such conditions have and what adaptations have been developed by women to cope with these processes? What are the experiences of participatory programmes that have been supporting women to cope with change? What are good examples of technologies and methodologies suited for use by and with women? We invite you to share your experiences on these and other relevant questions with other readers of the LEISA magazine.

Deadline for contributions: 15th June 2003

Vol. 5,1 March 2003

Farmer Field School - emerging issues and challenges

The Farmer Field School (FFS) approach was first developed in the late 1980s for training rice farmers in Integrated Pest Management (IPM). The success of this discovery-learning approach based on the principles of adult education has contributed to its popularity. The FFS approach is now being applied and adapted in many regions of the world - Asia, Africa and Latin America. It is not limited to rice, but used in a variety of other crops and livestock. Farmer Field Schools are seen as entry points towards community strengthening and empowerment. As the FFS approach gains more ground, new issues and challenges emerge, i.e. maintaining quality in implementation, reflection of the core principles etc. These issues and challenges will be the focus of the International Learning Workshop on “Farmer Field Schools - Emerging Issues and Challenges” to be held in Indonesia in October 2002. This issue of LEISA will include the findings of this workshop and highlight some of the interesting cases. We invite articles on experiences in applying/adapting FFS to various agro-ecological, socio-cultural and economic situations, monitoring and evaluation of FFS, upscaling FFS approaches etc. that would be interesting to field practitioners and add to the knowledge generated at this workshop.

Deadline for contributions: 15th June 2003

Vol. 5,2 June 2003

Water harvesting, water conservation and small scale irrigation

Water is a precious resource that is essential to the life and health of farmers, animals and crops - and it is becoming steadily scarcer. Many see a global water crisis looming on the horizon, and as competition increases for water from household, industries etc., the huge proportion of water used for agriculture, although essential for food production, is increasingly challenged. This issue of LEISA focuses on small-scale solutions for harvesting, conserving, storing and using water at the local level. What can be done to manage the local ecosystem to conserve water, for example land preparation and ground cover for moisture retention and increased infiltration? How can rainwater be harvested on a small scale? What is the best way to catch and store water? And how can it be efficiently applied to crops? We invite you to share your experiences and solutions with LEISA readers.

Deadline for contributions: 30th June 2003

You are invited to contribute to these issues with articles (about 800, 1600 or 2400 words + 2-3 illustrations or photographs), suggest possible authors, and send us information about interesting publications, training courses, meeting and websites.