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; ICRAF p.13) and a selection of the most interesting cases. Several additional cases are also included and reference is made to some cases published in earlier issues of the LEISA Magazine (ILEIA Newsletter).

Success stories

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

- Success stories from conventional high-external-input agriculture: 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.18). 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 (Vaneph and Benites, p.22).
- Success stories from semi-subsistence, low-external-input agriculture using entry point technologies such as cover crops (LEISA Magazine 13.3, p.12-13), water harvesting (Verweij p.43; CSE p.46; LEISA Magazine 16.1, p.11-15), natural vegetation strips (Catacutan et al. P.31) and traditional seed varieties (Von der Weid, p.23 ; Zhardhari LEISA Magazine 17.2 p.19). These technologies are spreading among thousands of farmers, often supported by NGOs. The innovation process is strongly driven by participatory farmer experimentation and farmer-to-farmer exchange evolving into social farmer movements for development of agroecological agriculture such as Campesino a Campesino (Central America; p.27), Landcare (Philippines; p.31) and Nayakrishi Andolon (Banglandesh; LEISA Magazine 17.2, p.16-18).
- Success stories from organic agriculture, sometimes in combination with fair trade (ILEIA Newsletter 14.4). This trend is a result of increasing ecological awareness and market demand for 'healthy' organic products, especially from consumers in rich countries.

From natural vegetation strips to agroforestry, Landcare in Mindanao, Philippines. Photo: ICRAF

An overview of the main success stories and their impact has been published by Pretty and Hine (2001): *Reducing food poverty with sustainable agriculture: a summary of new evidence* (see also LEISA Magazine 17.1, p.21).

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 (Mahajan p.48). 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 (Sherwood and

Larrea, p.30). Zero tillage farmers in Brazil, for example, have realised that herbicide based no-tillage is still far from sustainable and are now developing a broader approach: conservation agriculture (Vaneph and Benites, p.22). In all these cases, farmers have learned to use local natural resources and ecological processes in more efficient ways, to reduce the use of costly external inputs and to intensify agriculture ecologically. Thus, monoculture systems gradually evolve into integrated systems. In general, ecological intensification also leads to higher ecological sustainability and resilience (Holt-Gimenez p.27). In most cases (except in organic agriculture), farmers do not exclude agrochemicals completely but use them cautiously in a way that is appropriate for their specific economic conditions (Ruben p.52). Reduction of the use of external inputs and development of integrated agriculture, however, may only happen after farmers have experienced the negative impacts of monocropping (Verweij p.43). The drive towards agroecological agriculture is strongest in subsistence conditions where agrochemicals are too expensive to use, credit is not available and farming has to satisfy a wide array of subsistence needs (Von der Weid p.23). Nevertheless, this drive also exists in commercial agriculture where farmers and researchers try to develop integrated pest, disease, weed, soil and water management (Dilts p.18; Vaneph and Benites p.22).

However, farmers' interests are not limited to agriculture. Increasingly, small farmers are investing labour not only in agriculture, but also in non-farm and off-farm income generating activities (Ruben p.52). Development of agroecological agriculture and local healthcare, off-farm income generation and strengthening of local value and knowledge based decision making (see e.g. Mahajan p.48) can be mutually supportive and serve as crucial elements for successful development of sustainable livelihoods.

Participatory development

The participants of the four workshops stressed the importance of participatory development and 'social capital' for successful expansion of agricultural research and development programmes (Gonsalves p.6). Participatory analysis and planning, farmer-to-farmer exchange and learning, farmer experimentation, participatory monitoring and evaluation, and integration of indigenous and scientific knowledge are all important elements of such participatory processes. The Farmer Field School approach, which combines experimentation for learning and innovation, farmer promoters and farmer-to-farmer exchange, is the motor of success in the Community IPM (Dilts p.18) and Landcare (Catacutan et al p.31) movements and is influencing other participatory research and development programmes as well. (see LEISA Magazine 16.2).

Creation of regional research and development platforms for information sharing, planning and coordination is also mentioned as an important tool for 'going to scale', as successfully used in the development of ZT (Brazil, p.23) and the improvement of groundnut production in India (LEISA Magazine 15.1&2, p.72). 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 (Catacutan et al p.31; Kwesiga et al p.35).

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. This calls for massive efforts in human resource development. 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.39).

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.52). Supporting farmers' movements for agroecological and social development such as those in Indonesia (IPM), Brazil (ZT), Central America (Campesino a Campesino) or the Philippines (Landcare) could indeed be the most effective way for 'going to scale'.

However, many forces and conditions work against the spreading of agroecological development as shown by Holt (p.27) and Von der Weid (p.23). 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.46; Vaneph and Benites p.22).

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), ZT (Brasil), Landcare (Philippines) and water harvesting (India) movements. But Taylor (p.14) and Holt (p.27) point out, validly, the risk of losing the sparks of innovation 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 (Holt-Gimenez p.27).

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