Joint Learning

in Applied Development Research

LEI
WAGENINGEN UR

Preface - Get to know LEI from a different angle

As a client or as a colleague you probably know us for our expertise in:

- Research on topical issues related to food, farming and green areas;
- Advice to public institutions and private business;
- Documentation of farm accounts and statistics.

It is a much less well-known fact that we also have a lot of know-how in the field of participatory research. We employ a unique combination of joint learning and applied research in rural development, natural resource management and corporate social responsibility. Each participatory research initiative is adapted to the specific local or regional context in which we operate - in the Netherlands, elsewhere in Europe, or in the tropics.

From technology transfer to joint learning

Through our work in developing countries we have learned that rural development projects do not bring any lasting change if they are merely based on developing and transferring technologies. Farmers simply do not adopt technologies that 'experts' think are good for them if there is no clear link with their problems and priorities. Therefore, a different approach was needed (Box 1).

LEI had gained similar experience in its work with farmers and entrepreneurs in the Netherlands. Policy recommendations regarding regional development or sector reconstruction plans obtained through conventional research often met considerable resistance when presented to the target groups.

Our work in developing countries has taught us that farmers and other natural resource users know a lot about a wide range of subjects that affect their daily lives. Participatory approaches enable these people:

- To analyse the conditions under which they live and work;
- To plan which actions to take; and
- To monitor and evaluate the results.

Box 1 - Learning at LEI

Soil degradation has become a serious threat to food security, particularly in the semi-arid lands of East Africa. When agronomic research revealed that intensive crop farming combined with soil erosion could result in an annual loss of up to 30 kg of nitrogen per hectare, it was obvious that urgent action was needed. However, the results of technical projects that focused on dam and terrace building, soil and water conservation and large-scale fertilisation were below par. Most technical solutions require high capital investments, a properly functioning infrastructure and an effective policy and market environment. These are all constraining factors in most of sub-Saharan Africa. 'Even a compost-making technology that we assumed to be farmer-friendly was hardly applied in practice', says André de Jager, cluster manager for development research at Wageningen UR and project leader at LEI for research in East Africa. 'We found out that the farmers did not have enough organic material to make compost and that the technique was too time-consuming.' De Jager and his Kenyan colleagues concluded that the reality in which farmers live and work - available infrastructure, tenure arrangements, prices, government policies, labour and input constraints - has to be taken into account. Since 1996, they have worked with farmer-centred and participatory methods to find solutions that are better suited to the reality facing farmers.

If farmers and other stakeholders are part of the research process, they help generate results that are better suited to their realities. Researchers facilitate knowledge sharing and stimulate discussions and analysis. Hence their role has shifted from 'bringing solutions' to 'joint learning'.

A diversified practice

There is no single way of doing participatory research. The denominator 'Participatory Rural Appraisal' (PRA) currently covers more than fifty approaches which are partly overlapping and based on similar tools (see Box 2).

LEI researchers apply these tools and approaches in a varied practice related to agriculture, horticulture, forestry and fisheries. LEI's working domains include:

- International trade and poverty;
- Markets and market chains;
- Natural resource management, stakeholder participation and development.

The core areas in which LEI works are:

- The Netherlands;
- Sub-Saharan Africa (Tanzania, Kenya, Burkina Faso, Mali, Ghana, South Africa);
- Asia (China, Thailand, Vietnam, Cambodia, Indonesia, Malaysia, Philippines).

This brochure presents examples of participatory research from this diversified practice. The cases exemplify the kind of issues that are being addressed, how participatory research works in practice and what results can be expected.

Box 2 - A broad spectrum of methods

LEI researchers work using the learning cycle of Kolb and Fry as a basis. This is a continuous spiral of *concrete experience, observation & reflection, conceptualising* and *testing in new situations* (experimentation).

The cycle entails various methods, the main ones being:
- Rapid Diagnostic Appraisal;
- Farmer Field Schools:
  - Participatory Technology Development
  - Participatory Marketing Strategy development;
- Participatory Learning and Action;
- Integrated Strategic Planning;
- Participatory Monitoring and Evaluation.

All these methods make use of similar tools for stakeholder identification, joint problem diagnosis, the search for solutions and monitoring. These tools include:
- Calendar making to analyse how activities, rainfall, prices or occurrence of pests and diseases fluctuate during the year;
- Resource mapping to visualise the spatial distribution of resources, land use and property rights;
- Constructing Venn diagrams to make an institutional analysis and visualise the importance of various institutions to the community;
- Making a problem tree which visualises a core problem (the trunk), its causes (the roots) and effects (the branches). By turning the core problem into positive statements the problem tree can be transformed into a solution tree;
- Ranking techniques, such as preference ranking and scoring, pair-wise ranking, ranking by voting or wealth ranking;
- Group dynamic methods such as role-playing exercises, focus group discussions and brainstorm workshops.

Such participatory tools are usually complemented with other research methods, such as a review of secondary data, structured questionnaires, semi-structured interviews, direct observation and participant observation.

Source: Kolb, D.A. and R. Fry. 'Toward an applied theory of experiental learning'. In: C. Cooper (ed.) *Theories of Group Process*, London: John Wiley, 1975.

Rapid Diagnostic Appraisal in China

Senior researcher Ben Kamphuis opted for a Rapid Diagnostic Appraisal (RDA) (Box 3) when he was invited to deal with declining water resources in Beijing. He has learned that sustainable alternatives can only be found if farmers and other parties involved are aware of the impact that various production systems have on water quality and quantity. 'Effective solutions also require a dialogue between the stake-holders', says Kamphuis. The project team in Shunyi - a district close to Beijing - used an RDA to find out what measures the farming sector could take to reduce pressure on water resources and whether alternative, less water-polluting farming systems were available.

After a week of intensive work, the team had made a stakeholder analysis and resource and farming diagnosis. Meetings were held with farmers and officials of various (semi-) government agencies. Group and individual interviews, combined with farm visits and the consultation of maps, policy reports and articles, generated the information needed. Using tools such as making a problem tree, constructing Venn Diagrams and joint mapping, the team was able to gain additional insight into the stakeholders' perceptions of the farming-water link. A stakeholder feedback meeting was held to report and discuss the RDA results.

Box 3 - Rapid Diagnostic Appraisal

Rapid Diagnostic Appraisal (RDA) consists of:
- Collecting relevant information on a pilot area via a review of secondary literature, policy documents and maps;
- Identifying and becoming acquainted with relevant stakeholders;
- Starting consultations with relevant stakeholders.

LEI has carried out RDAs in China, Vietnam, Indonesia, Malaysia, Cambodia, Kenya, Uganda, Ethiopia, Ghana and Burkina Faso.

The joint learning process resulted in an overview of farming and land-use systems in the area, of water use and resources, environmental problems and the farms that could be part of the next project phase. 'But the most important result', says Kamphuis, 'is probably the team spirit and shared awareness that the problem needs a solution.'

Farmer Field Schools for learning and finding solutions

LEI uses the Farmer Field School (FFS) approach (see Box 4) as a learning platform to find new solutions and technologies to complex problems that farmers face. For farmers the FFS offers an opportunity to learn and reflect. For LEI researchers it offers a way to interact closely with farmers so that research results optimally fit the realities farmers face. The FFS brings together scientists with several disciplinary backgrounds. For example, economists work together with soil scientists and plant breeders. Its capacity to work in multi-disciplinary teams is one of LEI's strengths.

LEI develops various tools that fit the FFS approach and goals. One example is the FFS for integrated (soil) nutrient management in Kenya and Uganda, where a participatory technology development approach was used. Another example is the FFS for the enhancement of plant genetic resources in Southeast Asia, to which a participatory marketing strategy development component was added.

Box 4 - Farmer field schools

Farm field schools were developed by the FAO in Asia in the early 1990s as a response to top-down and uniform approaches during the Green Revolution. They are based on the idea that farmers learn optimally from field observation and experimentation. As such, FFS developed into a learning and research platform for both farmers and researchers. All Farmer Field Schools in which the LEI is involved use the 'Learning Cycle' as the basic learning concept (Box 2). Following this method, the participants first go to the field to observe and collect data (experience). Then they return to the meeting place to analyse and interpret the data (reflection). Farmers use the data to prepare a presentation based on their observations and propose actions and further observations (conceptualise). The proposals for action are then implemented over the following week (experimentation) and the spiral of experience, reflection, conceptualisation and experimentation begins again. The LEI has used the FFS approach for integrated nutrient management and for marketing strategy development.

Box 5 - Participatory Technology Development

Participatory Technology Development (PTD) is a joint learning process in which farmers, extension workers and researchers work together to:

- Identify problems;
- Select test technologies;
- List the criteria and indicators used by farmers to evaluate the test technologies;
- Implement on-farm trials;
- Monitor and evaluate the results of the trials.

Ample experience with this method was gained in Kenya and Uganda, where new pathways were explored to improve soil fertility management.

Participatory technology development for improved soil fertility management in Farmer Field Schools in Kenya and Uganda

Farmers in large parts of Kenya and Uganda face declining yields due to soil degradation and low and unpredictable rainfall. LEI participated in a project that aimed to develop better soil fertility management practices. This was done in an FFS, using a Participatory Technology Development approach (Box 5).
A group of traditional farmers and a group using technologies such as composting and the application of liquid manure participated in the problem diagnosis, the selection of technical options for experimentation, the treatment design, data collection procedures and the definition of criteria for evaluating on-farm trials. During these stages, the researchers used sub-group discussion, joint soil and nutrient flow mapping and brainstorm sessions.
Both farmer groups suggested and tested various options for improved soil fertility management. A balanced combination of external inputs (fertilisers) combined with optimal use of locally available nutrients appeared to be the most appropriate strategy. Attention was also focused on measures to reduce gaseous losses when using manure or compost.
While the researchers provided the farmers with know-how as regards compost making and methodologies to test and monitor their implementation, the farmers taught the researchers how to adapt the technologies to local farming systems. The participatory approach resulted in lasting changes at farm level. After participating in the research, the farmers started managing their crop residues more efficiently, using more diverse organic inputs, producing better compost, improving their soil conservation practices and experimenting with agroforestry, planting densities and different doses of compost.

The intensive interaction between farmers and extension agents also continued after the project had ended. The participatory approach thus helped narrow the gap that often exists between farmers and extension agents.
The results were also discussed with policymakers. Thanks to the participatory approach the policymakers were able to clarify their vision of the desired situation in 15 years.

Farmer field schools in Southeast Asia to improve indigenous crop genetic diversity and marketing

Worldwide, the diversity in crops has dramatically decreased. This genetic erosion is increasing farmers' dependency on external inputs such as fertilisers and pesticides. Being out-competed by globally traded crops, the share of traditional vegetables in farmer's daily food intake is declining and this poses a threat to community health.

LEI takes part in on-farm (in-situ) conservation efforts to preserve traditional varieties though strengthening the capability of farming communities to manage their genetic resources as part of local agro-diversity. Since marketing of local crops is of vital importance to small farmers' livelihoods, actions also aim to remove marketing constraints.

In Cambodia, activities focused on four villages. Farmers in these villages were interested in improving the way in which their vegetables are marketed. According to the steps outlined in Box 6, they analysed the production of these vegetables, the level of specialisation within the group and the marketing activities. LEI's marketing experts and a local partner organisation performed the analysis of the marketing chain and the external environment. This analysis covered demand, customer preferences, prices and competitors. In one of the FFS, LEI researcher Siebe van Wijk performed the analysis of strengths, weaknesses, opportunities and threats in an innovative way by forming a living matrix of men and women. It made the participants even more enthusiastic and enabled them to transform their strengths into opportunities. With the help of this living SWOT analysis, the farmers identified marketing strategies that they found exciting, challenging, promising and feasible. They proposed:

- that a marketing group be formed and cooperation started with two well-informed collectors in the village;
- that off-season production in April/May and September/October should be improved to fetch higher prices;
- that more pumpkin and wax gourd varieties be planted; and
- that more pumpkin products be processed.

These strategies were translated into action plans that are being implemented with the help of LEI.

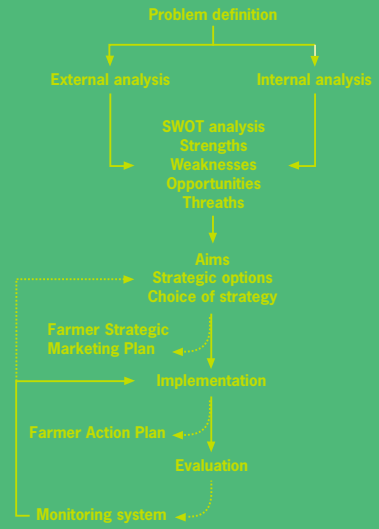
Box 6 - Participatory Marketing

LEI has developed a participatory marketing strategy development approach that is compatible with farmers' needs, resources and abilities. It is based on a unique combination of learning approaches, marketing theory, practical experience and an extensive business network. The approach consists of the following steps:

- An *external analysis* of the socioeconomic environment in which local farmers operate: opportunities and threats related to customers, current suppliers, future socio-politic developments, annual market price fluctuations and the causes of these fluctuations;
- An *internal analysis* of the farmers' relative strengths and weaknesses: the farmers' current production practices, marketing and sales, and their capacity to adapt and change current practices;
- A *SWOT analysis*, in which the strengths and weaknesses are compared with the opportunities and threats with a view to identifying the most important strategic issues;
- A *definition of strategic options* with their aims, advantages and disadvantages and selection of one of them as a basis for making a strategic marketing plan;
- A translation of the strategic plan into an *action plan*;
- The collection of data and information in order to *monitor and evaluate* the marketing plan.

Farmers can carry out a substantial part of the internal analysis and SWOT themselves, but the external analysis requires more input from outside researchers. The researchers summarise and categorise the information in such a way that the farmers can easily undertake their own SWOT analysis and develop appropriate marketing strategies.

The LEI marketing approach has been successfully used in Cambodia, Indonesia and Malaysia and is going to be implemented in The Philippines and in Thailand.



Participatory Learning and Action to identify needs and opportunities

When the target group of participatory research is not homogenous, like in Farmer Field Schools, but is instead a community that usually consists of groups with diverging interests, LEI employs a Participatory Learning and Action (PLA) approach (Box 7). This approach can be used:

- To make clear how community members perceive local problems and needs;
- To identify preferred actions and interventions to address these problems; and
- To enhance people's participation in natural resource management and regional planning.

Combined with natural interviewing techniques, PLA can facilitate collective analysis and learning. The approach is in particular useful for linking local interests with global concerns such as biodiversity conservation. It empowers local communities to improve their problem-solving capacity and build knowledge, skills and organisational capacity.

LEI applied PLA in participatory planning, monitoring and evaluation for rural development both in the South and in the North.

Village participatory development planning for sustainable peat swamp forest management in Indonesia

The 43,000 ha Maludam National Park in Sarawak (Malaysia) and the 156,000 ha Berbak National Park on the eastern coast of Sumatra are peat swamp forests that received a protected status to preserve their rich biodiversity and important ecological functions. Logging, poaching and unrestricted hunting, fishing and gathering of forest products are now forbidden. 'But it is impossible to fence the whole area and leave the population without alternative options', says Jolanda van den Berg, researcher at LEI. Her task is to analyse the socioeconomic conditions around both parks and to identify alternative income opportunities that are compatible with the parks' protected status.

During the diagnostic phase, a multidisciplinary team carried out a rapid rural appraisal using PRA tools. In Sumatra, this generated information about the social organisation, economic infrastructure, institutional linkages, livelihood strategies and rights to land and other resources in two pilot villages. Participatory data collection and analysis laid the basis for a shared awareness of the need to conserve peat swamp forests and implement sustainable farming practices.

After the diagnostic phase, Participatory Learning and Action (PLA) was employed (Box 7). In Village Participatory Planning Workshops, local community members and researchers jointly investigated local living conditions, key constraints and opportunities for community development and identified concrete options for improved livelihoods. From the workshops in two village communities in Sumatra, livestock development and development of tree farming came to the fore as priority development options. A local NGO is supporting the introduction of priority income-generating activities through provision of working capital, training on tree growing, seedling preparation and nursery development and management. Hands-on training by experts in water level management, chicken breeding and study tours should now enhance the implementation of these activities. Progress, costs, benefits, problems and outcomes are self-monitored though Village Participatory Monitoring Workshops.
Village leaders are enthusiastic about the results of the workshops. 'This enables us to analyse our problems and take action', was a comment Van den Berg often heard.

Box 7 - Participatory Learning and Action

Participatory Learning and Action (PLA) is an approach for joint learning and planning with communities. It entails a set of participatory tools and visual methods such as mapping, making time lines, transect walks, constructing problem trees, ranking activities and making Venn diagrams. PLA goes beyond mere consultation and promotes the active participation of communities in the issues and interventions that shape their lives. It enables local people to share their perceptions and identify, prioritise and appraise issues from their knowledge of local conditions. By combining the sharing of insights with analysis, PLA provides a catalyst for the community to act on what is uncovered.

LEI approach to PLA is build on three cornerstones:

1. ***Community empowerment*** **through group formation and community based action and planning;**
2. ***Improved livelihoods*** **at community level through development of alternative income opportunities;**
3. ***Local capacity building*** **through implementation of participatory appraisals and the organization of trainings and study tours.**

Source: Thomas, S. 'What is Participatory Learning and Action (PLA): An Introduction'. Wolverhampton: Centre for International Development and Training, 2002.

Integrated strategic planning at farm and region level in the Netherlands - Towards corporate social responsibility

Integrated Strategic Planning (ISP) (Box 8 and Box 9) has been developed to help farmers adapt to a rapidly changing business environment. Public demands for Corporate Social Responsibility imply that today's farmers are held responsible for the company's impact on the environment, animal welfare, food safety and the quality of the rural landscape. Government policies aim to reduce manure surpluses and to reconcile farming with nature and recreation. ISP has also been used in regional planning. For instance in the resettlement and restructuring of pig farms that is part of governmental plans to deal with the unpleasant odour, pig-manure surpluses and ammoniac pollution. Such plans inevitably meet a lot of resistance if stakeholders are not involved at an early stage. Wim de Hoop of LEI's Animal Systems Division and his team therefore designed attractive process and computer tools that enable the users to develop a business plan that makes their aspirations for the future transparent. Farmers can now develop a business strategy that optimises their needs and desires within the frames of the reconstruction policy. 'Creativity' and 'win-win situations' are De Hoop's keywords: 'There is no one single solution. By simulating what happens to a set of new policies and regulations when one's own objectives and wishes are brought in, a strategy can be designed that is acceptable to all.' Both government and farmers are enthusiastic about the procedure. Engaging in simulation games boosts the farmers' self-confidence and enlarges their competence as regards actively taking part in the transition process. As a result, they no longer feel victims of top-down decisions. ISP also teaches farmers to look beyond the limits of their farm and to interact with the community to do what is needed to develop the business in a socially responsible manner. 'By combining knowledge of the pig farming industry and transition policies with process support LEI is able to strengthen the interaction between the parties involved', says Wim de Hoop.

Box 8 - Interactive Strategic Planning

Interactive Strategic Planning (ISP) helps entrepreneurs to plan their business in a dynamic environment actively and strategically. It helps them to make choices and find the right balance between the sometimes contradictory interests of farmers, policymakers, other entrepreneurs and consumers. It does so by combining various tools such as a computer game simulation for dairy and arable farmers, a financial economic analysis and a Strategic Management Tool (SMT). The latter is an instrument used to structure the strategic planning process. ISP also includes tools and concepts to support networking and intervention strategies.

Box 9 - The ISP steps

ISP consists of the following steps:

- *Intake*, during which the advisor helps clarify the entrepreneurs' expectations and discusses the support cycle and what should be done and by whom;
- *Strategy development*, during which the competences of the entrepreneur, the external environment, internal strengths and weaknesses and the current business situation are analysed with help of the Strategic Management Tool (SMT). This stage generates a set of alternative strategies for the future;
- *Feasibility assessment* implies that the farmer and advisor identify key factors that need attention in the future and estimate how realistic the various alternatives are. This stage, too, is supported by the SMT;
- *Implementation* of an action plan;
- *Evaluation* of the success of the implementation, its integration into daily practice, the bottlenecks and obstacles encountered and the required changes or adaptations.

ISP is not only used at farm level, but also for the entire production chain and at regional level.

Joint learning:
An easy thing to do?

More efficient surveys, solutions that work and quick results in a short time: is participatory research that easy? LEI researchers Gerdien Meijerink and Jolanda van den Berg emphasise that participatory research should not be done rashly and should meet several conditions:

- A thorough preparation;
- A plan for dealing with social differences between men and women or youngsters and the elderly (Box 10);
- Collaboration with local research institutions, extension agencies and NGOs that are familiar with the farmer's language and culture;
- Training of local project team members and fieldworkers in participatory approaches and group dynamics and providing them with the information from the baseline studies;
- Work with multi-disciplinary teams;
- Making use of additional methods like baseline studies, surveys and an analysis of statistics, maps and available literature;
- Feedback meetings and result reporting to farmers, policymakers and other stakeholders;
- Give attention to institution building, networking between actors and communication of the results to policymakers;
- Linking up with farmer groups and multi-stakeholder forums to enable joint problem analysis and solution seeking and to get the results to a larger proportion of the target groups.

For effective interaction between research, policy and institutional development, LEI researchers also base their work on the following points of departure:

- Bring together expert knowledge and experiential knowledge of citizens, farmers and other entrepreneurs, policymakers, civil servants and NGOs so that policies and technologies are based on a shared problem analysis.
- Design plans for rural development or innovation on the basis of the knowledge, interests and needs of the target groups.
- Involve stakeholders in policymaking and technology development on an individual basis. Differences of interest and power imbalances in established organisations may not automatically lead to a consensus that everyone considers as 'fair'.

Box 10 - Dealing with gender and age differences

What should one do if a village leader dominates the discussion? How can one make sure that shy women or illiterate farmers have a say in the discussion? Meijerink knows the pitfalls. 'Once we had a village meeting in which the chief constantly intervened. He wanted to prove that he knew what was best for his village. At a certain moment, one of us took him to one side and told him that his opinions were so interesting that it would be better to hold a private conservation without being disturbed by the others. In the meantime, the rest of group was able to continue the discussion. From that moment on the older women also started to talk about how they dealt with diseases and plagues in the past.'

Conclusion

LEI is known for farming research, documenting farm accounts and statistics and building models but it also has a worldwide experience in participatory research.
This brochure took you on a journey to situations all over the world where LEI researchers are using participatory approaches to help identify stakeholders, analyse problems and find solutions. It became clear that farmer-centred and demand-driven approaches generate solutions to very diverse problems. These issues range from soil, water and natural resource management, technology development and marketing in the South, to sector reconstruction, regional policies and corporate social responsibility in the North.

Learn more about our work and allow us to become your partner.

Joint Learning in Applied Development Research is a publication of LEI Agricultural Economics Research Institute, The Hague, The Netherlands.

LEI
P.O. Box 29703
2503 LS Den Haag
The Netherlands

Phone: +31 (0)70 3358330
Fax: +31 (0)70 361564
Internet: www.lei.wur.nl

Further information:

Jolanda van den Berg (social scientific research)
Phone: +31 (0)70 3358165
E-mail: jolanda.vandenberg@wur.nl

Gerdien Meijerink (agricultural economist)
Phone: +31 (0)70 3358243
E-mail: gerdien.meijerink@wur.nl

Text:	Mirjam A.F. Ros-Tonen, with contributions from LEI staff
Editors:	Jolanda van den Berg and Gerdien Meijerink, LEI
Language editing:	Howard Turner
Photography:	APA Foto, J. van den Berg, D. Boselie, J-M. Dipama, D.J.F. Eaton, G.J.M. Gevers, A. de Jager, B.M. Kamphuis, Rutger Geerling Photography and M.E. de Vette
Photo editor:	George Kroon
Layout and cover design:	Marjolein de Vette/Graphic Design, Wageningen
Printing:	DeltaHage BV, Den Haag