

Magazine on Low External Input and Sustainable Agriculture



How farmers organise

C O N T E N T S

LEISA Magazine on Low External Input and Sustainable Agriculture March 2007 Volume 23 No. 1

LEISA Magazine is published quarterly by ILEIA

Address: P.O. Box 2067, 3800 CB Amersfoort, the Netherlands Visitors address: Zuidsingel 16, 3811 HA Amersfoort Tel: +-31 (0)33 467 38 70, Fax: +31 (0)33 463 24 10

Editorial team

E-mail: ileia@ileia.nl

This issue has been compiled by: Karen Hampson, Jorge Chavez-Tafur, Rik Thijssen and Wilma Roem.

Regional editions

LEISA Revista de Agroecología

The Latin American edition in Spanish can be ordered from Asociación ETC Andes, Apartado Postal 18-0745, Lima 18, Peru. Contact: Teresa Gianella-Estrems. E-mail: base-leisa@etcandes.com.pe

LEISA India

The Indian edition in English can be ordered from AME Foundation, 204, 100 feet ring Road, 3rd Phase, Banashankari 2nd Block, 3rd stage, Bangalore - 560 085, India. Contact: K.V.S. Prasad.

E-mail: amebang@giasbg01.vsnl.net.in SALAM Majalah Pertanian Berkelanjutan

The Indonesian edition in Bahasa Indonesia can be ordered from VECO Indonesia, JI Letda Kajeng 22, Denpasar 80234, Bali, Indonesia. Contact: Yuniati. E-mail: leisa@indo.net.id

The West African edition in French can be ordered from IED Afrique, P.O.Box 5579, Dakar, Senegal. Contact: Awa Faly Ba. E-mail: agridape@sentoo.sn

Agriculturas, Experiências em Agroecologia

The Brazilian edition in Portuguese can be ordered from AS-PTA, Rua Candelária, No. 9, 6° andar Centro, Rio de Janeiro, RJ Brazil 20091-020. Contact: Paulo Petersen. E-mail: paulo@aspta.org.br

Administration

Lila Felipie, Marlies Marbus and Natasha Leetion.

Subscriptions

Subscription rate for one year (4 issues): Northern institutions and international organisations: US\$ 45.00 (Euro 45), others US\$ 25.00 (Euro 25). Local organisations and individuals in the South can receive the magazine free of charge on request. To subscribe, write to ILEIA or send an e-mail to: subscriptions@ileia.nl Back issues are available on the ILEIA website or can be requested from ILEIA.

ILEIA website

http://www.leisa.info

Design & layout

Jan Hiensch, Leusden.

Printing

Koninklijke BDU Grafisch Bedrijf B.V., Barneveld.

The ILEIA programme is funded by Sida and DGIS.

Cover photo

Participants of a documentation workshop visit a local farmers' organisation in Mhezi village, Same, Tanzania. Photo: Rik Thijssen

The editors have taken every care to ensure that the contents of this magazine are as accurate as possible. The authors have ultimate responsibility, however, for the content of individual articles.

ISSN: 1569-8424



10 The Lagos State Fish Farmers' Association

Y.O. Basorun and J.O. Olakulehin

With more and more fish being brought into the state of Lagos to satisfy consumer demand, the Lagos State Agricultural Development Authority realised that fish farming could offer the possibility of increasing fish production, as well as creating employment opportunities and providing an additional source of income for urban dwellers. Fish farming was successfully promoted, but after some time fish farmers realised that they were at a disadvantage when working independently: they had limited access to extension services and prices were set by middlemen. In response, the Lagos State Fish Farmers' Association was started up in 2004 with less than 10 members and has since grown in numbers and influence, benefiting small scale farmers as well as other stakeholders in the local fish farm industry.

15 Learning together for organic farming

Hans Peter Reinders

In the 1980s, Dutch farmers started cultivating new land in an area that formerly had been at the bottom of the sea. Although there was a growing interest from consumers in organically grown products, organic agricultural practices were still hardly developed in the Netherlands in those days. A group of farmers started a club with the aim to develop and share knowledge on organic production systems. Over the years this initiative developed into a formal organisation for organic farmers with more than 70 members. Once enough knowledge had been generated by this group, their mission has shifted towards strategic representation in influential agricultural organisations and lobbying activities.



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 basis 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 an environment conducive for its further development. LEISA is a concept, an approach and a political message.

ILEIA is the Centre for Information on Low External Input and Sustainable Agriculture. ILEIA seeks to promote the adoption of LEISA through the LEISA magazines and other publications. It also maintains a specialised information database and an informative and interactive website on LEISA (**www.leisa.info**). The website provides access to many other sources of information on the development of sustainable agriculture.

Readers are welcome to photocopy and circulate articles. Please acknowledge the LEISA Magazine and send us a copy of your publication.



20 From local committees to a district association

César Gonzales Alfaro

Faced with decreasing productivity and an increasing population, farmers in the district of San Luis in Peru decided to participate in the Ministry of Agriculture's National Soil Conservation programme. The programme began by setting up a number of "conservation committees" based in the villages. After some years' progress, San Luis was chosen as a pilot area for a new project with the objective of "developing a participatory approach to natural resource management". This project built on the existing local and district committees to form a district association, which, despite some initial difficulties, has seen concrete results such as securing funding for a reforestation project, as well as small scale production projects. This has recently motivated the association to move in other directions.

22 Traditional farmers' groups supporting sustainable farming

Mihin Dollo

The traditional farmers' groups of the Apatani people, in the Arunachal Himalayas, India, have been successfully managing their natural resources for many years. However, in recent times, many of their traditions, practices and knowledge are in danger of being diluted or lost. The Apatani are known for their system of paddy rice and fish cultivation, which is a highly evolved indigenous farming system, producing enough rice to export after meeting local needs. The farmers themselves recognise that, without farmer groups, agro-ecosystem management could easily weaken, and the technical ecological knowledge which supports it could quickly erode. Their challenge is to maintain and preserve their production system and the knowledge and practices it is based on, when faced with changing conditions and outside influences.



4 Editorial

- 6 Collective action for biodiversity and livelihoods Froukje Kruijssen, Menno Keizer and Alessandra Giuliani
- 9 Keeping people on the land Annette Aurélie Desmarais
- **10 The Lagos State Fish Farmers' Association** Y. O. Basorun and J. O. Olakulehin
- 12 Development dilemmas and farmers' organisations Jeyanth K. Newport and Godfrey G. P. Jawahar
- **15** Learning together for organic farming Hans Peter Reinders
- 18 Building FFS networks in East Africa
- Arnoud R. Braun, James Robert Okoth, Habakkuk Khaamala and Godrick S. Khisa
- 20 From local committees to a district association César Gonzales Alfaro
- 22 Traditional farmers' groups supporting sustainable farming Mihin Dollo
- 25 The Malabing Valley Multipurpose Co-operative Cristina R. Salvosa
- 26 Farmer organisation and market access Jon Hellin, Mark Lundy and Madelon Meijer
- 28 Organised for preserving local seed Malamba Clement Mwangosi
- 29 A new vision for south east Marlborough, New Zealand Doug Avery
- 32 Sources
- 34 Networking
- 35 New Books
- 36 Request your back copies of the LEISA Magazine!

DEAR READERS

Since the beginning of January, the team at ILEIA has been happy to welcome our new Director, Edith van Walsum. She has extensive experience working with local organisations in Africa and Asia, has written for the *LEISA Magazine* before, and we are excited by the new ideas and contacts she brings. She says "I look forward to further broadening the ILEIA network and to forging new forms of collaboration and partnership. Let ILEIA continue to be a vibrant and open-minded player in the growing global movement for a fair and sustainable agriculture!"

One way in which we are planning to broaden our network and activities is through our new Documentation programme. As part of our activities, with this issue of the Magazine we are enclosing an English version of the methodology we have been working with. Please read more on page 14 and on our website.

Also inside this issue you will find the 2007 Readers' Survey. We are always trying to improve the *LEISA Magazine* for our readers, and to be able to do this, we need your opinions! We would appreciate it if you can give us your constructive comments about the quality and usefulness of the magazine. Please fill in the questionnaire and return it to us, and we will ensure that you continue to receive the magazine regularly. If you have access to the internet you can also fill in the questionnaire on our website – www.leisa.info – and send it to us that way. We hope to share some of the results and improvements with you before the end of the year!

We look forward to hearing from you.

How farmers organise

Editorial

Everywhere in the world, small-scale farmers are collaborating with each other in some way – forming groups, sharing information, working together. Under the right circumstances, farmers' groups can make a very positive difference to the lives of those working to improve their livelihood options, as well as to the sustainable management of natural resources. The vast majority of articles published in the *LEISA Magazines* describe situations where communities working together formally or informally are a key part of the experience. The benefit of strength in numbers is not a new concept, and for many farmers and communities in rural areas, working together is an obvious, time-tested and often necessary idea.

Working together can take many forms, and a variety of terms are used to cover the scope of this idea – collective action, farmers' organisations, womens' groups, unions, co-operatives, self-help groups, networks, alliances, associations, committees, clubs, partnerships. These terms imply a range of methods for joining forces, at different levels, in a variety of sizes and scopes, with different aims, or with different legal status. In this issue of the *LEISA Magazine* we present articles which discuss and analyse the experiences of some of these types of groups, looking especially at how, where and why farmers organise themselves, and drawing out some lessons.

Why should farmers organise?

For individuals and communities, it is useful and effective –sometimes a matter of survival– to organise and work together for many reasons. In general, farmers and groups organise themselves as a response to a commonly felt need to improve their own social or economic situations. This can create different dynamics and present exciting opportunities. Experiences with Farmer Field Schools show how this works: farmers come together because they have lot of problems with pests. In the process of learning how to deal with this, they discover that pests are a symptom of a bigger problem. They also discover the value of working together in a group, and then find ways build on this to their advantage (see Braun *et al.*, p. 18).

Many tasks related to managing sustainable agricultural practices are best done in groups. This is clear from the various types of informal institutions such as voluntary work groups and long-practiced traditions of reciprocity which are common, and found in countries as diverse as Ghana, the Philippines, and Brazil. These farmer groups are based on community ties, trust between members, obligations, and are based in tradition. In the example of the traditional farmers' groups among the Apatani in India (see Dollo, p. 22), the groups provide the means for sharing and preserving local knowledge, strengthening the cohesiveness of the community through mutual dependency and contributing to effective and long-term natural resource management.

Farmers' organisations of all types have an important role in development – they provide space for participation which contributes to group members' ownership of the issue at hand as well as any solutions. This in turn builds group cohesiveness, solidarity, and promotes mutual support. They can be the platform for building a sense of community, a social support system, increasing self-confidence, learning together and providing a sense of equality. A well-organised group can be taken seriously in a wider environment. Farmers' organisations are increasingly about empowerment, of individuals as well as of the groups themselves.

Groups with common interests can secure access to services that individuals cannot, such as training, credit or equipment. Lack of access to any of these could be the vital issue that an individual farmer faces, yet by joining a group, different opportunities arise, enabling farmers to learn, decide and act. This is particularly the case where farmers organise as a response to marketing concerns, as there are clear economic benefits of working in groups. These include the ability of groups to buy seed in bulk, or access more distant markets. Working together can increase members' bargaining power, which helps to share and lower risks and costs. In areas where farmers are scattered geographically, and transport and communications are difficult, the importance of such organisations is even greater.

Lastly, farmers' groups are an important way for farmers to become recognised, economically, socially and politically. With increased emphasis on farmer-led or demand-driven development processes, groups are an important tool enabling farmers to lead the way and giving them more power. By building on what they have, know, and share (including knowledge, interests and obligations), organising is an important way for farmers to have a voice and increase their influence. This is vital when working towards improving their own social, economic and environmental conditions and can be achieved through lobbying and advocacy activities.

Organising for change

The articles in this issue give some examples of the common goals that farmers organise themselves around - environmental concerns related to social and economic improvement (see Gonzales, p. 10), advocacy (see Newport and Jawahar, p. 12) or access to markets and related opportunities (see Kruijssen et al., p. 6). Groups of farmers who come together spontaneously or through their own efforts to answer their own felt needs are more likely to be effective than groups that are brought together to suit the needs of an external agency. Spontaneous and voluntary formation of social groups involves a high degree of trust which cannot be manufactured. This is one reason why community groups are often formed around one strong personality, and are formed due to some immediate issue which needs attention. It is very common to find women's or youth groups, as they will share a number things in common and are often more comfortable working together than in more mixed groups.

There is an important difference between farmers or communities that organise themselves to work together, and farmers being organised in groups by external actors who see this as a vital step and entry point for community development. External agencies often view the creation of organisations as a positive intervention, a way of increasing impact and sustainability of activities. Farmers and communities often do benefit from participating in such projects through gaining access to trainings, information, resources and further linkages. However, groups formed in this way are typically more prone to difficulties at the start and there is a risk they will not continue if or when the initiating institution pulls out. Alternatively, where previously established local groups gain the support of external agencies, this arrangement can be very positive. A key challenge for these agencies (whether big government programmes or small NGOs) is then to act as catalysts and bring out the self-organising capacities of farmers and local communities in the most locally relevant and useful way. Effective support can facilitate or enable local groups to achieve more, or be heard by the right people. It can be especially constructive while community groups are establishing themselves, or in response to a stated need. However, as groups develop and find their own strength, the external agencies then need to consider the different type of support groups may need. Established groups may move on to needing legal advice, infrastructure such as transport or computers, and will generally need more complex and focused support to maintain as well as develop activities.

Limitations and difficulties in farmers' organisations

There are other difficulties which must be overcome if groups are to develop and flourish in the long term. Often these are problems of day-to-day management, such as farmers not having enough time to participate as fully as they would like, or having difficulty in finding fees or other contributions required. Farmers will weigh these investments against benefits, but often these and other pressing practical concerns can become a difficulty for farmers' groups.

According to the circumstances in which specific organisations are formed, each group will need different types of support, resources and information. Access to this can affect how groups perform. In larger groups or networks, difficulty in reaching decisions and resulting internal conflict is more common. If objectives are not achieved, or results do not come up to expectations, members may lose interest. Groups also have to deal with external pressure or influence, and always have to operate within the local political and economic environment. Challenges faced by groups include ensuring that everyone can be involved, and avoiding that certain interests or voices becoming dominant. This is especially the case with gender and cultural or religious concerns.

Although working together is beneficial in many situations, it must be recognised that organising for the sake of organising, or organising because it is requested by outside projects will not necessarily bring the results expected. Successful groups take some planning, thought and careful consideration of what form they should take in order to reach their goals. Would a co-operative work in the local economic climate? What local or traditional institutions already exist that can be built on or formalised? How large does the farmers organisation need to be to get local government to listen to them? Members should also look at why it is beneficial to be in a group, and consider all their options (see Hellin *et al.*, p. 26).

Successful groupings

By looking at examples of success, we can begin to draw out some common characteristics of effective groups. Research and experience with groups shows that the most successful are often small, informal groups, formed by people of similar backgrounds or concerns, who have a clear objective and vision, are responding to commonly felt needs, and share a high degree of trust. Members of successful groups also realise that the benefits of organising outweigh the costs. They are able to secure adequate support, have clear rules and responsibilities, hold meetings and communicate effectively. These groups are often focused on income generation, and many have a savings or emergency fund. Legal status is also usually needed for an organisation to be recognised by public authorities, or access public services. It can also be useful when finding partners and institutionalising into more formal structures – developments which can help an organisation to progress and move forward. Supportive local policies and a conducive institutional environment are of critical importance. Power relationships at the local and district level are often complex, and strengthening farmers' voices, and making sure they are listened to, are crucial elements of sustainable agriculture.

On a larger scale

If strength can be found in a well-functioning group, then this effect can be amplified when groups work together, or form networks to achieve their aims (see Braun et al., p. 18). Many groups start small, and quickly see the advantages in joining forces with other groups, NGOs or research institutions. This can be beneficial for all parties, provide options that are based in local realities and be more effective and efficient. Depending on the group's objectives, scaling up and reaching out is often a natural step. Such alliances, however, are not always easy to manage, due to different expectations, working practices or attitudes. Much more is known about what makes a successful community level organisation than what is needed to create effective collaborative structures at higher system levels, and this challenge needs to be addressed. However, with honest and open communication, many operational difficulties can be overcome. Strong networks of farmers groups have developed in Latin America, at both regional and national levels. In India there has been a phenomenal increase in and development of womens' self help groups. These groups have gone on to establish federations and larger structures, which have succeeded in making small farmers' concerns heard where they were never heard before.

Moving forward

Many groups organise themselves as a response to a felt need. If this need is resolved, members may feel that working as a group is no longer necessary, or that they need to change their objectives to suit the new situation. As such, some groups are not meant to last forever and it is valid for them to achieve their objectives and move on. What is important is that a group has a clear vision of where it is going and what it wants to achieve – this vision can be adapted over time. In most circumstances, farmers' organisations are beneficial to those involved, although choosing the most appropriate type of organisation, and its internal management, needs careful thought in relation to how to achieve objectives.

The articles in this issue, as well as numerous other experiences, show that farmer organisation is critical and central to furthering sustainable agriculture. This works at every level, from farmers experimenting together to locally improve techniques, to jointly representing their interests at a international level. Given the difficulties faced by small scale farmers, every effort is needed in order to achieve the improvements needed in their various circumstances. Farmers' groups, networks or federations can all make a huge contribution to raising awareness and campaigning for change. In the majority of cases, strong local organisations are, and will continue to be, key to building sustainable livelihoods based on low external input agriculture.

Collective action for biodiversity and livelihoods

Froukje Kruijssen, Menno Keizer and Alessandra Giuliani

The role of well-functioning markets for development is now widely recognised, but the challenge to make these markets benefit the poor and the environment remains. Increasing attention is being given to the potential role markets can play to conserve agrobiodiversity through product diversification and increasing competitiveness in niche and novelty markets.

The market chain for small-scale farmers' fresh and processed products is full of obstacles. Firstly, farmers have limited access to physical and financial resources. This makes it more difficult for them to enhance their scale of production which would reduce costs, or to invest in efficiency-increasing and valueadding technologies. The issue of scale also means that it can be difficult to market a product effectively, in terms of transport and handling costs, and for fixed investments. In some cases a shortage of labour, which can often be solved by introducing a relatively simple technology, prevents farmers from embarking on otherwise attractive value-adding activities. Secondly, smallholders often have limited technical skills and no access to training on production and processing and information on market requirements. Lastly, individual farmers lack bargaining power and as a result any value added to their products by processing or packing may not benefit them directly, as it is often distributed unequally among all the actors in the marketing chain. This is especially the case for seasonal and highly perishable agricultural products because of sudden peaks in supply and a relatively short durability of the products. Economies of scale resulting from the formation of community-based organisations could address these problems. Through collective action, smallholders are able to pool their resources and market their products as a group, so overcoming transaction costs resulting from their small scale. Such organisations can help improve access to resources such as inputs, credit, training, transport and information, increase bargaining power, and facilitate certification and labelling.

Bioversity International (formerly known as the International Plant Genetic Resources Institute) has undertaken several studies that explore the use of market-based approaches to on-farm agrobiodiversity management and livelihood improvement. Case studies have been developed on a range of species, varieties and derived products, including underutilised species and commodities in several regions of the world. These have all shown the importance of collective action.

Thai cowa

A women's co-operative in Chanthaburi province, Thailand, is processing several products derived from a range of tropical fruits, one of which is *Garcinia cowa*, commonly known as cowa. The group, which is over 20 years old, has recently joined the "One Tambon One Product" programme, which was put in place by the Thai government to produce goods of locally available and important resources in order to promote tourism in Thailand at the village (*tambon*) level and increase rural income from the sale of the products. The co-operative, now consisting



Rope twining machines have been lent to individual group members, so that they can make doormats and other products.

of 40 members, was established after a storm damaged the community's durian and mangosteen trees. The immature fruits dropped and could not be marketed as fresh products. Some of the female community members therefore decided to process the fruits in their homes. Supported with capacity building by the district's agricultural extension office, the women were encouraged to process these fruits more frequently from their homes and start adding other fruit tree products. This includes a local dish called *Moochamung*, produced with leaves of the cowa tree, harvested from home gardens or the wild, pork and some other ingredients mostly found in the women's home gardens. The product is canned, labelled and marketed in tourist shops and markets.

The members can buy shares in the co-operative, while profits from this investment are distributed to the members on an annual basis. Members do the processing activities and receive wage payment for their labour. The co-operative also provides credit facilities to its members. The existence of the group has substantially increased the members' income from tropical fruit tree products and has overcome the problems of oversupply of some fruits. Organising as a group has given them access to the appropriate training needed to successfully apply for the food hygiene and safety certification.

Indian kokum

Kokum (*Garcinia indica*) is an underutilised fruit tree, native of the Western Ghats in India, mainly growing in the western parts of Maharashtra, Karnataka, Kerala and Goa. The fruit is

6

used as a treatment for obesity; the rind as souring and food colouring agent, and the fat of the seed is extracted for cosmetic and confectionery uses. In Uttara Kanada collectors of kokum are having great difficulty in marketing their product because of legislation by the Forest Department. Collection from the wild is only allowed if a permit is obtained, which can only be done by entering into a tender system. Unorganised collectors are unable to obtain this license. Because they depend on the forest resources for their livelihoods, they are forced to collect illegally and sell the products through middlemen who have been able to obtain the license. This clearly limits the collectors' bargaining power. Prices for the dried fruits are extremely low and have been decreasing in recent years, resulting in fewer people collecting kokum. For these collectors, who are living below the poverty line and depend on forest products and occasional wage labour, this has had a negative effect on their livelihoods. There is a clear need for increased collective action, enabling them to obtain a license as a group, which would however require some public intervention and capacity building.

Vietnamese coconut products

In the village of Tam Quan Nam, a very poor coconut growing community in Binh Dinh province in Vietnam, a poverty reduction project was implemented by Bioversity-COGENT (the coconut genetic resources network). With the project's assistance, members of a community-based organisation identified the opportunity to increase efficiency of coconut husk processing to replace the old labour-intensive practice of removing the husk and beating it into fibre by hand. A collective loan was provided in the form of a set of beating and decorticating machines to produce the fibre out of the coconut husks. In addition, 150 rope twining machines were lent to individual members. The members volunteer to sell their raw product, the coconut husks, to the organisation at a slightly lower price than elsewhere. In return they benefit from a stable and higher income through the making of ropes and doormats, which are collectively processed and marketed. Through an increased volume and wider range of products the organisation has a stronger negotiation position than the individual members would have on their own. The joint venture also increases mutual trust and friendship amongst the members, who would otherwise be competitors. The beating and decorticating machines are operated by the organisation's daily management. The members queue up early in the morning to receive their individual supply of fibre which they process into rope using their twining machines. The organisation then buys back the rope (after deducting the cost of the fibre) which in turn is processed into various products, such as doormats and textiles. The manufacturing of the various end-products in the community itself increases employment opportunities for a large number of non-member workers. Owing to the higher incomes from coco-based processed products, farmers value their coconut plantations more and are conserving their existing coconut palms, contributing to maintaining genetic coconut diversity in the area.

Syrian laurel soap

In the mountain region of Syria, villagers collect laurel (*Laurus nobilis*) berries from wild trees on state owned land. The oil extracted from the berries has been used for centuries in traditional Syrian cosmetic products. Age-old methods, transferred through generations, are used to produce *ghar* (laurel) oil and soap. A law protecting forest species forbids the collection from wild laurel trees for commercial use and also forbids the harvesting of laurel trees in private lands. Nevertheless, berries are collected from the wild trees for commercial purposes, and there is an informal agreement among the collectors about the access to trees. The oil is extracted manually through a labourintensive process undertaken by women and children in their home gardens. The local soap maker or the trader always buys the oil from the same households. Due to a lack of trust between the collectors and traders, the latter decrease the buying price, whereas the collectors try to lower the quality of the oil, further reducing trust between the two parties. The formation of a collector group to allow a more stable supply and price is also discouraged by the law, limiting the commercial harvesting and marketing of laurel products. Hence, the supply of laurel oil remains scarce, scattered and of low quality. As a result soap makers import the oil from Turkey.

In the village of Kassab in north-west Syria, a local soap producer has brought together a group of collectors living in the forest area. High value soap is being produced for the local and export markets, bringing job opportunities for the local people and improving livelihoods of households who make laurel products in the village. The soap producer tried to overcome the difficulties and confusions about the existing forestry regulations and their application, by involving the collectors in lobbying for improvement of the regulations regarding sustainable collection from the wild and harvesting on private land. This will also allow better conservation of this biodiversity resource.

Collective action and livelihoods

These cases show that collective action is a social process that can be triggered by a range of factors. Groups of people learn through a process; together they define problems, search for and implement solutions, and assess the value of a solution for a specific practice. This process is often referred to as "social learning". The cowa case from Thailand shows how a group of women friends initiated the idea of processing fruits in order to utilise their resources. The initial success, together with the high degree of shared values, agreements and trust amongst the women, enabled further social learning and capacity building. The case illustrates that this process can be the starting point for institutionalising collective action - government agencies and NGOs stepped in to provide capacity building and technical equipment, thus accelerating social learning. The collective activities carried out can be considered highly successful in terms of market performance and maintaining biodiversity.

Some of the communities in these cases still lack a mechanism to trigger the process of collective action. For example, in the kokum case in India, where legislation makes individual collection of kokum fruit from the wild forest lands difficult, the formation of collector groups might be one way to empower them. These collectors, and those in the Syrian mountain communities collecting laurel berries, are still at the beginning of the social learning process. The laurel case shows that on the one hand legislation makes collective action more difficult, while on the other hand there is a need for a means of negotiation (through dialogue including all those who are involved in the laurel market chain and through collective action) to solve conflicts between lawmakers and communities.

If collective action is not initiated by the communities themselves, or by external projects such as the coconut project in Vietnam, it may be begun by other factors or individuals "further down" in the market chain. Initiators are often individuals who are commercially motivated and business minded. This makes it more difficult to ensure that the wider community benefits. However, this does not necessarily mean that the community should be worse off; a link with someone reliable, who is involved in the market sector, has the potential to secure the outlet for their produce. In the laurel soap maker example, the entrepreneur who started the process acknowledged the mutual interdependence among those involved. The need for the active involvement of producers or collectors for improved quality, a stable supply and the improvement of regulations, stimulated the formation of producer groups. There is a need for a key person with initiative and motivation to initiate the process of collective action, who has an impact on the group formation and functioning. This key person could equally be one of the collectors or someone further down the chain.

Collective action can create a more effective market chain that is more stable and can produce the products required at the time needed and of the quality wanted. As a group, producers are able to provide a more stable and higher quality supply of raw material, which also improves the economic efficiency of the market chain. In all cases, improved trust and connectedness among the various actors is already present or expected, within and across the groups. The higher bargaining power and improved access to markets for group members, are made possible by creating a link with other actors along the chain (bazaars, traders and processors for kokum, the soap maker for laurel, and the end users of coconut fibre products). As a



Kokum, collected from the wild, has multiple uses. However, collection is only allowed with a permit, and unorganised collectors are unable to obtain this license.

consequence this contributes to a more equitable distribution of profits along the market chain.

Collective action and biodiversity

The case studies also indicate the importance of collective action for the maintenance of on-farm biodiversity. In the laurel case, where species are collected from the wild, collective action increased awareness about the need for sustainable collection methods and the need to cultivate commercial species. This makes it more likely that the biodiversity related to these local wild species and varieties will be conserved. In the coconut fibre case, the social learning processes raised awareness of the need for linking and combining regulations on biodiversity conservation and economic exploitation. As it was seen that coconut fibre can be processed into high value products, the community now values the coconut trees more, which gives them the incentive to conserve and maintain the local coconut varieties. The same is also happening in the cowa case, where the processing of local products provides an incentive for the planting of new seedlings. The case of the kokum collectors shows that when farmers are no longer able to use or benefit from a certain species, due to obstacles in the market chain, the incentive to conserve this species reduces.

The cases presented have illustrated that improved market participation has the potential to increase how farmers can use and benefit from agrobiodiversity. This therefore stimulates on-farm biodiversity maintenance, although this relationship is not always equally strong or straightforward. They also have shown that the involvement of producers and collectors in the social learning process is important for more environmental sustainability. If the involvement of other market chain actors is ensured as well, this process can form the basis for the trust and connectedness (social capital) that is needed for the reduction of individual risks that in turn is essential for the facilitation of long-term investment, thus enabling sustainable harvesting and investments in processing technology and planting material.

Froukje Kruijssen. Associate scientist, Bioversity International, Regional Office for Asia, the Pacific and Oceania. P.O. Box 236, UPM Post office, 43400 Serdang Selangor Darul Ehsan, Malaysia. E-mail: f.kruijssen@cgiar.org

Menno Keizer. Regional Marketing Advisor East Africa, VECO. P.O. Box 7844, Kampala, Uganda. E-mail: veco-ug@veco-uganda.org

Alessandra Giuliani. Consultant, Bioversity International. Hohgantweg 5, 3012 Bern, Switzerland. E-mail: giuliani.ale@gmail.com

References

Bosc, P. M., D. Eychenne, K. Hussein, B. Losch, M.R Mercoiret, P. Rondot, and S. Mackintosh-Walker, 2002. The role of rural producer organisations in the World Bank rural development strategy. The World Bank Rural Development Strategy Background Paper No. 8. World Bank, Washington D.C., U.S.A.
Giuliani, A., *in press.* Developing markets for agrobiodiversity: Securing livelihoods in dryland areas. Earthscan Publications, London, U.K.

- Keizer, M., 2005. Increasing livelihood opportunities through market research and strengthening of market channels: Conduct of market surveys and development of market channels. In: Batugal, P. and J.T. Oliver (eds.), Poverty reduction in coconut growing communities. Volume III: Project achievements and impact. IPGRI-APO, Serdang, Selangor, Malaysia.

- Koelen, M. and E. Das. 2002. Social learning: A construction of reality.
In: Leeuwis, C. and R. Pyburn (eds.), Wheelbarrows full of frogs: Social learning in rural resource management. Van Gorkum, Assen, The Netherlands.
- Kruijssen, F. and S. Somsri. 2006. Marketing local biodiversity in Thailand:

Identification of a possible good practice for on-farm biodiversity in Thanautic Identification of a possible good practice for on-farm biodiversity management of tropical fruit trees. Paper contributed at the Deutscher Tropentag, "Prosperity and Poverty in a Globalised World – Challenges for Agricultural Research", 11-12 October 2006, Bonn, Germany.

Keeping people on the land

Annette Aurélie Desmarais

"Through La Via Campesina we learned that we were not the only ones struggling. Globalisation has meant the impoverishment of the majority of communities, [but] we need to globalise this struggle for justice, for the survival of communities, for the development of communities. We need to globalise this struggle in the poorest of communities everywhere." Servando Olivarria Saavedra

These words, spoken by a peasant leader from Mexico, provide glimpses into what La Vía Campesina is all about. This is an international peasant movement that brings together 149 organisations of peasants, rural women, indigenous agrarian communities, small and medium-scale farmers and farm workers from 56 countries in Asia, the Americas, Africa and Europe. It is the largest and most significant rural movement to have emerged in recent times. Since 1993, La Vía Campesina has worked hard to put in place a radically different model of rural development, one that keeps farming families on the land, builds vibrant rural communities that produce healthy and safe food, respects diversity, and is based on social justice.

La Vía Campesina works at the local, national and international levels to change agricultural and rural policies to help improve the well-being of people living in the countryside. It focuses on eight issues of great concern to farming families everywhere: food sovereignty and agricultural trade, biodiversity and genetic resources, rights of migrant farm workers, sustainable peasant agriculture, gender equality, agrarian reform, human rights in rural areas, and peasant-based sustainable agriculture.

Considering that food is a basic human right, "food sovereignty" is at the heart of La Vía Campesina's peasant-led model of development. La Vía Campesina believes that food sovereignty is only possible through a genuine agrarian reform that guarantees peasants, small-scale farmers, indigenous peoples and rural women greater access to and control of productive resources. Food sovereignty does not go against agricultural trade, but it prioritises local production for local consumption.

Mexico's UNORCA

The Unión Nacional de Organizaciones Regionales Campesinas Autónomas (UNORCA) is a national federation that brings together 2700 organisations from 23 states in Mexico. These rural organisations represent a total membership of more that 400 000 farmer families. UNORCA's main goal is to represent the demands of its broad membership at the national level to help ensure that national policies keep people on the land and contribute to the well-being of those living in the Mexican countryside. This is a difficult and desperate struggle, especially in light of the dramatic changes that have taken place in Mexican agriculture since UNORCA was formed in 1985.

In brief, since the 1980s, the Mexican government has made significant steps in integrating the country into the global marketplace. Today, Mexico boasts eight free trade agreements encompassing 24 countries on three continents, the most famous of which is the North American Free Trade Agreement. This treaty promised the creation of employment opportunities and a reduction in rural poverty, but farmers and people in the rural areas have seen few benefits. "Liberalisation" in agriculture opened the borders to food imports, accompanied by the dismantling of guaranteed prices for producers and a substantial reduction in subsidised inputs.

Faced with this situation, UNORCA began to participate in exchanges with farmer organisations in Central America, the United States and South America to find out what was happening in the rural areas in other countries. Seeing similar situations elsewhere, UNORCA quickly realised the need to join forces with other rural organisations that opposed the globalisation of agriculture. UNORCA joined La Vía Campesina as it hosted its second International Conference in Tlaxcala, Mexico in April 1996, and since then it has played a key leadership role, being responsible for La Vía Campesina's International Working Commission on Biodiversity and Genetic Resources and it is also one of the Regional Coordinators for the North American Region. Its work, however, focuses mostly on exerting pressure on the Mexican government and in providing services to its member organisations. As one leader puts it: "UNORCA serves us in many ways: it keeps us informed, it provides training, we learn of other experiences from around the country, and it gives us representation at the national level."

Effective strategies

UNORCA represents a great diversity of organisations from across the country and to work effectively it must balance the various interests of its membership. To do this, it developed a democratic structure that distributes decision-making power equally among its membership. UNORCA has also adopted numerous strategies to support its members, depending on the region and the organisations involved. In Chiapas, the organisations are working primarily on issues of agrarian reform, indigenous self-government, management of natural resources, and human rights. In contrast, in Michoacán, the local organisation has created a commercial business organisation that pools fruit for export to the United States. UNORCA emphasises the formation of new leaders through leadership capacity-building at the local and regional levels. It trains its youth to analyse what is happening around the world and on how to be a community leader, aiming at a constant rotation in leadership positions.

Union leaders are convinced that mobilisation is one of the most important strategies to effecting change in the countryside. According to one leader: "resistance must be transformed into constant mobilisation. We need all types of political pressure and the public mobilisation of people." In other words, mobilisation must be massive and include the participation of different sectors of society. Consequently, when the new phase of the North American Free Trade Agreement began in 2003, UNORCA organised major demonstrations over a period of two months which drove the Mexican government to start negotiations with farm leaders. Similar demonstrations are taking place today against the sharp increase in the prices of food.

UNORCA, as all other members of La Vía Campesina, argue that the agricultural crisis is intolerable and that a new model of rural development is desperately needed. They believe that change is only possible by organising themselves into action.

Annette Aurélie Desmarais. Assistant Professor, Department of Justice Studies, University of Regina, Regina, Saskatchewan, Canada. E-mail: annette.desmarais@uregina.ca

The Lagos State Fish Farmers' Association

Y.O. Basorun and J.O. Olakulehin

Often referred to as the commercial centre of the country and of West Africa, the state of Lagos is found in south west Nigeria, lying entirely within the rainforest zone of the humid tropics. It has a coastline of 180 km and a small surface area (only 3577 square kilometres), approximately 22 percent of which consists of lagoons, creeks and rivers. The estimated number of farm families in the state is 350 000, and fishing is the most important occupation of the rural population along the coastline and river courses, ranking next to crop farming in terms of occupation of all rural households in the state. Unfortunately, fish catch is not as high as would be expected, and the amounts of fish caught have been decreasing in recent years. In 2005, the annual fish catch stood at 18 000 tonnes because fish populations are decreasing. This is not enough to satisfy demand, and around 80 percent of all fish consumed in Lagos is brought in from outside the state.



Some of the members of the Lagos State Fish Farmers Association during their most recent meeting.

As less and less fish were being caught, people became more interested in and curious about fish farming. The Lagos State Agricultural Development Authority realised that fish farming offers the possibility of increasing fish production, as well as creating employment opportunities, resulting in an additional source of income for urban dwellers. A few years ago, the Authority decided to include fish farm practices in its extension programmes, covering issues such as the preparation of feed rations using locally available feed ingredients, the construction of homestead fish ponds with locally available materials, the integration of commercial fish farming with the urban population's daily activities, the production of fingerlings or young fish at the farms, as well as marketing issues, record keeping, and the linkage with financial institutions for credit sourcing.

As a result, the number of fish farms increased from 500 in 1997 to over 2000 by 2004, with the total area covered by fish farms increasing from 150 to 330 hectares in the same period. Fish farm production now averages 9500 tonnes per year. Fish farming has been promoted as a low external input technology benefiting from

the availability of natural resources and from the optimal local conditions: a high water table almost everywhere in the state, good soil structure and texture for the construction of fish ponds, and an abundance of kitchen wastes that can easily be converted to fish feed ingredients. In this context, fish farmers need little or nothing from outside their environment to achieve optimal production.

The need to get together

But the growing numbers of fish farmers also brought some problems which had not been seen before. Unlike fishermen, who usually reside in one community along the coast and are culturally webbed together, the farmers who were newly engaged in fish farming have completely different socio-cultural backgrounds (especially in the city), with fish farming being the only thing they share. Fishermen in a particular community find it easy to bulk purchase inputs, or to form themselves into a co-operative society for easier access to credit and market outlets. This is difficult for fish farmers because they are not congregated in one location. In a similar way, the dissemination of improved practices for fish farming was also problematic for the extension agents as the farmers are scattered all over. The practice of homestead fish ponds within the residential areas by individuals who have other business was also an obstacle for the extension agents, as they had to reach them outside their farms during working hours.

After producing fish for some time, fish farmers in different areas realised the disadvantages of the situation they were in: limited access to extension services, reliance on middlemen for marketing (who would also determine the price of their produce), inputs available only at inflated prices, and no chance to share experiences or ideas with others. This was all reflected in the profit they were making. By working independently, the cost of producing fish was almost the same as the selling price. In addition, they realised that by not working together, it became virtually impossible for them to be properly represented when this was necessary, for example, in the World Food Day celebrations or in lobbying activities.

The Lagos State Fish Farmers' Association

The problems mentioned above became so obvious that the Lagos State Agricultural Development Authority was requested to facilitate the formation of a fish farmers association in 2004. In addition to the provision of extension services, the Authority then decided to try "connecting" people who did not know each other and who were based quite far from each other. The Lagos State Fish Farmers' Association started with less than 10 members, all of them convinced that by working together they would have better access to inputs, markets and credit facilities. The Authority provided them with some basic institutional support, like stationery for the records of their meetings, and free publicity of their activities.

By December 2006 there were 2100 members. The growth of the Association has been gradual though steady, with members joining after hearing about the results achieved, mostly in terms of the Association's links to markets, inputs and credit. It is mainly the existing members who publicise the Association to would-be or intending members. In addition to this, the extension agents of the Lagos State Agricultural Development Authority have also assisted in mobilising members for the Association. From its inception, the leadership of the Association recognised the importance of meeting regularly to sustain members'



A typical homestead fish pond of 3 x 3 x 3 metres.

interest, while at the same time they realised that if the financial contributions requested from members were too high, members' commitment may lessen. Therefore they sought the assistance of the Authority in finding a convenient and centrally located meeting place, which was provided at no cost. The contribution per member per meeting was fixed as low as 100 *naira* (or less than one US dollar).

In order to ensure that members get adequate information as well as update their knowledge on a regular basis, the Association holds a general meeting every fortnight. The agenda includes training for members by a resource person on any identified or current aqua-cultural problem common to all. For example, members do not want to be limited by live or fresh fish sales, so the Association is training their members in preservation and marketing principles in addition to the production technologies. During the most recent meeting in February 2007, members were taught how to smoke fish in order to increase the shelf life and add value to fresh fish.

These meetings also provide a very good opportunity for government agencies, NGOs, input dealers, credit institutions and other stakeholders, to meet a sizeable number of fish farmers. And apart from organising these meetings, the Association has also set up a series of committees for specific activities. These are democratically elected among qualified members, distributing the roles and responsibilities between those who show commitment (in terms of attendance to meetings and contributions). One of these committees, for example, drafted a constitution, already adopted for use. Non compliance with the provisions in this constitution leads to fines or even to the expulsion of an individual member.

The Association has been able to purchase inputs in bulk, which has greatly reduced production costs. It has also facilitated the standardisation of production, a step which is necessary when working to improve marketing. Gradually, the Association is becoming a force to reckon with in the regulation of fish price in the state. Prior to the formation of the Association, the price per kilogram of fish was so unstable that it could drop by 50 percent during the glut. Nowadays it drops less than 10 percent. The main reason for this is that the Association has helped many members reach markets directly, bypassing the middlemen.

A successful story

The successful formation of the Association and its continued growth show the clear benefits it brings to the small scale farmers and to all the stakeholders in the local fish farm industry. Recent reports by the Lagos State Ministry of Agriculture and Co-operatives indicate that fish production on farms has doubled in the last 2 years. It is also interesting to see that, because of the information shared, the production cycle in most fish farms has reduced from 8 to 5 months. Looking into the future, the Association is introducing a joining fee, and is planning to make credit available to members with its accumulated funds. It is also thinking of inviting not only the producers (fish farmers) as members, but also other stakeholders (input dealers, service providers, feed millers, marketing advisors). This may lead to more efficient input and output supply chains, taking everybody's interests into account.

Within a short time, the Lagos State Fish Farmers' Association has clearly shown that organising farmers into groups along commodity and related lines is possible with few resources, and that this has the potential for solving many problems faced by farmers.

Y. O. Basorun and J.O. Olakulehin. Lagos State Agricultural Development Authority, P.O. Box 3845, Agege, Lagos State, Nigeria E-mails: olajidebasorun@yahoo.com ; dapoolakulehin@yahoo.com

MA SCIENCE, SOCIETY AND DEVELOPMENT

Join IDS at the University of Sussex and study at one of the world's leading organisations for research, teaching and communications on international development

New for 2007, a course that addresses the most vital health, environmental and agricultural concerns of today, and explores how science and technology can contribute to poverty reduction, social justice and environmental sustainability in the developing world.

Two full scholarships for African students.

For more information go to http://www.ids.ac.uk/ids/teach/mascience.html or contact the Teaching and Training Unit, Institute of Development Studies at the University of Sussex, Brighton BN1 9RE, UK

Tel: +44 (0) 1273 606261 Fax: + 44 (0) 1 E-mail: teaching@ids.ac.uk www.ids.ac.uk

Fax: + 44 (0) 1273 621202/691947 www.ids.ac.uk





Demonstration against the ship-breaking yard project. STMKU members blocked the road to attract the government's attention.

Development dilemmas and farmers' organisations

Jeyanth K. Newport and Godfrey G. P. Jawahar

The Palli and Pattapu communities live on the coastal lands of the districts of Prakasam and Nellore, in Andhra Pradesh, a state in south-east India. For centuries, the primary occupation of the Pattapu communities has included both subsistence fishing and farming, whereas the Palli community has depended mainly on agriculture. One of the main characteristics of the villages in this area is that they are headed by traditional leaders called kapus or administrators. Each village has three kapus called Pedha Kapu, Nadu Kapu and Chinna Kapu, who are responsible for social control, community economic affairs and conflict resolution respectively.

If there is any land dispute or problem in the village, this is brought to the notice of the kapus. They fix a day for a common hearing for judgment and the saladi (or messenger) informs all the villagers of the date and time of the meeting. The hearing is then held in the village temple and the kapus analyse the problem with the village elders. The Pedha Kapu determines the responsibilities, the Chinna Kapu decides the fine or penalty and the Nadu Kapu enforces the decision. Depending on the nature of the problem, kapus from a number of hamlets can be involved in taking a decision.

Increasing difficulties

In the early 1990s, the Palli and Pattapu communities were facing a difficult situation for various reasons. The increasing presence of large-scale fishing interests and the depletion of the marine resources forced many Pattapu communities to shift completely to farming. And both the Pattapu and the Palli found it increasingly difficult to depend on agriculture for their livelihoods.

The strip of land between the coastal hamlets and the high tide level of the sea, known in the area as Sri Krishna Bhoomi, was controlled by the local communities until the late 1980s. These lands were used for the cultivation of groundnuts using shallow wells as sources of water. The available lands were divided equally among the families of the nearest hamlet. As groundnuts had a good market value, the communities had a regular and sufficient income. In early 1990s, however, the central Government declared this land a Coastal Reserve Zone and brought the land under its direct control. Under a programme called Green Belt Promotion, the Forest Department planted casuarina seedlings and prohibited the use of this land for agriculture.

Having lost the option of using this land, the communities moved on to lands near their hamlets and tried to convert unproductive sandy tracts for agricultural use. This was not easy, and was complicated further by the establishment of large numbers of shrimp farms in the area, which was possible because there was no Coastal Regulation Zone Act to prevent it. The horizontal seepage of brackish water from the shrimp farms made many hectares of agricultural lands turn saline. To complicate the situation even more, in March 1998 the Andhra Pradesh government issued a permit for the construction of a ship-breaking yard (where old ships are taken apart for scrap) and minor port project near Chirala, in Prakasam. More than 80 hectares of coastal farming land were to be used for the development of the port, including the construction of offices, a thermal plant and roads connecting the area to the national highways. Approximately 400 hectares were to be used for setting export oriented industries.

The emergence of the farmers' union

The Society for National Integration through Rural Development (SNIRD), an NGO based in Prakasam, has been working in this area for more than two decades with projects on capacity building, gender issues, disaster preparedness and community

organisation. Initially the NGO organised mass meetings and educated the people on community organisation. The youth and the women were involved in identifying local village level issues and in representing these to various government departments. Responding to the concerns of most villagers, the NGO decided to support them in the formation of a local organisation whose main objective would be to defend their interests. Discussions with the different communities showed that the traditional leaders could play a crucial role in forming the organisation, and they could use a structure similar to that of the *kapus* - having representatives at the micro-level (in every village) and then forming a macro-level organisation covering both districts.

Kapus from 45 hamlets in Prakasam and Nellore were invited to go to the states of Kerala and Tamil Nadu to meet with the existing farmer unions there. These two states were selected as they were already implementing interesting policies on behalf of small scale farmers and fisherfolk (subsidies, coastal and marine regulations). After returning, the *kapus* organised a cycle rally covering 217 kilometres, visiting all the coastal hamlets. They called on all communities to be aware of the dangers of the proposed ship-breaking yard and the need to act against it. They planned a meeting inviting the *kapus* of 221 hamlets in March 1998.

Together, these *kapus* took the initiative of forming a farmers' union. They elected one village representative from each of the 221 hamlets and formed the General Body of their organisation. This General Body elected an Executive Body with 21 representatives, which in turn elected a General Secretary. The Executive Body opted for a system of membership fees, and the village representatives were given the role of collecting the fees. By October 1998 they had been able to overcome a series of difficulties (the distance to the Registrar Office, the many queries posed and the recurrent delays) and the *Samudra Theera Matsya Karmikula Union* (STMKU) was officially registered as a farmers' union with more than 3000 members, with 34 percent of them women.

Lobbying for conflict resolution

The Union decided that the proposed ship-breaking yard and the situation of Sri Krishna Bhoomi were the major problems facing the Pattapu and Palli communities. The acting members of the Union divided themselves in four teams and visited all the hamlets in these districts, organising mass meetings where all villagers discussed the land issues and farming problems affecting them. The Union organised press meetings at the district level and made the general public aware of the problems presented by the proposed ship-breaking yard. Furthermore, the Union submitted representations to the Prime Minister of India, and to the Chief Minister of Andhra Pradesh, requesting the authorities to withdraw the ship-breaking project as it would clearly destroy livelihoods of the farming communities along the coastline and pollute the ecosystem. The police had to intervene several times to displace Pattapu and Palli villagers protesting near the proposed project area, and perhaps the most difficult moment came when the authorities tried to force the displacement of 5000 families. Union members reacted and protested strongly against this, and for the restoration of their agricultural lands. As part of the Union's strategy, a detailed representation was prepared and copies were sent to the national and state authorities, to the District Administrators and to political leaders.

In addition, several Union members visited the Regional Pollution Control Board at Nellore and requested it not to give pollution clearance for the project. The Union prepared a detailed report about the livelihood problems of the Pattapu and Palli communities, and sent it to the Minister of Environment and Forests, to various research institutions, and to local, national and international NGOs, asking them all to support the halting of the project. In the meantime, a representation submitted to the National Institute of Oceanography at Goa was referred to its Regional Office at Visakhapatnam. With "utmost emergency", three scientists from this institute visited the area and conducted an in-depth study of the ship-breaking project and its implications, interacted with the Union leaders and community members, and then submitted their report to the Andhra Pradesh and to the national government. Their report stated clearly that the project would be highly detrimental to the coastal ecosystem and would pollute acres of agricultural land. As a result, the project was withdrawn and its implementation was suspended.

Continuing with their regular lobbying activities, STMKU then tried to tackle the problem of Sri Krishna Bhoomi. They organised a campaign to highlight the existing situation to the authorities, collecting signatures and sending post cards to the Ministry of Environment and Forests and to the Chief Minister from every village. After several months, the Andhra Pradesh government finally considered their request and made the villagers legal owners of Sri Krishna Bhoomi, agreeing to part with two thirds of the income generated from the casuarina plantations (cutting the timber for paper after three years). All clashes came to an end as the Pattapu and Palli communities immediately became the protectors and promoters of the plantations. The government gives the income generated to the village common fund, which is used for celebrating village functions. The last few years have shown the advantages of community participation in coastal land management, as the ecosystem has been successfully sustained.



A planning session at the village level, including the STMKU Executive Committee, the village representatives and STMKU members.

Lessons learnt

The STMKU started by actively involving the traditional leaders, and this is why its decisions and actions have been well accepted among the communities. At the same time, as the Union is represented by villagers who have the same occupation and face similar problems as all villagers, the issues it addresses have attracted the attention of the majority of the population, and participation levels have been high. Equally positive has been the fact that the decisions and actions planned by the Union have shown no political orientation, as the Union is not affiliated to any political party. In addition, the enrollment of women members in the Union paved the way for women to participate in the different campaigns alongside the traditional leaders, which is different from traditional village meetings, where women from Pattapu and Palli castes are not allowed to attend. The Union's intervention in favour of the local livelihoods and its successfully halting the ship-breaking yard project and in obtaining legal rights over the coastal lands have greatly increased the villagers' confidence. As a result, membership of the farmers' organisation has increased from 3000 in 1998 to more than 18 000 in 2006. To help them cope with this new challenge, the Society for National Integration through Rural Development has organised managerial skills and capacity building trainings, oriented both at managing their funds and running their day-to-day activities. The General Body of STMKU meets once every three years and the Executive Committee meets once a month to review and plan their monthly activities. The Union now plans to include fisherfolk from the neighbouring Guntur district, and will also try to affiliate with national level networks.

It must also be said, though, that in spite of the many positive results, the formation of the STMKU has also experienced some difficulties. As elsewhere in India, the caste system has a predominant role in society and in all its organisations. Involving two different communities has not always been smooth, and the Union has witnessed a power struggle on several occasions. They have also needed support in recordkeeping and with the regular documentation of the Union's activities. Another constraint has been the lack of financial means – the funds generated from the membership fees is only enough for the Union's day-to-day management, not for any additional activities. And since the Union has been registered under the Trade Union Act, it has not been able to mobilise credit from banks or financial institutions, as they have legal limitations on supporting trade unions. Furthermore, the geographical spread of the districts is large: distances and a lack of communication facilities make co-ordination more difficult.

The future

As the Pattapu and Palli communities in Nellore and Prakasam have been organised on the basis of their traditional leaders, this has made them aware of their own strengths, potentials and limitations. Community participation managed by the Union has restored the coastal lands for agricultural activities and has also made them active in managing the coastal forest lands. Their vision is to involve all the Pattapu and Palli families in this region as members of the Union, and to affiliate the Union with the state and national level networks. More ambitiously, they are planning to take up welfare measures and support fish and agriculture workers in restoring and developing their livelihoods. For the time being, the local NGO, SNIRD, continues to provide technical guidance and support, which is oriented at ensuring the long-term sustainability of the *Samudra Theera Matsya Karmikula Union*.

Jeyanth K. Newport. Development Associate, 57-A Yesudian Street, Nagercoil – 629 001, Kanyakumari District, Tamil Nadu, India. E-mail: jeyanthnewport@gmail.com

Godfrey G. P. Jawahar. Executive Secretary, SNIRD. Railpet, Ongole – 523 001, Prakasam District, Andhra Pradesh, India. E-mail: snird_org@yahoo.com

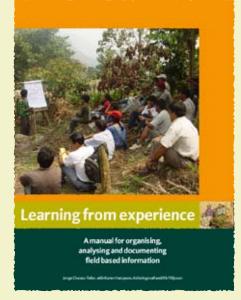
The authors would like to thank HIVOS of the Netherlands for supporting the organisation of farmers and fisherfolk in Prakasam and Nellore and for providing capacity building assistance to STMKU.

Documentation for change

Enclosed with this issue of the *LEISA Magazine* is your copy of the documentation manual which ILEIA has been developing and working with recently: **"Learning from experience: A manual for organising, analysing and documenting field based information"**.

The methodology presented in this manual, first tested in Latin America, has since been tried out in different contexts and countries, which has helped us to refine, improve and develop it. We would like to encourage you to try it out, use it to document an interesting experience and then share it with us and our readers. And after doing so, we'd like to hear what you think of the method and the manual – let us hear all your comments, which will help us to improve it further. We are interested in working together with some institutions on trying out the methodology, so if you would like to set up a joint workshop, please contact us to discuss possibilities.

During 2007 and 2008, and building on the results of *LEISA Magazine* Vol 22.1, "Documentation for Change", we also want to look in detail at other documentation efforts, to develop thinking and promote documentation in general. We believe that following a documentation process can help significantly in learning from an experience, and therefore to the development of knowledge in ecologically sound agriculture. In the same way, we believe we can learn more about how to document by looking in detail at different documentation processes. Are you taking photos, promoting the use of videos, or following another documentation methodology? Or are you interested in trying to document your experiences? If so, please contact us, tell us about what you are doing, and join the group of people and organisations we are working with to document their documentation experiences.



For more information, and to see some of the many different efforts currently being carried out to document LEISA experiences, take a look at the Documentation section of our website, where you can also go through the methodology online.

Website: http://documentation.leisa.info E-mail: j.chavez-tafur@ileia.nl

We look forward to hearing from you!





Farmers discuss soils during a visit to a member's farm in summer.

Learning together for organic farming

Hans Peter Reinders

In the 1930s, the expanse of water in the Netherlands known as the Zuyder Zee was enclosed with the construction of a 30 kilometer long dyke, in order to begin the process of reclaiming land from the sea. This dyke transformed the Zuyder Zee into an inland sea, which gradually became a freshwater lake, known as the IJsselmeer. Four enormous low-lying tracts of land (polders) in the IJsselmeer were drained, which provided 165 000 hectares of new land. This land became a new province, Flevoland, and two of these polders are now mainly used for agriculture.

After the polders dried out, it still took many years of drainage for the soil to settle and become suitable for growing crops. The office responsible for developing the IJsselmeer polders promoted maturing of the soils by sowing reeds, followed by cereals, pulses and linseed. What followed was a transmigration programme that brought mainly young and progressive farmers from other parts of the Netherlands to these polders. They started new farms on land four to six metres below sea level. Many of these farmers were well educated and several of them had, during their college or university time, learnt about alternative agricultural concepts such as biodynamic farming and organic agriculture.

Quest for knowledge

In the 1980s, organic approaches to agriculture were still in their infancy in the Netherlands. The farmers who were interested in biodynamic or organic crop production were actively looking for the information necessary to run a large-scale organic farm. This approach to farming was appealing because it was environmentally-friendly, but also because there was a growing demand for organically produced food in the Netherlands and Europe. But, back then, the farmers lacked the know-how or any practical experience in running such a system successfully. Surrounded by conventional agricultural systems, they were isolated and just experimenting on their own. In 1989, frustrated by the lack of knowledge on organic practices, several of these farmers got together. First, they started a local study group, meeting and sharing ideas and experiences in an informal manner around the kitchen table in one of the participants' farmhouses. Some time later, when it was necessary to open a bank account on behalf of the study group, they decided to name themselves "The Organisation for Biodynamic and Organic Farmers, Flevoland", BDEKO.

BDEKO became the engine for the development and diffusion of new knowledge on organic farming in the polders. In those days, the members were very keen to access any information that could assist them in developing an efficient and productive farm plan for their individual farms. Just like other farmers all over the world, their main production concerns included effective methods of preserving soil fertility and fighting weeds, pests and diseases. The choice of crops to grow was dictated largely by market demands for organic products, and included carrots, cauliflower and different types of cabbages, onions and peas. Farmers experimented with different crop patterns, both in space and in time, trying out different alternatives on their own land. Like all experimentation, it was not always successful, but the "failures" also provided many learnings. One of the shortcomings of this farmer research was that its outcome was based mostly on personal observations made by individual farmers, while hardly any data was recorded.

A great step forwards was made when the organisation started collaborating with the government agricultural research station (*Onderzoek Bedrijfssystemen*, OBS) in the nearby village of

Nagele. This station's mandate was to assist in the development of farming systems in the polder, and they were therefore in a much better position than the farmers to do the more risky and long-term experiments. Research activities included testing three different farming systems, on a realistic scale and over a long period: one farm where conventional high-input agriculture was implemented, one farm experimenting with reduced use of chemical inputs, and another farm with practices fully based on organic principles. Every year, the results of the different farming systems were published and presented to farmers, including the members of BDEKO. Additionally, farmers were always welcome to visit the experimental farms, make their own observations during the growing season and discuss these with research station staff.

At a later stage, and in collaboration with the research station, some more specific experiments were started on some of the organisation members' land. An important issue was, for instance, mechanised weeding. Labour is expensive in the Netherlands and labour required for weeding is always a major production cost for organic farmers with farms averaging 60 to 80 hectares in size. Therefore, they are always looking for technology that can control weeds effectively and economically. Different machinery for hoeing, ridging and harrowing were developed and tested on selected farms. The experimental results from these farms were complemented with data recorded by other farmers on their own land - measuring, in this case, the amount of time spent by farmers on weeding their fields. In this way, the different weeding methods and cropping patterns that were tried by the individual members of the organisation could be compared and evaluated.

Thanks to all these different research activities, very efficient cropping schemes and techniques were developed, many of which are still being used in the polder now. Examples of this include various crop combinations and rotations, both within one season as well as in consequent years. This also includes the regular use of some leguminous –nitrogen fixing– crops as one way of maintaining soil fertility. Strategies developed for managing pests and diseases include timing of planting –early or late planting– of certain crops. Other examples of practices developed include techniques to prevent the growth of unwanted plants in the fields, both weeds and sprouting of plants grown previous in the field. Such "soil friendly" practices include regular harrowing of fallow land and the use of cover crops.

Growing membership

In the 1980s, the organisation wanted to encourage the increased supply of organic products and, therefore, supported more and more polder farmers in making the transition to ecological farming. A larger number of organic producers would mean that they could all benefit from lower logistical expenses. By joining BDEKO, farmers were offered a lot of practical information and support, and this made it easier for conventional farmers to make the transition. Within five years BDEKO had grown in number to 80 members, leading to changes in the way the organisation was run. General meetings were now organised more officially, less frequently and in rented venues. The larger group was split into three sub-groups who still met at regular times locally, around the kitchen table. Members continued to show a high degree of commitment, with at least 80 - 90 percent of them turning up for meetings. All members were facing the same difficulties and aspirations; they felt that they were all "speaking the same language". It was a great adventure to explore this new subject and they knew that working closely with others in the group would greatly assist them in developing

their own ecological farms. Some very strong friendships between different members were formed in those days.

It is also worth mentioning that, at that time, there was no agricultural extension service available on issues concerning organic farming, simply because very little practical information was available at that time. Therefore, even the agricultural extension agents working in the polder used to join the BDEKO meetings or visit members' farms in order to learn from the pioneering farmers about the organic production practices they were developing.

Other activities

From the start, different activities were organised for group members in summer or in winter. In summer, the main season for crop production, they visited members' farms in order to learn from each other. This was done every two weeks starting from June, when the time-consuming weeding activity was more or less finished. In the early days, technical topics like crop rotation and soil fertility management were often central issues during these meetings. Nowadays, during summer visits, members have the chance to look at, for example, a new mechanised weeder or a post-harvest storage system used by the host farmer. During such visits there is often some serious discussion between farmers. The fact that they all embrace ecological principles in their production practices does not mean that they always agree with each other on ideological or on technical issues. Over the years, the organisation also arranged visits to interesting organic farms or to research organisations working on organic agriculture outside the polder. Participation in such trips was often less as some members felt that they could not spare the time in the middle of the main cropping season for study visits that would take them far from their farms, or for a long time. However, these visits were greatly appreciated by those who went.

In winter, different speakers would be invited to discuss technical issues relevant to members, for instance dealing with on-going research or economic issues. Speakers would also be invited on topics related to the personal development of the farmers, or issues that could inspire the members. The members were always in charge of selecting the topics, inviting the speakers and organising the evening according to particular needs or circumstances. At the end of 1997, which was a very bad year for farmers in the Netherlands, some members organised a workshop on laughing as a relaxation method. The aim of that winter meeting was to cheer the members up and to find new energy together as a group, to be able to deal with production concerns in the following year.

Over time, the organisation has hosted a multitude of organisations and private people as presenters during these winter meetings. These meetings have also been used strategically to establish closer contacts with certain institutions, like the agricultural university in Wageningen. The initial feeling was that the research conducted at that university was too conventional in nature. By inviting university scientists to the winter meetings, they were able to explore opportunities to influence the type of research done by the university. This way, the scientists became more involved in finding answers to the many burning questions that the organic farmers had.

Changing conditions

BDEKO only became a formal farmer organisation in 1999. Earlier, there had not been any pressing reason to register the group officially. The main reason for the decision to change the status of the organisation was because of local developments which would directly threaten the organic status of some members. Plans were developed to construct a waste burning installation nearby, and the gases pumped out from such an installation would mean that farms in the immediate vicinity of the plant would no longer be eligible for organic certification. In order for BDEKO to be able to lobby against the construction of this plant, the farmers had to organise themselves in a more formal manner so that they could be recognised by the Dutch government as a stakeholder in this case.

The farmers therefore formulated statutes, selected a Board and the organisation was formally registered. The Centre for Organic Agriculture (CBL), a not-for-profit institute that BDEKO had been collaborating with since 1995, became the secretariat of the organisation. On the one hand, this formal status made procedures much more bureaucratic, but on the other hand it provided its members with new opportunities. They were now invited to participate in different working groups dealing with the development of agriculture in the Netherlands, and got involved in discussions around new agricultural policies.

The informal status of BDEKO had functioned well at the time when the development and exchange of technical information were most important. However, when this became less of a



The ecological crop practices developed by organic farmers yield good quality products.

priority, BDEKO's objectives changed. In response to the changing needs of the members, the organisation became involved in the development of more and reliable marketing contacts for members.

More recently, a focal point has been their representation in influential organisations in the field of agriculture in the Netherlands, achieving some positive results. One example was the lobby to influence a national agricultural plan. The Netherlands has a complicated legal system of regulations to mitigate fungus diseases in crops such as potatoes and onions. To reduce the widespread problem of late potato blight, a national "Phytophthora Masterplan" was developed. However, implementation of the original plan would have made it impossible for the organic farmers to grow potatoes. Due to effective lobbying, and an intensive dialogue with the conventional agricultural sector in the Netherlands, the plan was adapted and now provides regulations which are acceptable to the organic growers.

Another successful example of BDEKO's lobbying activities involved the introduction of growing genetically modified maize. Although they were not able to completely prevent the authorisation permitting the use of GM maize on conventional farms, they managed to introduce measures which reduced the threat of this maize contaminating organic crops.

Future outlook

In the polder, the pioneering members of BDEKO have, since the 1980s, made huge steps as far as organic crop production is concerned. The availability of enough land for farming, the presence of supporting research organisations, and the establishment of marketing channels for organic products have given Flevoland an advantage in the organic sector in the Netherlands. Although BDEKO only has 72 members at present, which represents about 6 percent of the arable crop and horticulture farmers in Flevoland, this farmer organisation is often seen as the official "spokesman" for this sector in this province. And although it is not an official member of the national mainstream farmer organisation (and they might never become members because of their conflicting interests as organic farmers) several members represent their organisation in working groups of this larger farmers' body.

Not many farmers in the Netherlands are making the transition to become organic producers these days, but this could suddenly change – depending on changes in political interests or official regulations, on new market opportunities, or even on increased pressure by community movements. In the case of renewed interest in organic farming, the vast knowledge and experience within BDEKO will be of great importance to other aspiring farmers.

Hans Peter Reinders. Former CBL project officer providing professional support to BDEKO. E-mail: hpreinders@hotmail.com

BDEKO can be contacted through CBL – *Centrum Biologische Landbouw*, Bronsweg 22, 8222 RB Lelystad, the Netherlands. E-mail: info@biologischelandbouw.org

This article is one of the results of the documentation exercise carried out in 2006, involving BDEKO farmers, the ILEIA editors and the author. The documentation methodology used is available on the LEISA website. Another result of this process was published in the Dutch magazine on organic agriculture, Ekoland.

Building FFS networks in East Africa

Arnoud R. Braun, James Robert Okoth, Habakkuk Khaamala and Godrick S. Khisa

The first Farmer Field School (FFS) networks emerged in Western Kenya in the year 2000 as a result of exchange visits and communication between farmers, facilitators and trainers of different Farmer Field Schools. Similar networks have subsequently emerged elsewhere in Kenya, Uganda and Tanzania. These FFS networks were formed by farmers who had graduated from a FFS. The main reason for their formation was that the graduates wanted to continue the dynamics generated by the FFS process: to build local institutions to ensure the continuation of farmer-led FFS, and benefit from becoming a larger voice in expressing their demands. To date, the FFS networks in East Africa support about 2000 FFSs with close to 50 000 direct beneficiaries.

The Farmer Field School approach was first introduced in East Africa in 1995 through a project of the Food and Agriculture Organisation in Western Kenya. Since then, several projects have been successfully implemented in the region using various different entry points, including issues such as integrated production and pest management, land and water management, self sustainability for refugee communities, integrated crop management of sweet potato, promotion of farmer innovations, livestock, social forestry and control of banana bacterial wilt. The main reason for the success of FFS in the region has been the involvement of farmers themselves in identifying their problems, and in selecting, testing and evaluating possible solutions.

Forming FFS networks

By design, the FFS approach is not intended for creating long-term organisations, but it has become apparent that after the season-long FFS process, most of the groups continue working together to address problems within their community. Whereas the season-long curriculum is developed around a technical component, other vital livelihood issues that affect the community are blended into the curriculum as special topics: HIV/AIDS issues, reproductive health care, nutrition, gender issues, malaria control, child immunisation, environmental control, basic financial management, simple credit management skills and farming as a business. This responsiveness to immediate community concerns has facilitated a transformation of the FFS to a popular community forum in which farmers discuss problems within their own local context and seek solutions with minimal external support. This development has been a fundamental factor in building farmers' confidence to determine their own destiny.

As the number of FFSs grew and alumni groups broadened their level of operation, new issues and challenges emerged that could not be solved effectively by the individual groups. As successive FFSs were established in the immediate neighbourhood of existing ones, there were frequent opportunities for interaction, and sharing of experiences among the different groups. As a result, innovations and the rich resources of indigenous knowledge could be shared faster. This also encouraged coordination within the cluster of FFSs, reducing the overall cost of implementation because the different FFSs are able to access inputs and market their produce in bulk.

Based on these experiences, the idea of FFS networks was developed further in 2001 during an East African farmers' forum held in Uganda that brought together close to 300 farmers from Kenya, Tanzania and Uganda. Since then, various FFS networks have been established in all three countries, bringing FFSs together within well-defined geographical boundaries such as sub-counties, divisions or districts.

Organisational setup

An FFS network draws its membership from all the FFSs within a given administrative boundary. Each FFS elects one member as their representative to the network at sub-county level. All FFS networks at sub-county level within a division are represented in the FFS network at divisional level, and FFS networks at this level choose their representatives in the district FFS network. All these networks usually have an elected core executive committee, comprising a chairperson, treasurer and secretary, and at least three working committees including the finance and planning committee, the loans committee and the market information service committee.

An individual FFS has a constitution, bye-laws and is registered as a community based organisation with the respective district community development office. Similarly, all FFS networks have a formal setup, which is important for recognition, safeguarding members' rights and is vital for arbitration purposes. The operations of the FFS networks are supported by the member FFSs through subscription fees and other sources of income, which include commissions on bulk sales, shares from members and profits from sale of farm inputs. However, these sources are often inadequate for the effective operation of the FFS networks and increasingly, many are also engaging in activities like agro-processing, produce trading and even operating village phone booths.

Marketing

Individual FFSs are capable of conducting their own business but they are generally too small to engage in meaningful negotiations compared to the networks that bring together more



The Bungoma Umbrella FFS Network shop.

than 25 FFSs. Still, the networks can only take advantage of their size if production among the member FFSs is co-ordinated. As business units, FFS networks are directly involved in the preseason planning and enterprise selection process to ensure some uniformity for collective marketing. Similarly, after establishing expected production levels, the networks initiate negotiations with potential buyers.

To ease co-ordination, and in order to take care of the diversity of interests among the member FFSs, commodity associations within FFS networks are emerging. One example is the Soroti District FFS network in Uganda, which is developing five associations for citrus, cereals, honey producers, root crops, and oil crops. These associations are not limited to FFS members only, but also accommodate other farmers as well.

In Kenya, the Kakamega District FFS network has pioneered access to the national market in Nairobi, particularly for sweet potatoes. Initially, the network attempted to sell fresh orange-fleshed sweet potatoes with limited success. However, training in how to add value to products, and certification through the Kenya Agricultural Research Institute has enabled them to find a market for dried orange-fleshed sweet potato chips at a large national flour producer offering higher prices for the processed product than for the fresh produce. This network is also looking for diversification opportunities with cash crops and has currently entered into a contract with a commercial company to grow and supply chili peppers. A survey for potential national market opportunities for passion fruit, moringa (Moringa oleifera) and chili peppers is also under way. This network realised that as a community based organisation, its business opportunities were limited and they could not access other, more lucrative markets. As a consequence they have now opted to register as a Limited Liability Company.

Information brokerage

Market information in the rural areas of East Africa is so poor, that under the traditional setting, distrust is widespread as everybody cheats everybody along the marketing chain. Farmer families in this region have an impressive set of skills and they are capable and willing to intensify and improve their agricultural production if it allows them to earn the money they need. Most FFSs are not in a position to provide their members with better access to markets and reliable information about prices, product quality or market conditions because they are based in remote rural settings with limited contact to potential markets. Realising this, the FFS networks increasingly provide basic market information like market opportunities, prices and volumes required to their member FFSs. This initiative has also been boosted by an IFAD-supported programme, the Linking Local Learners on demand-driven services, which started in 2004 in Kenya, Uganda and Tanzania. The methodology uses the internet to support farmer groups' action learning activities. In this way, groups that are separated by large distances can share their experiences. Action learning, or learning-by-doing, provides farmer groups with practical experiences in trying out new technologies or ways of working. Sharing these experiences using the internet learning support tools stimulates new thinking and quickens the spread of effective locally relevant practices.

As a result of the Linking Local Learners initiative, all FFS networks in Uganda and Kenya have a functional market information service as well as a joint e-mail address. Although internet facilities are still limited in these countries, at least the towns within the region have internet kiosks while some of the FFS networks are looking at running such a service as a potential future business.

Capacity building

All farmers who are members of a FFS are eligible for any position within the FFS network leadership structure. As a consequence, its leadership may have limited formal education. The increasing responsibilities of the FFS networks as the size and complexity of their operation grows, poses capacity challenges that have to be dealt with. Therefore, the current focus of support to the FFS movement in the region is building the necessary managerial capacity and the development of a system that can be managed by the network leadership with minimal external assistance. The curriculum at the FFS level is also progressively adapted to include issues such as farming as a business, simple financial management, marketing aspects, leadership skills, and saving and credit. In Uganda, two separate manuals, a "Facilitators' Guide" and a FFS network "Operational Manual" addressing these issues have been developed together with facilitators and members of the FFS networks, and are currently being field tested. Experience has shown that the use of resident facilitators, and especially farmer facilitators, has increased the ownership of the process.

Way forward

With modest budgets, FFS programmes in East Africa have successfully shown that FFS networks are an effective way of organising and empowering smallholder farmers with common interests, and increasing their access to markets. However, mechanisms for facilitating market opportunities are still weak within FFS networks. As these networks develop and take on more complex initiatives, there is a need for more attention to capacity building in the fields of financial management, marketing, standards and quality, and use of information and communication tools. A pool of competent and innovative facilitators and mentors should be in place to ensure sustainability of the process. More investments in training and equipping the FFS networks with the relevant information and communication technology will bridge the information gap and enhance the diversification of business opportunities and improve efficiency of transactions. Better documentation of the lessons learned will also be necessary for scaling-up the process of building FFS networks. Lastly, the FFSs have triggered an increasing need for credit facilities in the rural areas of East Africa. The potential for investments has not been fully exploited and farmers will require external financial means to intensify their operations in order to be able to move away from poverty. In this context, a statement from a Kenyan taxi driver is illustrative: "You need money to make money"!

Arnoud R. Braun. Farmer Field School Foundation, Simon Vestdijkstraat 14, 6708 NW Wageningen, The Netherlands. E-mail: arnoud.braun@farmerfieldschool.net

James Robert Okoth. FAO/IFAD FFS Project, PO Box 363, Soroti, Uganda. E-mail: james.okoth@fao.org

Habakkuk Khaamala. Kakamega FFS Network, PO Box 1490, Kakamega, Kenya. E-mail: hkhaamala@yahoo.co.uk

Godrick S. Khisa. FAO/IFAD FFS Project, PO Box 917, Kakamega, Kenya. E-mail: ffsproj@africaonline.co.ke

References

- Gallagher, K. 2003. Fundamental elements of a Farmer Field School. *LEISA Magazine*, Vol. 19, No. 1.

- KIT, Faida MaLi and IIRR. 2006. Farmer Field School Networks in Western Kenya. In: Chain empowerment: Supporting African farmers to develop markets. KIT, Faida MaLi and IIRR. Royal Tropical Institute, Amsterdam; Faida Market Link, Arusha; and International Institute of Rural Reconstruction, Nairobi, Kenya.
- Okoth, J. G. Khisa and J. Thomas. 2002. Towards a holistic Farmer field School

approach for East Africa. LEISA Magazine, Vol. 18, No. 3.

- Okoth, J., G. Khisa and J. Thomas. 2003. Towards self-financed Farmer Field Schools. *LEISA Magazine*, Vol. 19, No. 1.



In contrast to the conservation committees, the San Luis Watershed Management Association involves the population of the whole district.

From local committees to a district association

César Gonzales Alfaro

The district of San Luis is found in the high Andes, some 385 km north of Lima, Peru's capital. The whole district is at least 3800 metres above sea level and poverty is widespread. There is very limited access to basic services (electricity, drinking water), and almost half of the population is illiterate. In spite of the altitude, agriculture is the major activity of the district's inhabitants, mainly growing potatoes and other Andean tubers for consumption. Yields at this altitude have never been high, but during the last three decades the situation has become increasingly difficult. The division of community-owned lands, together with a considerable population growth rate, led to overgrazing and the disappearance of nearly all tree cover. Degradation of the natural resources is evident with the disappearance of the native forests, the local flora and fauna, and in the district's decreasing productivity.

The Ministry of Agriculture's national soil conservation programme, known as PRONAMACHCS (*Programa Nacional de Manejo de Cuencas Hidrográficas y Conservación de Suelos*), started working in San Luis in 1996. They began by setting up a number of "conservation committees", being groups of farmers that the programme could work together with on soil conservation and other natural resource management issues. A committee was set up in every village in the district, and generally composed of 20 to 30 families. Responding to PRONAMACHCS' initiatives, these village committees built terraces and established agroforestry systems. Each committee worked on and around its village.

Trying to widen their impact, the leaders of three of these village committees proposed forming larger groups, to be able to work at district level. The original idea was to set up two groups, one in the upper part of the district and another in the lower part, considering the district as one watershed. Eventually one single group was formed by the leaders of all the village committees. Its task was to support the village level committees, organising regular meetings and monitoring and evaluating their activities. This district level group was also meant to look at common problems and to help identify solutions. In practice, however, its main role was that of an intermediary between PRONAMACHCS and the village committees: requesting money or inputs for a specific committee, or simply co-ordinating the regular visits to every village.

The organisation of a farmers' association

In 1998, with funds from the World Bank and the national government, PRONAMACHCS started implementing a new natural resource management project in different parts of Peru's highlands. Together with five other districts, San Luis was chosen as a pilot area with the objective of "developing a participatory approach to natural resource management". Focusing on participatory planning processes and on the generation of sitespecific technologies, this project aims to increase productivity and contribute to the eradication of poverty. One of the advantages of working in San Luis was that farmers had already tried working together through the formation of the village committees and through the larger district group. Recognising the limitations this larger group had had, its members agreed on the advantages which this new project would bring. Forming an effective association would help with the implementation of the new project, but it would also serve their own interests, representing everybody in the district.

The project's staff started by identifying the existing committees, organisations and institutions in the 19 villages of the district. General meetings were held in each village, identifying the main difficulties so as to prioritise future actions. These meetings were also meant to present the idea of forming a larger association, and to see the villagers' interest and commitment. After several months, leaders of 16 villages formed the San Luis Watershed Management Association, immediately approving its statutes and electing its representatives. It was officially registered in October 2002.

At the moment, the Association has a small office in the district's capital, where formal and informal meetings are held every week. Village representatives, as well as farmers or representatives of other institutions, are welcome every Thursday. General assemblies are held every three months, where the Association's directors present all the activities implemented and all the results achieved. One of the issues discussed regularly is the use of the Association's funds. Every village agreed to pay a monthly fee of 50 *soles* (approximately US\$ 15), which is used for the Association's regular expenses (office costs, or trips outside the district).

Four years on

The first difficulty faced was trying to involve all the villages in the district. This was especially relevant as the Association considers the district to be one watershed with interrelated problems, and not a set of disconnected villages or communities. Three villages decided not to join for several reasons: in one case it was because villagers do not own the land they work on (as that area was not covered by the 1969 Land Reform Act), in another because the village is too close to the district's capital and farming is not the villagers' main activity. Later on, two other villages decided to stop paying their fees, and were therefore excluded from participating any further. Another difficulty which still exists today is that of reaching consensus or having all the different representatives agreeing on one particular issue. This was especially clear when they were drafting the Association's statutes, when some farmers found it easier to express their opinions than others. Similar problems have been seen in general meetings, when participants are reminded to look at the interests and needs of the district as a whole, and not at the situation of a particular village.

In contrast to the earlier village committees, the Association has always been keen to represent the whole district and all stakeholders in its decisions and actions. Even though some villages are not involved, this idea has gained ground by assigning responsibilities to the representatives of all villages, thus "covering" the whole district. Another positive step has been to invite other institutions present in the area to meetings and discussions: the schools and the educational authorities, the church, the political authorities and even the police. Their participation has been active, leading to interesting results. It has been more difficult to achieve representativeness at the village level, as farmers in some of the villages (especially in those with a very strong village committee) felt that their representative was not doing a proper job, or that, coming from the committee but not having been chosen by the villagers, he was not really representing them at all. Democratic elections at the village level have therefore also been promoted, trying to ensure that the Association does not only reflect the interests of the local committee or of those better linked to the Ministry of Agriculture's project.

The project's extension officers have been active in promoting the need for a strong Association, and in providing specific training for this. During the first year, a thorough training programme was implemented, with courses in basic administration and financial management. According to the farmers, one of the most interesting aspects was that these courses were not centred on the activities or specific objectives of the project, but rather on the needs of the Association itself. They also recognised the fact that these courses were open, encouraging the participation of all villagers and not just the leaders. The authorities and other institutions were invited to participate in courses, and this was seen as a positive way of presenting their ideas and interests, contributing to identifying the Association's activities, and defining their own role in them. The main difficulty has been the participation of women and of illiterate farmers, a challenge which is recognised by the Association's leaders.

Results and further challenges

One of the most interesting recognitions of all these efforts came at the end of 2002, when the provincial government invited the Association to participate in the *Mesa de Concertación Provincial*, the body that represents all the institutions and organisations in the province, aiming at concerted actions towards development. The farmers of San Luis presented their point of view in relation to the plans drafted and carried out in the whole province. Recognising the importance of improving the way natural resources are managed in this district, discussions in the *Mesa* convinced the regional authorities to assign 54 000 *soles* (approximately US\$ 17 000) for a reforestation project in San Luis.

Active participation by the Association's leaders has also led to other concrete results. Negotiations with the representatives of the Ministry of Agriculture led to the construction of a 2000 m³ reservoir, benefiting 285 families. Additional funding was also secured from the Ministry of Agriculture, the local municipality and the church for small scale production projects (trout production, a bakery, guinea-pig modules) run by different villages. An agreement was signed with the representative of the national government and the police, aimed at preventing forest fires and protecting the district's resources. In addition, the Association was able to persuade the education authorities to hire two extra teachers for the local schools, and convinced other stakeholders of the importance of organising regular production fairs, where farmers have been able to sell and exchange their products.

After several years of working together, farmers in San Luis recognise the importance of managing their resources so as to ensure sustainable yields. Though the work of the village level committees showed some results at the village level, the work of the Association has convinced its members of the advantages of working together at a higher level, and with a longer-term perspective in mind. Positive results have motivated the Association to think beyond natural resource management issues, and discussions have already taken place about the need to work together around organic production, marketing and commercialisation of local production, and even around health and education issues.

Further capacity building courses are needed. A good indicator of the Association's success, however, is that it is not only participating in PRONAMACHCS' courses, or accepting their invitations, but that they recognise their own needs for capacity building, and are now actively requesting various trainings.

César Gonzales Alfaro. Co-ordinator, PRONAMACHCS, Agencia Zonal C.F. Fitzcarrald, Ancash. Pasaje Trinitarias 375, Nicrupampa, Huaraz, Peru. E-mail: cgonzales@hotmail.com

Traditional farmers' groups supporting sustainable farming

Mihin Dollo

Traditional farmers' groups can play a pivotal role in achieving and maintaining sustainable production in a specific agroecosystem. Arunachal Pradesh, a state in the extreme north-east of India (bordering Bhutan to the west, Tibet to the north and Myanmar to the east), has great ethno-cultural diversity, with 26 major and 110 minor/sub-tribes. The region is well-known for its rich eco-cultural heritage, as well as the wealth of traditional ecological knowledge amongst farmers. As agriculture is the main livelihood activity in the region, it is vital that the production systems are managed efficiently. The traditional farmers' groups of the Apatani people, in the Apatani Valley in the central western part of Arunachal Himalayas, have been successfully managing their natural resources for many years. However, in recent times, with the youth migrating in search of jobs, and other labourers coming in, many of these traditions, practices and knowledge are in danger of being diluted or lost.

When local knowledge and practices developed over centuries are shared in farmers' groups who work on the land together, it clearly supports sustainable agro-ecosystem management in this region. The Apatani are known for their system of rice and fish cultivation in the valley, which produces enough rice to export from the region after meeting local needs. This is a highly evolved indigenous farming system, the energy and economic efficiency of which is very high, partly due to effective recycling of organic wastes and crop residues.

As part of a wider research effort into this little studied region, the G.B. Pant Institute of Himalayan Environment and Development set out to document, validate and revitalise traditional knowledge in relation to sustainable agriculture across the Arunachal Himalayas. The main objectives of the study, carried out between December 2004 and July 2006, were to examine the different farmers' groups in three villages in the Apatani valley, their nature of association, their role in agroecosystem management and the changes they are facing. Group discussions among different age classes of the Apatani were held, involving both men and women; special attention was paid to older farmers in order to understand the exact nature and history of traditional farmers' groups.

Farmers' groups for sustainable management

The Apatani have different types of traditional farmers' groups, which have evolved over the years. There are no written records, so it is impossible to trace the exact history and development of the groups. The traditional agro-ecosystems are intricately linked with nature, and are well-fitted to local environmental conditions and cultural needs. The Apatani mainly follow the Donyi-Polo religion, believing that the sun and moon are the supreme gods that bless the community. They are Indo-Mongoloids and speak Tibeto-Burmese languages. They have different taboos and customs to protect their environment: for example, hunting of animals and tapping of forest products are strictly prohibited during major ritual ceremonies. They protect flora and fauna, such as *Castanopsis* and *Ficus* trees, cane, bamboo, one species of monkey and a species of fish



Maintenance of the traditional irrigation system is most effectively done together.

(Schizotorax sp.) which is believed to be sacred and is used in major ritual ceremonies. They maintain reeds (*Phragmites karka*) and *Houttuynia cordata* (the chameleon plant) along the river bank and agricultural bunds, whose roots check soil erosion. *Phragmites* is only harvested for traditional mat making and indigenous salt preparation, while *Houttuynia* is only used either for ethno-medicinal purposes or as a vegetable. These traditional beliefs and practices help to maintain ecological processes and so contribute to the management of the environment and agro-ecosystems.

These agro-ecosystems are sustainable, self-sufficient and efficient due to strong organisations and sharing of such ecological knowledge among farmers, which has traditionally been transmitted orally from generation to generation. Indigenous classification of agricultural land use into seven categories for efficient land management, producing enough to sustain the population, is an example of innovative ecological design by these farmer groups. Traditional wisdom on crop-soil interaction, ethno-pedology, nutrient management, and soil and water conservation are some examples of ecological knowledge which supports the sustainable production system as it has evolved over the decades, and which cannot be managed by individuals.

The Apatani have eight different types of informal farmer organisations (Table 1), and each group has their own task and workload. The groups are valued differently by the community. The *Bogo*, for example, is seen as the most important group as there are limited water sources for irrigation in the Apatani valley, and good water management is essential for efficient production in the rice-fish system.

The farmers know that traditional practices are very important for maintaining sustainable production systems, and that farmers' groups are the foundations of these practices. Most farmers recognise that, without farmers' groups, agroecosystem management will easily weaken, and the technical ecological knowledge which supports it will quickly erode: farmers think that the groups are effective in managing the agro-ecosystems. Except for financial support, particularly for erosion control, fencing and drainage maintenance, the farmers do not receive or seek any technological interventions or other help from any outside agencies. Outside experts have highlighted the Apatani rice-fish culture system as one of the most efficient crop production systems, encouraging the Apatani farmers to continue their traditional practices.

As can be seen in the table, some groups have a distinct manager who holds the position for 1-3 years, while others (group numbers 4, 5, 6 and 7) have managers who hold the position for only one season. In all cases, leaders are selected by the group, from within the group. If a group member does not turn up for group work, the traditional norm is that if the individual is ill he or she will be excused, or else will need to hire a labourer or bear a penalty.

Some groups also have a finance secretary or *Passer Binee* who collects any money and maintains the farmer groups' accounts. The cash maintained by the organisation is normally used for purchasing the materials needed to carry out community tasks which are not available naturally (e.g., nails for fencing), as well as drinks and lunch. Loans are also available within the group or community, with an interest rate of three percent per month. The amount of the loan depends on the security (agricultural field, bamboo garden or homestead) provided by the borrower. This not only helps those in need, but also helps to generate income for community work. Although the traditional village council or *Bulyang* is the supreme authority in Apatani community, it has a limited role in farmers' groups; only occasionally it may assist in case of dispute.

Most of these farmers' groups are permanent, based around communal needs and mutual reliance. In this way they also help to maintain social harmony and cohesiveness. Three examples of the collective management of natural resources follow.

Traditional irrigation system

The Apatani system of irrigation is more than a century old, and the practice has been worked on and perfected through community involvement and equitable sharing of water resources. Water is tapped near the forest on the foothills of the valley, and is channelled through to main canals on either side of the valley to supply the agricultural land. The water is then distributed through numerous small canals in such a way that every plot of land has sufficient water for rice and fish culture. The surplus water is drained back to the main canal without outflow of any organic matter, or soil loss. The agricultural fields have been made along the elevational gradients. At higher elevations in the valley, fields are connected with small diameter bamboo pipes, where the volume of water intake is less. Larger diameter pine pipes are used at the lower ends of the valley where the volume of water is more. These irrigation systems are managed by the traditional farmers' groups led by Bogo Ahtoh. The vision of these groups is reflected in the management and sharing of water in the community, which recognises that water is the common concern which binds the group. Since it is the most important factor in rice cultivation, the farmers rely on it completely, and therefore equal distribution has ensured the concept of collective survival and social cohesiveness within the farmers' groups. Each plot owner is bound to provide equal outflow of water to the neighbouring plots and the traditional village council (Bulyang) ensures that such regulations are not violated. Each year canal repairs are done through collective participation with one person from each household providing labour.

Field protection

The Apatani have integrated animal husbandry into their farming systems, and they rear cattle and mithun (*Bos frontalis*, a semi-domesticated animal, also known as Indian bison). While this is positive, many fields are at risk from both

domestic and wild animals, as the land is close to the forest. To protect the crops from damage, farmers' groups fence the fields with bamboo, timber and cane. For easier and efficient management of fencing, traditional farmers have organised a group known as *Sulu-sikhii* led by *Sulu Kagenee*. This group is led by a man, as it requires heavy work which includes collecting raw materials from forest. The fencing is repaired every year in late November. During this activity, every household involved contributes a mug of rice/millet (300 g) for lunch, and cane, bamboo and timber for fencing. Fences are made with *Salix sikkimensis* (a type of willow), *Pyrus pashia* (or Indian wild pear) and *Ligustrum* sp. (known as privet, a common species used for hedges), which are all more durable.

Field preparation and crop harvesting

Maintenance of footpaths, preparation of fields and nurseries cannot be done alone, so a group is formed to carry out these activities and combine efforts. Those with fields near a footpath form a group to maintain it. It has been observed that smaller informal groups come together for weeding, field preparation, transplantation and crop harvesting. In these activities, women have the dominant role, although the men have the responsibility for bund construction and crop threshing. The harvesting of the crops is done jointly, where the women cut the spikes and threshing is done by the men.

Transition: challenges and options

Traditional farmers' groups are now in a transitional period, mainly due to outside influences. The Apatani are believed to be a very conservative community, and now some of the traditional agro-ecosystem management practices are on the verge of extinction due to the integration of hired labour forces from outside. Nowadays, it is common for the youth to leave the communities in search of jobs, which creates shortages of traditional labour. In addition, outsider labour forces are increasingly coming to the area for timber sawing, stone mining and the harvesting of non-timber forest products. Due to sociocultural, climatic and physiographic differences, these people have different management techniques, which often dilute the Apatani traditional practices. The Apatani will still need labour from outside, but they are trying to cope with the emerging situation by being aware that their system is very efficient yet delicate, and realising the need to preserve their time-tested knowledge, by documenting it for future generations.

Outside influences have affected various aspects of farming systems management. For example, barbed wire fencing has been used recently, whereas bio-fencing is preferred as it is more ecofriendly and efficient. In the Apatani valley, live herbs and shrubs have traditionally been used for erosion control on the banks of the stream, but this has disappeared slowly over the years, which is now affecting the permanent flood control technique. Traditional soil and water conservation techniques have been replaced by modern methods using concrete constructions, and the bamboo and wooden pipes used in irrigation water supply have been replaced by lead or plastic materials. Moreover, agrobiodiversity has declined over the years as government agencies have supplied high yielding varieties of seed, which means that fewer crop combinations were possible as there was less choice of crops. In the 1990s, farmers accepted ideas such as high yielding varieties, inorganic fertilizer, or fruit farming. However, more recently farmers have realised that the yield of these "high yielding varieties" is comparatively less than traditional varieties, and they also need a lot of external inputs (fertilizers). Now, farmers have discarded the idea of high yielding varieties and are turning back to traditional varieties, which are more suitable to local conditions.

Table 1. Types and working nature of traditional farmers' groups of the Apatani tribe.

| Farmers' groups | Description | Group Manager | Task |
|-----------------|---|---------------------------------------|--|
| Bogo | A farmer group sharing the common water sources. The group manager leads all the activities. Post can be held for 1-3 years and are selected from within the group. Group size is between three and 600 households depending on village size. | <i>Bogo Ahtoh</i> (male) | Construction and maintenance of water supply system and regulation of the efficient sharing of water among the group . |
| Aji Lenda | A group which has their fields in the same area. The group manager leads all the activities. Tenure is normally for one year only. Group size is 50-350 households. | <i>Lenda Kagenee</i> (male⁄female) | Construction and maintenance of foot-paths, to allow access to and from fields. |
| Sulu-sikhii | A group which has their fields in the same area. The group manager leads all the activities. Tenure is normally for one year only. Group size is 50-350 households. | <i>Sulu Kagenee</i> (male) | Construction and maintenance of fencing to protect the agricultural fields from domestic and wild animals. |
| Tanser Patang | Groups organised during field preparation and weeding. Group size is 5-15 households. | <i>Patang Ahtoh</i> (female) | Field and nursery preparation, seed sowing, and weeding. |
| Konchi Patang | This groups works in the morning between 5 am to 8 am. Group size is 5-10 households. | <i>Patang Ahtoh</i> (female) | Field preparation, transplantation and weeding. |
| Halying Patang | This group shares labour during seedling transplantation. Group size is 5-15 households. | <i>Patang Ahtoh</i> (female) | Transplantation of seedlings, particularly rice and millet. |
| Enthee Patang | This group forms to share labour during crop harvesting. Group size is 8-12 households | Patang Ahtoh (male/female) | Harvesting and carrying of harvests. |
| Bijee Lenda | A group having bamboo garden at same locality. Here also group manager leads all the activities. Tenure is normally for one year only. Group size is 70-300 households. | <i>Lenda Kagenee</i> (male) | Construction and maintenance of foot-path, for carrying bamboo, timber and fuelwood. |

Realising the efficiency and importance of traditional management practices, the Apatani are now discussing how to preserve traditional knowledge and practices. For example in Tajang, one of the villages in the valley, many members of the farmers' groups also take part in the Tajang Village Development Committee, which has taken an active role in controlling the loss of ecological knowledge, and preserving traditional management practices. They have recently adopted a resolution that agricultural land shall not be converted into any other land use; and unsustainable extraction of natural resources will be stopped (such as banning sand and stone mining along the irrigation sources, which they believe are reducing agricultural yields). Penalties will also be imposed where traditional rituals and practices are violated, according to existing local norms (dapo). Although the Apatani understand the importance of traditional practices, greater awareness is needed in general as most of the traditional ecological knowledge and management practices are only passed on orally, and are not documented. Field research of traditional knowledge in Arunachal Himalayas, lasting more than six years, has shown that the Apatani tribe is one of the most efficient resource managers, yet sustainability is their major concern.

Towards the future

The traditional groups are considered to be viable, and although they will still need external labour, the groups themselves believe they can cope with the changing circumstances. Traditional agricultural systems may benefit from the use of newer, appropriate technologies based on farmer's innovative agro-ecological knowledge, but it is important to document and revitalise this knowledge which is quickly disappearing as farmers' groups change, and there is more intervention in indigenous communities. These efforts, however, will only succeed if the contributions of traditional communities are valued, and they are considered as rightful partners in technology development and dissemination. The Apatani people, being conservative in nature and having highly evolved farmers' groups, can be a positive force for the revitalisation of innovative agro-ecological knowledge in the Arunachal Himalayas and can be used as a model for such activities.

Mihin Dollo. G.B. Pant Institute of Himalayan Environment and Development. North East Unit, Vivek Vihar, Itanagar-791113, India. E-mail: mihindollo@gmail.com

References

 Dollo, M. and D. Choudhury, 2006. Eco-cultural heritage of Arunachal Pradesh.
 In: Rajeshwari Tondon (ed.), Interpreting the heritage of North-East. Lodhi Estate, New Delhi, India.

- Dollo M., S. Chaudhury and R.C. Sundriyal, 2006. Traditional farming and land tenure systems in West Kameng district, Arunachal Pradesh. In: Ramakrishnan, P.S., K.G Sexena and K.S. Rao (eds.), Shifting agriculture and sustainable development of North-Eastern India. UNESCO-MAB series, Oxford & IBH, New Delhi, India. Gadgil, M., and F. Berkes, 1991. Traditional resources management systems. *Resource management and Optimization* 8 (3-4):127–141.

DeWalt, B.R., 1994. Using indigenous knowledge to improve agriculture and natural resource management. *Human Organization* 53(2): 123-131.
 P.S. Ramakrishnan and A. Kumar, 1990. Energy Flow through an Apatani Village

Ecosystem of Arunachal Pradesh in Northeast India. Human Ecology, Vol. 18, no. 3.

Acknowledgements

The author is thankful to the Director of the G.B. Pant Institute of Himalayan Environment & Development (GBPIHED), Almora, India, for providing the facilities; to the Scientist In-charge of the NE Unit, Itanagar, India; and to Dr. D. Choudhury, ICIMOD, Nepal, for guidance. Thanks are also due to the farming communities of Apatani for their co-operation during information gathering and data collection.

The Malabing Valley Multipurpose Co-operative

Cristina R. Salvosa

The Malabing valley is found in the northeastern part of the Sierra Madre Corridor, in Nueva Vizcaya, the Philippines. Although maize and rice are still its major crops, citrus production has intensified since its introduction in the early 1980s. The mild climate, rich soils and forests provide unique conditions for the cultivation of various species of citrus, covering more than a thousand hectares. Citrus production is now the major on-farm income source for the valley population, and it has also resulted in significant improvements in the community itself, bringing new infrastructure, facilities and services to a valley which was once inaccessible. Much of this has been a result of the Malabing Valley Multipurpose Co-operative.

The journey towards a co-operative

The co-operative traces its origin to April 1989, when a group of local professionals led by Alfonso C. Namuje Jr. decided to explore the available options to improve the socio-economic conditions in their respective communities. One of these options was getting farmers to work together in one way or another. This core group first organised a farmers' association at the valley level, while at the same time organising farmer groups in the six villages in the valley. They soon got assistance from the leaders of an existing co-operative (the Bambang Fruits and Vegetable Growers Co-operative), organising courses in co-operative matters and meetings with representatives of the different farmer groups and with potential members. They decided that for them, a co-operative was a better idea than a farmers' association.

The core group then participated in a special training course to widen their knowledge in co-operative leadership and management, and later invited all farmers in the six villages to attend a co-operative Pre-Membership Education Seminar. The interest shown by all participants led to the creation of the co-operative. With 48 members, the Malabing Valley Multipurpose Co-operative was formally registered in March 1990, with the specific purpose of extending farm input loans, and primarily aiming at the production of citrus.

Work at first was difficult: the co-operative had limited capital, and as roads were bad and transport facilities limited, it was difficult to get a good price for the produce. As the production of citrus requires relatively high investments, the co-operative requested a production loan from a government financing institution to increase their working capital. This step proved to be very positive, as more farmers were then encouraged to join. Periodic courses and seminars were organised, while officers and management staff were sent to seminars on co-operative management and citrus production technologies.

After 16 years, the co-operative has now 389 members. The majority of its assets are invested in infrastructure, transport facilities, machinery and equipment for post harvest handling. The co-operative has made its mark in catalysing development within the valley: its linkages with the local government units and other non-government organisations helped it to improve the valley's road network. To be accessible to members and potential clients, the co-operative has strategically located its marketing office in the business capital of Nueva Vizcaya. A trading post has also been established for members to display and sell their products.

Towards a more sustainable agriculture

The Malabing Valley Multipurpose Co-operative has ventured into non-traditional capacity building activities as a means to organise farmers in the valley, but also as a way to protect its natural resources. The co-operative has joined forces with some NGOs and the government in preparing a land use framework for a community-based forest management programme aimed at preventing uncontrolled conversion of open access forest lands into citrus and other agricultural activities.

The production system promoted is linked with the *muyong*, an indigenous system of the Ifugao people, where natural forests are managed as woodlots. These serve as sources of fuel and timber for local use and for the protection of the micro-watersheds. The co-operative takes an active part in the promotion of the *muyong* system to ensure that commercial interests will not result in the breakdown of the agroecosystem. The result has been encouraging as closed canopy conditions in the natural forest have reclaimed previously open canopy areas. The practice of swidden farming, commonly seen in the nearby forests, has been reduced. Citrus production is promoted because of its economic potential but also as a sustainable option. Around 800 families in the Malabing valley are now engaged in citrus farming, most of them are members of the co-operative. The use of organic fertilizers is fast replacing the application of chemical fertilizers, although the use of pesticides and herbicides have yet to be significantly curbed.

Some lessons learnt

The creation and development of the Malabing co-operative shows a number of key lessons in assisted self-reliance. The co-operative initiated activities to draw attention to the development needs of the community, venturing into high value agriculture, which ultimately paid off. Among the lessons learnt during these 16 years, we can mention that:

- Forming a shared vision is an essential first step in genuine cooperative building. A strong sense of "community ownership" was built from the very beginning, something that enabled the co-operative to mobilise and sustain strong community participation;
- Co-operatives can facilitate further community development. The strong institutional leadership of the co-operative enabled it to expand its mandate to bring vital social and economic services to the community by establishing linkages and partnership with government and non-government organisations;
- There needs to be a balance between traditional leadership and professional management. The strong indigenous culture of the community was a source of reliable traditional leaders, who wielded respect and authority. However, the elders saw the wisdom of encouraging the young professionals to take on leadership roles. As such, the co-operative is managed competently by its group of college-educated young people, who saw the promise of better life by going back to their community.

At the same time, this experience has shown that proper management of the natural resources is critical for a sustainable citrus-based production system, balancing income-generating activities with the conservation of the forest ecosystem.

Cristina R. Salvosa. Assistant Professor, Nueva Vizcaya State University, Bayombong, Nueva Vizcaya, the Philippines. E-mail: crsalvosa@yahoo.com

Farmer organisation and market access

Jon Hellin, Mark Lundy and Madelon Meijer

Farmer organisation has been identified as a key factor in enhancing farmers' access to markets. In response, policy makers and development practitioners have focused on supporting small scale producers to associate, collaborate and coordinate in order to achieve economies of scale in their transactions with input suppliers and buyers. The enthusiasm for farmer organisations has, at times, obscured the fact that establishing viable organisations is not a simple process. It is often a challenge to establish the rules on which farmer organisations are based and to monitor and enforce compliance with these rules. In some cases the establishment of farmer organisations incurs transaction costs which, if too high, may mean that farmers are better off not organising. Furthermore, successful association often requires management and entrepreneurial skills; "soft" assets that small producers may lack, whilst contracting a professional management team is costly.

There is, hence, a need to examine what we mean by farmer organisations and to understand better when farmer organisations make sense, when they do not and how they can best be established and maintained. More information is needed on: the most appropriate types of organisation if any; whether the public and/or private sector is best placed to support their formation; and the conditions necessary for ensuring their economic viability. We explore these issues in the context of high-value vegetables in Honduras and El Salvador, and commodity maize in Mexico.

Vegetables in Central America

In Central America, the trade in vegetables has increased substantially since the early 1980s due to a combination of urbanisation and increasing incomes. Development organisations have promoted the growth in production and marketing of higher value crops in hillside environments in order to complement more traditional smallholder maize and beans production systems. From 2004-2005, the International Center for Tropical Agriculture (CIAT), the Food and Agricultural Organization of the United Nations (FAO), the Agropyme project of Swisscontact and Catholic Relief Services (CRS) looked at strategies to facilitate the participation of smallholder producers in vegetable supply chains linked to local supermarkets: one area of work was on the role of farmer organisations. Three formal producer organisations in El Salvador and two in Honduras were investigated. Various methods were used to analyse the history of the value chains; the relationships between the chain actors (farmers, intermediaries and supermarkets); and the financial health and viability of the farmer organisations.

COHORSIL is a farmer co-operative in Honduras that was founded in 1980 and traditionally focused on coffee production, processing and marketing. Faced with declining prices for coffee, the co-operative sought to diversify its activities. With Swiss funding, they branched into the production and marketing of fresh vegetables. COHORSIL developed a business plan and ensured that its members had access to seedlings produced in greenhouses, warehouse and packaging facilities, and marketing services. The co-operative directly supplies these services for a fee and has also established links with private service providers who offer specialised services such as soil analysis, technical assistance, and the design and installation of drip irrigation



Farmers in El Salvador install micro-tunnels (made of plastic and curved wood) to help control pests and diseases in the early stages of crop development of high value vegetables.

systems. Many of the co-operative members are able to produce vegetables that meet the quality demands of local supermarkets.

This sounds like a success story and in many ways it is. However, the investigating team discovered that farmer organisations capture a very small percentage of the final price paid by consumers: 3 percent in Honduras, and 6 percent in El Salvador. The combination of relatively low volumes of product plus low margins means that many of the farmer organisations in the study require ongoing subsidies to cover operational costs despite significant support from donor and development agencies over long periods of time.

If these subsidies provided market access to a large percentage of smallholders, there would be a case for continuing public sector or donor support. However this is not happening: despite significant investments of time and financial resources, existing producer organisations in both countries make up fewer than 5 percent of total horticultural producers in each country. Possible reasons for the small numbers of farmer organisations include: limited business skills within existing producer organisations; organisational models which are too costly in terms of time and financial resources for linking smallholders to dynamic markets; and uncertainty about the benefits that smallholders can expect from the supermarket channel.

The study raises the question as to whether there are alternative forms for farmer organisation that might achieve similar social and economic returns for farmers at a lower overall cost. A promising avenue to explore is the lead farmer model currently under development by the private sector. The model is based on organic organisational structures that grow around producers who have shown the ability to meet supermarket quality and quantity demands. Supermarkets encourage lead farmers to organise and support their neighbours to meet these demands, with little investment beyond the incentive provided by market opportunities. The initial time and financial investment in lead farmer models is significantly lower than models promoted by development agencies. Another issue is whether the benefits of farmer organisation come from improved access to inputs such as seed and credit rather than output value chains. Work in Mexico sheds some light on this.

Maize in Mexico

Maize has been cultivated for approximately 6000 years in Mexico and is of immense economic and cultural importance to millions of smallholder producers, especially in the south of the country. Since 2005, the International Maize and Wheat Improvement Center (CIMMYT) and FAO have been involved in work looking at the impact of markets on farmer management of maize in the southern state of Chiapas.

In contrast to the case of vegetables in Central America, the authors found no examples of maize farmers working together to access maize grain markets. Farmers report that there are no advantages to establishing a farmer organisation to sell grain. This is partly because the government fixes the grain price that farmers receive and farmers receive the same price irrespective of the type of maize that they grow. Furthermore, the transaction costs associated with market access are relatively low: there are so many buyers and sellers that farmer organisations would have little impact on prices, for example. There are, however, examples of where producers have organised themselves to access inputs such as seed, fertilizer and credit. These informal, and at times short-lived farmer organisations, have been encouraged by government agricultural support programmes which provide inputs. In general, maize farmers have formed organisations for two reasons: to take advantage of subsidised extension advice together with an associated agriculture technical package; and to access subsidised maize seed.

Since the mid 1990s, private extension agents known locally as *despachos* have provided technical assistance to smallholder farmers. *Despachos* do not work with individual farmers, so farmers have to organise themselves into groups. The *despachos* assist farmers to access credit which is provided at low interest rates. The credit is tied to a government-subsidised technical package that includes a set of inputs: fertilizers, pesticides, herbicides and seed. The *despachos* make money by selling this technical package to groups of farmers. The subsidised system worked well for a number of years but recently, maize has become less profitable, farmers have defaulted on their loans, and the banks are less interested in lending to farmer groups. The number of *despachos* has fallen since the mid-1990s and it remains unclear whether this public/private extension provision will continue.

However, there are other factors encouraging group formation. Farmers, for example, can get subsidised maize seed from the government. In 2006 this subsidy amounted to 300 Mexican *pesos* (US\$ 28) per bag of seed with a limit of two bags per farmer. Each bag contains enough seed to plant 1 hectare. Depending on the type of seed, the subsidy covers anything from 30-100 percent of the cost of the seed. In order to access the subsidy, farmers have to make a request to the Ministry of Rural Development. Demand outstrips supply and while in theory individual farmers can access the subsidy, farmers have a greater chance of receiving subsidised seed if they make the request as a group. The seed subsidy therefore encourages farmers to organise themselves.

Secondly, the seed distributors, representing various seed companies, much prefer working with groups of farmers as it reduces their transaction costs. As a result, farmer organisations may be able to negotiate better prices. The community of Roblada Grande illustrates the advantages of farmers selforganising when it comes to purchasing seed. In 2006 a group of farmers in Roblada Grande made a successful request to the Ministry for just over 800 bags of subsidised seed. The organisation decided to purchase seed of a high-yielding maize hybrid. Each bag of seed normally sells for 940 *pesos* (US\$ 88) a bag, but the farmers decided to buy seed from one distributor and managed to negotiate the price down to 860 *pesos*. With the subsidy, farmers ended up paying 560 *pesos* a bag. Furthermore, the seed distributor transported the seed to the community at no extra cost.

Farmer organisations and market access

These cases demonstrate that it is very rare for farmer organisations to self-organise on a formal as opposed to an informal basis: support is often needed in the establishment and continued performance of farmer organisations. In El Salvador and Honduras, farmer organisations secure a very small percentage of the final consumer price and low volumes of product plus low margins mean that ongoing subsidies are probably needed to cover operational costs. While the political climate over the last two decades has been hostile to subsidies, there is increasing recognition of the key roles that both the private and public sectors can play in contributing to agricultural development.

If we accept that there are grounds for "kick-starting" farmer organisations with public money, there remains a debate as to how this money should be targeted in ways that promote rather than crowd out private sector investment, and that allow the state to withdraw as economic growth proceeds. In any discussion about where public and private money should be directed there is a need to match farmer skills and managerial experience to different forms of farmer organisation. One reason why farmer organisations fail is because they are encouraged to over-reach themselves by development agencies who wish to improve farmers' access to markets but fail to recognise fully the constraints to achieving this through collective action. In some cases it is advisable to link farmers to specialised service providers rather than adding additional functions to overburdened farmer organisations.

Development agencies can play a very important role in facilitating farmer organisation development, especially in the early stages, but greater attention has to be directed to the questions of "farmer organisation for what purpose?" and "once we are organised, who can we partner with?" In terms of market access, our research suggested that the benefits of formal farmer organisation are more evident in the vegetable sector characterised by high transaction costs associated with market access. In the case of low-value commodity crops such as maize, it may not be in farmers' interests to organise themselves for market sales but farmer organisations may benefit from improved access to agricultural inputs and technological services. Furthermore, these benefits may be secured through informal or even short-lived organisations rather than more demanding formal ones.

Jon Hellin. Impact, Targetting and Assessment Unit, International Maize and Wheat Improvement Center, CIMMYT. E-mail: j.hellin@cgiar.org

Mark Lundy. Senior Research Fellow with the rural Agro-enterprise Development Project, International Center for Tropical Agriculture, CIAT. E-mail: m.lundy@cgiar.org

Madelon Meijer. Associate Professional Officer, Food and Agricultural Organization of the United Nations (FAO).

References

-Miehlbradt, A.O. and M. McVay, 2005. From BDS to making markets work for the poor. International Labour Organization, Geneva, Switzerland.

-Stringfellow, R., J. Coulter, T. Lucey, C. McKone, and A. Hussain, 1997. Improving the access of smallholders to agricultural services in Sub-Saharan Africa: farmer cooperation and the role of the donor community. Natural Resource Perspectives, No. 20. Overseas Development Institute (ODI), London, U.K.

Organised for preserving local seed

Malamba Clement Mwangosi

Farmers in Bwipa, a remote village in the district of Ileje, in the southern Mbeya region of Tanzania, regularly grow maize, bananas, potatoes and upland rice. The maize seed most often planted in this area is a high yielding hybrid type, but is prone to disease and pest attacks. Compared to the local varieties, hybrid maize is less tasty and more expensive - not only because of the price of the seed, but also because of the fertilizer it requires. Furthermore, because it is a hybrid, farmers need to buy new seed every year, or yields drop drastically. This general situation became even more complicated in 2003, when the seeds were not available in sufficient quantities. This led to the formation of a self-help group with the specific objective of ensuring the availability of good quality seeds. It all started with one farmer -Mrs. Mattei- who, after finding it difficult to buy maize seed for several years running, decided to get hold of a few cobs of a local variety.



A group member proudly shows the maize and bean seeds he has stored.

Mrs. Mattei obtained a few maize cobs of the local variety known as *kobo* when she was visiting some relatives in Chunya, another district within the same region. In contrast to the hybrid maize, *kobo* maize matures early, is tastier, tolerates pests and diseases better, does not require the excessive use of fertilizers, and its seeds are readily available. More importantly, farmers can use the seed stored after the last season's harvest, and know that the performance or yield will not be affected. Farmers in Bwipa, however, had stopped growing *kobo* as its yields are lower than the hybrids. Taking these cobs home, Mrs. Mattei stored them and then sowed the seeds in her field. Despite the poor rains that season, she was able to harvest enough for her family, while her neighbours had a poor harvest. They realised, yet again, that hybrid seeds perform badly during poor rainfall seasons.

Forming a group

It was then that the idea of forming a seed conservation group was envisioned, following previous experiences with the formation of farmer groups in the region. As part of its extension services, the government had been promoting farmers' groups and organisations. Farmers in Bwipa decided to form a local group with the objective of preserving the seeds of local crop varieties. They started by setting up a common place where they could store the seeds of the crops grown in the region. Local varieties of maize, beans, finger millet, pumpkin, cucumber and many others, were initially stored in one of the group member's houses, who volunteered to keep the seeds on behalf of the whole group. After several discussion meetings, they decided to use various methods and types of storage structures, from clay pots and gourds to ceiling boards known as *dali*. These methods have been traditionally used in this region, although the introduction of modern gunny bags has made their use less common.

The group decided later that each member would bring seeds from different crops, they would exchange them, and they would each store some seeds. They would meet regularly to reflect on the state of their seed stores and to tell the other members if they knew of seeds from other localities which they could also consider storing. Available seeds would then be distributed among all. Most opted for a *dali* in their houses, constructing a ceiling board made of bamboo sticks, and storing their seeds there. The cooking fire underneath the *dali* releases smoke onto it, preventing the attack of insects and so protecting the seeds. Farmers also use the ashes from the kitchen fires as insect deterrents and seed preservatives. Seeds on these *dalis* are insect-free for as long as long as three years.

Building on achievements

Farmers in Bwipa feel that their seed group is still consolidating. Among the difficulties they have had they mention, for example, that some members have sold or consumed the seed they were storing, in response to particular problems. Discussions are underway as to the possible advantages of entrusting the whole local seeds store to one group member on a rotational basis. This remains to be seen.

However, the results of this group are already visible. Seeds which were stored for several months have already been sown and harvested. Although yields have not been high, especially when compared to the hybrid maize, their advantage lies in a secure harvest in uncertain conditions. Farmers also mention the advantages of greater seed diversity: the more types of seeds stored, the more diverse the production. The increased togetherness which is becoming apparent in the group will greatly assist in future innovativeness and in other ventures. For example, on the basis of their initial results, the group is now planning to embark on a savings and credit scheme, and incorporate other activities. More recently, the group was advised to register formally and join the regional farmers' network, thus being able to exchange their experience with other groups.

Malamba Clement Mwangosi. Ministry of Livestock Development / Ileje Farmers' Network. Box 175, Ileje, Mbeya, Tanzania. E-mail: mcmwangosi@yahoo.com



Ewes with their lambs grazing on lucerne at the author's farm in Grassmere.

A new vision for south east Marlborough, New Zealand

Doug Avery

New Zealand is commonly perceived as a lush green country covered with bush, grassland and beautiful snow-covered mountains. These images are real, but there are also significant areas that are very dry. Eastern Marlborough, in the north of New Zealand's South Island, is one of these dry grassland areas. It is shielded from the predominant westerly rain systems that cross the Tasman Sea by a chain of mountains known as the Southern Alps. Sheep farming started here 165 years ago when the early European settlers took advantage of the open grasslands. Our family began farming in the district 87 years ago when my grandfather purchased a farm. Today, I, along with my wife and eldest son, farm an area of 1100 hectares with sheep for meat and wool and cattle for beef and milk production.

We operate with an annual average rainfall of 520 mm but in 1997 we were struck by an exceptional drought. Sadly for us –and for the land– this continued until 2004. The drought was not persistent throughout those seven years, but we were never able to regain our momentum. For all the farmers in the area it was a crisis situation. Inevitably, to survive, we drew heavily on our natural capital, and our land paid severely for our survival. The dry north-facing hills were heavily degraded because of over-grazing by sheep and occasional natural fires.

Changes needed

The continuous drought saw most farmers in the area withdraw into themselves as every farming family battled to maintain their farming businesses. Many farming people had to find jobs offfarm to support their families, and farm work was done in the evening and at weekends. All were struggling in isolation and much voluntary help, which had always been so forthcoming, was no longer available. The community organisations which relied on this were badly affected. Many of the social structures in the area became unsupported, when they were actually needed most. About three years into the drought, we came to a point when it was vital to re-evaluate all of our farming systems if we really wanted to survive. A group of local farmers got together to look into alternative production technology as well as to try to stop the immense sheet erosion caused by the drought. As farmers, we knew we had a problem and we wanted to take ownership of it, but we needed help to find a solution.

In 1998, I learnt about feeding fresh alfalfa or lucerne (*Medicago sativa*) direct to sheep and cattle, at a seminar by a plant scientist from Lincoln University. This was of huge interest, because we already had about 80 hectares of lucerne but until then it was mostly turned into hay for feeding in winter. Since this crop was the only aspect of our traditional farming system that was working well in the trying conditions, we immediately began planting a much larger area of this wonderful, deep-rooting plant. We have gone on to achieve very good results with this new fodder producing and feeding system. Encouraged by these results, the group of farmers decided to do some trial work with salt bush (*Atriplex*), an indigenous fodder species.

It still took us until 2004, at someone's suggestion, to contact the New Zealand Landcare Trust for help (see Box). Their staff sat down with us and asked us how they could help. This was a new experience for us: here in New Zealand, there had been a tendency for problem solving by legislation. Unfortunately, much of this "fixing" has been passed down from, and by, people who have virtually no knowledge in the field of the problems, and even less knowledge of practical solutions. So it was, with the invaluable guidance of the Landcare Trust that our farmer group set about creating a science project to explore and demonstrate potential solutions to the problems experienced.

Our group

Our group is named the Starborough-Flaxbourne Soil Conservation Group. The group members are made up of farmers and their families, although most of the action is being done by men. The core committee is made up of eight people, but around 60 other farmers in the area have indicated their interest and attend field days as and when we have them. The area covered by us is about 100 000 hectares, but from the outset we decided to work with those farmers who were willing, and so some farmers in the area continue to farm using their old methods.

The Landcare movement

The Landcare movement is seen as a revolutionary process in land management, with neighbours working together to improve private and public lands. Small groups form to solve problems: soil erosion, degraded wetlands or riverbanks, or loss of biodiversity. These groups are voluntary and depend largely on their own funds. They learn from each other, and sometimes draw on government and non-governmental resources and services. This approach originated in Australia in the mid-1980s. Landcare is both a development strategy and a farmer-led social movement. As a development strategy, Landcare rapidly and inexpensively diffuses conservation farming technologies, agroforestry practices and other improved natural resource management systems among resource-poor farmers. As a social movement, it involves groups of people concerned about land degradation and interested in working together to improve the long-term health of the land. The Landcare movement has spread internationally, and regional networks have been established in South Africa, Kenya, Uganda, Germany, Iceland, Tanzania and elsewhere.

The three main principles of Landcare are: appropriate technologies, effective local community groups, and partnerships with governments and NGOs. Landcare groups respond to issues they consider locally important and solve problems in their own ways. In other words, Landcare depends on self-motivated communities responding to community issues rather than to issues an external agency imposes. Such grassroots approaches are more likely to bring about permanent and positive change. Landcare groups have government support and they involve networks to ensure ideas and initiatives are shared and disseminated.

The New Zealand Landcare Trust is a non-governmental organisation facilitating sustainable land management and biodiversity initiatives with rural communities. The Trust is funded by the Ministry for the Environment and by a corporate sponsor, Transpower New Zealand, and consists of a team of coordinators and support staff. Regional coordinators work with groups around the country, such as the Starborough-Flaxbourne Soil Conservation Group, providing support and information to assist them manage their land in a more sustainable manner.

Our mission is far grander than just searching for a range of sustainable land management options for the Marlborough district where it is based, and for similar climate-challenged east coast regions in New Zealand. It is about being influential in moving our thinking and changing old attitudes, in preserving our natural resources and moving our farming systems to long term sustainability; thus not just sitting around waiting for rain. We are learning to live in greater harmony with the natural conditions surrounding us.

The key elements of our farmer group are:

 Communication – a community of interest has been established. Communication of experiences and knowledge between members is through meetings which are called when we have matters to discuss. The group has also held a number of practical workshops and field days within the Marlborough region, designed to provide progress reports on the project activities undertaken as well as to challenge local farmers to think differently about their farm management practices. A newsletter has been published and is provided regularly to group members and other interested parties. Furthermore, some of the group activities and their results have received attention in local media.

Worry and isolation is replaced with vision and confidence.
 There is a growing understanding that sustainability is,
 above all else, an attitude: sustainability is not business as
 usual with a few concessions – but a new road.

Vision without action is just a dream. Action without vision is just activity. Vision and action together can change the world.

• We take ownership of the problems experienced and of the solutions for them. Some selected outsiders are assisting in the education of the members of the group through guidance in our experimental work, through publications and as resource persons during field days.

The Landcare Trust assists us with the management and group dynamics. They facilitate the exchange of knowledge and experiences with practical applications, as our learning and experimenting continues. They play an important role in engaging the various members and promote that all are involved, while keeping us focused on the issues at hand.

Action

Our research and development activities are partly funded by the Sustainable Farming Fund (a New Zealand government organisation), the Marlborough District Council and the Marlborough Research Centre. The farmers involved contribute the remaining 50 percent of the costs. Part of these funds are used to hire consultants with scientific backgrounds in soils, dryland plants, farming systems, social processes, landscapes and climate changes. We decided which science providers to employ after our group had met and discussed which areas of our production process we wished to improve or understand better.

One of the consultants has researched our soils and we now have a much better idea of the challenges we face, farming on these difficult sodium-laden soils. A climate scientist is studying the effects of climate change on the area, while another consultant is looking at the landscapes, dramatically building our knowledge of ecology and its basic systems. A social scientist, furthermore, has conducted a study of farmer attitudes, looking at the human dimension to adaptation.

The rains in spring make that season to be our most reliable growing time. Most of our production should take place at this time each year and the importance of this has been highlighted by the farming systems expert that we hired. As a result, we now have a low number of sheep left on our property during the dry time of the year while the money has already been earned, thus creating a much more sustainable system.

We have two focus farms, selected to be representative of the local dryland farming issues in question, where various processes are being tested, and trials with a vast number of dryland plants are being carried out. The idea behind this approach to research and development work is that the local farmers themselves hold most of the answers, and that the ultimate objective must be to achieve practical solutions.



One of the fenced off natural areas on the author's farm, being viewed by farmers at one of their field days.

In addition, we are fencing off natural-vegetation areas, and we are planting native tree species. Some of the dry hills have been planted with salt bush, both *Atriplex halimus* and *Atriplex nummularia*. Both species have grown very well and after nine months are ready for grazing, with the *Atriplex halimus* being much preferred by our sheep. The salt bushes have created new micro-climatic conditions, including shade effects which now allow other plant species to regain a stand on these impoverished lands.

Our future

After the first three years of group activities, it will remain to be seen what will happen next. This will largely depend on how the weather treats us, and how successful our various adaptations prove to be. But we are also taking on completely new ventures. This autumn, for example, we are opening up a walkway through our farmland and through the nature surrounding our farms. The journey will take walkers through gullies with many native trees and shrubs where the bird life abounds, up to a high hill with views out over Cook Strait and great views of the rapidly growing vineyards and farms of the area. There are many other new initiatives starting around the district. Progressively, we are seeing much change and new thinking. A whole new sense of confidence is emerging and it is aiming at long term sustainability - a delightful goal.

Doug Avery. Chairman of the Starborough-Flaxbourne Soil Conservation Group Grassmere, Marlborough, New Zealand. E-mail: dgavery@paradise.net.nz

Call for articles

September 2007, Issue 23.3

Low external input and sustainable agriculture and health

Sustainable agriculture aims to address the needs of individuals and communities at the same time as it maintains or enhances the health and functioning of the natural environment. It should have positive effects on the health of the individual farmer and consumer, on the plants, animals and the soil and it should contribute to maintaining the functions of the ecosystem as a whole. The development of sustainable agricultural systems cannot be separated from the development of the people involved. In the same way, the health, or viability and robustness of the agricultural system cannot be separated from the health of the farmer and their family and community. In short, healthy soils produce healthy crops which contribute to the health of the consumer.

Traditional subsistence agriculture has in most cases provided adequate nutrition for the people depending on it. But the increasing industrialisation of agriculture and modernisation of the whole food system has meant that the food most of us now eat is primarily produced to attract buyers, is often processed, has been stored or treated, and its nutritional content is at best a secondary concern. One result of this is that producers focus on growing cash crops, and produce (and eat) fewer traditional and minor crops, which have always contributed to a more nutritionally balanced diet. The growing use of chemical inputs such as pesticides in the production process has also meant increased health risks for farmers and their families.

In recent years there has been a growing interest in the link between food, food production and health and there is now a greater demand for healthy food products. This can include organically or locally produced food, which is perceived to be not only better for our health, but also to taste better. This development provides an opportunity for many producers to move towards a more sustainable production system, for example by producing organic food for niche markets. This can also contribute to their own families' health through improved nutrition.

In this issue we want to present examples of how the linkages between health issues and agriculture have been addressed in practical ways, how awareness about nutrition and health is raised in relation to food production, and how low external input and sustainable agriculture can contribute to the alleviation of nutritional problems, disease and health related issues. We are particularly looking for examples where a shift towards sustainable agriculture has been chosen as a response to health concerns. Please send us your stories! *Deadline for submission of articles: 1 June 2007*

December 2007, Issue 23.4. Ecological Pest Management

With this issue of LEISA Magazine we want to examine how farmers are developing and using ecological solutions and strategies for preventing or fighting crop pest problems, such as harmful insects, nematodes, diseases and weeds, with different natural resource management practices. We welcome examples of how farmers, by completely rethinking their farming practices, are making their cropping system much more resilient and resistant to pests. Such examples could include companion planting, push-and-pull systems, use of natural enemies, crop rotation, and sustaining good plant health through maintaining soil fertility levels and regulating soil acidity.

We are also interested in hearing about practical experiences of building local capacity for ecological pest management, as happened in the case of Farmer Field Schools, and we welcome examples of how institutions have changed in order to be able to support the new developments in ecological pest management. *Deadline for submission of articles: 1 September 2007*

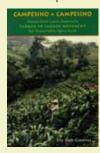
SOURCES

Farmer-controlled economic initiatives:

Starting a cooperative by Reitse Koopmans, 2006. 74 pp. ISBN 90 77073 922. Agrodok no. 38. Agromisa, P.O. Box 41, 6700 AA Wageningen, The Netherlands. E-mail: agromisa@agromisa.org; http://www.agromisa.org

As stated in this publication, organising and successfully developing a co-operative is not an easy task. It is often a time-consuming and complicated process. This booklet therefore intends to serve as a guide to support farmers' groups through the difficult process of starting a co-operative business and to help them find their way and make their own choices in developing a successful enterprise. Joining forces and initiating economic co-operation is one way that farmers can strengthen their position in the market so that they can jointly benefit. This booklet discusses the different types of cooperatives, management and finance issues, and the steps involved in establishing a co-operative.

Campesino a Campesino: Voices from Latin America's farmer to farmer movement for sustainable agriculture by Eric Holt-Gimenez, 2006. 226 pp. FoodFirst, 398, 60th Street, Oakland, California 94618, U.S.A. E-mail: foodfirst@foodfirst.org; http://www.foodfirst.org



This book tells the story of the farmer-led sustainable agriculture movement in Latin America, *Campesino*: poor farmers teaching one another how to protect their environment while still earning a living. The first book in English includes lots of first-person stories and commentary from the farmerteachers, mixing personal accounts with detailed analysis of the

political, socio-economic, and ecological factors that shaped the movement. For thirty years the movement, now with several hundred thousand farmer-promoters, has helped farming families in the rural villages of Latin America improve their natural resources.

Building social capital for agricultural innovation: Experiences with farmer groups in Sub-Saharan Africa by Willem Heemskerk and

Bertus Wennink, 2004. 119 pp. ISBN 9068321617. Bulletin of the Royal Tropical Institute, Bulletin 368. KIT, P.O. Box 95001, 1090 HA Amsterdam, the Netherlands. E-mail: publishers@kit.nl; http://www.kit.nl This Bulletin focuses on the role of farmer organisations and their importance in innovation processes. It describes and discusses social capital in relation to different types of farmers' groups, as well as looking at existing roles and experiences of farmers' groups in agricultural innovation. The numerous case studies show that working with farmers groups is important for ensuring the rural poor are included in innovation development. The book also looks at options for different stakeholders in strengthening the social capital of farmer groups.

Going organic: Mobilizing networks for environmentally responsible food production

by Stewart Lockie et al., 2006. 239 pp. ISBN 1845931327. CABI, Nosworthy Way, Wallingford, Oxfordshire OX10 8DE, U.K. E-mail: cabi@cabi.org ; http://www.cabi.org

This book seeks to make a practical contribution to the development of more sustainable food systems by exploring and revealing what it takes to get people involved in organic food at each stage of the food chain. The book addresses issues of global importance and relevance, using examples and data from Australia.



Almost all links in the organic commodity chain, or network, are dealt with in a thorough way. This book provides a lot of information and discussion about the contribution of organic production to the food industry and will be of interest to academics and policy makers. Available as a PDF file online.

Soil and water conservation to conservation agriculture practices: Experiences and lessons from the Eotulelo Farmer Field School

by M. Bwalya, 2005. 32 pp. EOTULELO Farmer Field School Group, Likamba village, Arumeru, Arusha region, Tanzania.

The Eutolelo Farmer Field School Group has been functioning since 2001 as a self-help community based group. From the very beginning a key motivation for the group and individual households was to find ways to deal with the deteriorating natural resource base. Due to the fragile nature of the soil and land formation, the area is highly vulnerable to erosion with main fields suffering gully erosion. Therefore, throughout the various project phases, the group has perfected and adapted what are proving to be feasible and viable sustainable agriculture practices. This report is a selfassessment of local good practices and scaling-up strategies of sustainable agriculture.

Potential of self help groups for enhancing participation of women

in local self governance by Mandakini Pant, 2006. 67 pp. Occasional Paper Series no. 2. PRIA, 42, Tuglakabad Institutional Area, New Delhi 110062, India. E-mail: info@pria.org ; http://www.pria.org

This research was designed to study and document the potential of self help groups (SHGs) for political participation of women in India. Formation of SHGs for savings and credit activities is one effective strategy which can promote self-sufficiency and independence amongst rural women. The SHGs in this study have moved beyond economic self-reliance to participate in many other social issues through actively taking part in Panchayati Raj Institutions. These are local community institutions which aim to include the participation of all people, across caste, class and gender in the planning and administration of the local community. The success of SHGs in enhancing women's participation in these institutions depends on the capacity building effects of SHGs on the involved women, and is described in this paper.

Farmers' organizations and agricultural innovation: Case studies

from Benin, Rwanda and Tanzania by Bertus Wennink and Willem Heemskerk (eds.), 2006. 112 pp. ISBN 9068321684. Bulletin of the Royal Tropical Institute, Bulletin 374. KIT, P.O. Box 95001, 1090 HA Amsterdam, the Netherlands. E-mail: publishers@kit.nl ; http://www.kit.nl

This bulletin analyses the role played by farmers' organisations in agricultural innovation and investigates the constraints preventing them from having a more active role. Based on case studies conducted in Benin,



Rwanda and Tanzania, the book presents a number of best practices and lessons learned, and identifies issues related to strengthening the role of farmers' organisations. Case studies from Tanzania include MVIWATA, which is the first farmer-led network with national coverage. MVIWATA links local farmers' groups in networks at different levels to enhance farmer representation and advocacy.

Community-based organisation management: Handbook series for community-based organisations by Marta Chechetto-Salles and Yvette Geyer,

2006. 27 pp. ISBN 1920118187. IDASA, Institute for Democracy in South Africa, P.O. Box 56950, Arcadia 0007, Pretoria, South Africa.

Community-based organisations (CBOs) play a role in providing services at local level. Wise management of a CBO can contribute to the effectiveness of the work that it does. This online paper gives guidelines on CBO management, providing basic yet comprehensive definitions of what organisations are and what a CBO is. It also discusses management skills, different types of managers and the main functions of managers. Different topics that need to be managed to ensure the effectiveness of the organisation, such as time, meetings, human resources and employee performance are also examined. The definitions will help to understand the concept and practices of CBO management. The handbook itself says that it should be considered as a guideline, and more detailed studies of CBO management from other sources are recommended.

Working together: forest-linked small and medium enterprise

associations and collective action by Duncan Macqueen et al., 2006. 24 pp. Gatekeeper series no.125. IIED, 3 Endsleigh Street, London WC1H oDD, U.K. E-mail: sustag@iied.org ; http://www.iied.org



Forest products and services can offer development and enterprise opportunities, but there are also many difficulties associated with making a living in this way. Collective action can address such difficulties. This research set out to understand successful collective action in different contexts: Brazil, China, Guyana, India, South Africa and Uganda. Some lessons are presented on how and why forest-based associations work, and what affects group success. For example, lasting associations generally have a strong degree of autonomy, and are focused on a few

long-term issues. The paper also shows how support can be given to such organisations more effectively, and how to improve internal operations.

RUAF Urban Agriculture Magazine No. 17 "Strengthening Urban Producers Organisations" online at http://www.ruaf.org

RUAF Foundation, Resource Centres on Urban Agriculture and Food Security, P.O. Box 64, 3830 AB Leusden, the Netherlands. E-mail: ruaf@etcnl.nl

This issue of the RUAF Urban Agriculture Magazine contains a wide variety of articles from India, Latin America, Egypt, West Africa, Cuba and China. The articles focus on organisations in urban areas and many are related to understanding producers organisations, looking at examples of co-operatives and alliances, and how these different types of organisation relate to and support marketing efforts.

The inter-group resource book: A guide to building small farmer

group associations and networks FAO, 2002. 99 pp. FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy. http://www.fao.org/sd/2001/pe0701_en.htm This resource book shows how, using a participatory approach, intergroup associations can be established in rural areas. It is intended for use by group promoters, extension workers and other rural development staff to help existing groups set up and run such inter-group enterprises. It is available online, in English, French, Spanish and Arabic.



Haini women's organization CBIK 2005, Chinese and English version DVD, 15 minute video. Center for Biodiversity and Indigenous Knowledge, 3rd Floor, Building A, Zhonghuandasha Yanjiadi, Kunming, Yunnan 650034, People's Republic of China. E-mail: contactus@cbik.ac.cn; http://www.cbik.ac.cn

This film documents the Haini women's organisation's experience in natural resource management and self-management. Haini is a village with 40 households, located in Tacheng Town, Yunnan Province, China. This women's organisation started in 1995 to protect the communal forests nearby the village from destruction by illegal logging and uncontrolled cutting. During the 10 years of its existence, this women's self help group has been very successful in protecting the forests, and has gone on to protect the crops from livestock damage as well. It is a clear example of how a local community organisation can create social coherence and support sustainable development.

A Guide to Producers Organisations

by Chris Penrose-Buckley, 2007. 150 pp. Oxfam Skills and Practice Series, Oxfam Publishing. Oxfam House, John Smith Drive, Cowley, Oxford OX4 2JY, U.K. E-mail: publish@oxfam.org.uk

This book is due out later this year and promises to provide "step-by-step guidance for development practitioners, managers and all those interested in how development organisations can help small-scale producers build effective collective businesses". It contains eight case studies from all around the world, and chapters include looking at why producers' organisations and collective action are useful, the structure and management of such organisations as well as the role of support organisations.

Farmers Fighting Poverty: Conference 2006

http://www.farmersfightingpoverty.org/index.html The conference and the seminar Farmers Fighting Poverty aimed to come up with answers to the demands of organised farmers. It was organised by Agriterra in May/June 2006 and the website provides the conference papers and the proceedings free of charge.

Visit our website: www.leisa.info

NETWORKING

La Vía Campesina: International Peasants Movement http://viacampesina.org

International Secretariat, Jl. Mampang Prapatan XIV No. 5, Jakarta Selatan, DKI Jakarta, Indonesia 12790. La Vía Campesina is an international movement which co-ordinates peasant organisations of small and medium sized producers, agricultural workers, rural women, and indigenous communities. It is an autonomous, pluralistic movement, independent from all political, economic, or other denominations. Its principal objective is to develop solidarity and unity in the diversity among small farmer organisations, in order to promote economic relations of equality and social justice; the preservation of land; food sovereignty; and sustainable agricultural production. La Vía Campesina is organised in seven regions: Europe, Northeast and Southeast Asia, South Asia, North America, the Caribbean, Central America, and South America, and is also collaborating with other organisations in Africa.

Agri-ProFocus

http://www.agri-profocus.nl

Agri-ProFocus, P.O. Box 108, 6800 AC Arnhem, the Netherlands. E-mail: info@agri-profocus.nl Organisations, institutions, and market actors need practical information on agriculture and working with producer organisations. Agri-ProFocus supports producer organisations throughout the world with facilitating contacts and the exchange of information and knowledge, both between members of the partnership and with non-members.

AGRITERRA

http://www.agriterra.org

Agriterra, P.O. Box 158, 6800 AD Arnhem, the Netherlands. E-mail: agriterra@agriterra.org

Agriterra tries to promote, facilitate and support lasting cooperation linkages between rural people's organisations in the Netherlands and in developing countries. Agriterra cooperates with rural people's organisations in Africa, Asia, Latin America and Central and Eastern Europe. The development co-operation does not occur through governments or intermediaries, but is direct: from farmer to farmer, from rural woman to rural woman, from co-operative society to co-operative society.

Linking Local Learners Network http://www.linkinglearners.net

This internet service supports groups of local learners around the world to share both their know-how and their challenges in a virtual knowledge network. Linking Local Learners is a learning environment. It combines face-to-face learning through an action learning cycle with peer-to-peer learning through online sharing of ideas. Learning groups of some ten to twenty people who live and work in the same place use this learning environment to improve their own activities and realize their future visions.

Farmers' Link: Sustainable agriculture and rural development for farmers in the east of England

http://www.farmerslink.org.uk

Farmers' Link, Willow Farm, Black Carr, Besthorpe, Attleborough, Norfolk, NR17 2LP, U.K. Email: info@farmerslink.org.uk

Promoting awareness of sustainable agriculture and rural development in the U.K. and overseas, this organisation works to increase understanding of the links between farming and rural development through conferences, publications and international farmer exchanges. They have strong links with farmers, rural communities and agricultural workers' organisations, regularly organising exchange visits between farmers from the U.K. and those in rural communities all over the world, in the belief that this is the best way to raise awareness in the farming community, as farmers can learn sustainable farming practices from other farmers and discuss issues of common interest. Farmers' Link have taken farmers to Nicaragua, Zimbabwe, India, Chile and Cuba. Their publications are free of charge for farmers while others have to pay a small amount.

People's Food Sovereignty: The agriculture trade network http://www.peoplesfoodsovereignty.org

In order to guarantee the independence and food sovereignty of all of the world's peoples, it is essential that food is produced though diversified, community based production systems. Food sovereignty is the right of peoples to define their own food and agriculture; to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives; to determine the extent to which they want to be self reliant. This site has news updates and links to items related to the fight for food sovereignty.

International Alliance Against Hunger http://www.iaahp.net

Office of the World Food Summit Follow-up and Alliances, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy. E-mail: iaah@fao.org

The International Alliance Against Hunger is a voluntary association of local, national and international institutions and organisations that share a common mission to eradicate hunger in the world through a combination of political will and practical action. The Alliance also supports individual countries in setting up National Alliances that focus on their specific needs.

NABUUR.COM, The Global Neighbour Network

http://www.nabuur.com

NABUUR Foundation, Koningin Wilhelminalaan 21, 3818 HN Amersfoort, the Netherlands. Email: info@nabuur.com

NABUUR.COM gives communities in developing countries access to their global "neighbours" via the internet. Through these "neighbours", local communities can benefit from the huge reservoir of resources (knowledge, solutions, energy, creativity) that is available elsewhere.

COPAC

http://www.copacgva.org/index.html

Committee for the Promotion and Advancement of Cooperatives, 15, Route des Morillons, 1218 Grand Saconnex, Geneva, Switzerland. E-mail: copac@copac.coop

COPAC is a partnership between representatives of the co-operative movement, farmers' organisations, co-operative development agencies, and the United Nations and its agencies. Members work together on equal terms to promote and coordinate sustainable co-operative development through policy dialogues, technical cooperation and information, and concrete collaborative activities. The website has various useful publications and links.

NEW BOOKS



A good place to start: The IDS knowledge services guide to finding development information online

by Gabrielle Hurst and Cheryl Brown (eds.), 2006. 85 pp. ISBN 1858646243. Institute for Development Studies, University of Sussex, Brighton BN1 9RE, U.K. E-mail: info@ids.co.uk There are thousands of websites you could go to when looking for the latest information on international development, but what if you only have time to visit five? This guide will point you to some good places to start your search. This booklet, also available online, presents

five websites for many development topics, selected by people who have spent countless hours searching the internet for the latest development information to share with their readers. The websites they have chosen are easy-to-use, offer a broad range of free material and many of them include materials in different languages. The booklet also contains tips on how to get the best out of your internet searches. The LEISA website is one of the five recommended agriculture websites in this useful IDS guide.

Farming and the fate of wild nature: Essays in conservation-based

agriculture by Daniel Imhoff and Jo Ann Baumgartner (eds.), 2006. 252 pp. ISBN 0970950039. Watershed Media/Wild Farm Alliance, P.O. Box 2570, Watsonville California 95077, U.S.A. http://www.watershedmedia.org;

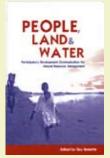
http://www.wildfarmalliance.org

This book is a collection of more than 20 essays about agriculture and conservation in the U.S.A. These essays are collected by Wild Farm Alliance, a group of conservationists and ecological farming advocates who want to bridge the gap between stewardship farming and wildland conservation by promoting agriculture that helps protect and restore wild nature. The essays highlight the scientific, philosophical, economic, and cultural underpinnings for conservation-based agriculture. The aim is to promote a farming system which is connected to the larger landscape through wildlife corridors, protected waterways, hedgerows, and other natural habitats. The essays cover a range of topics examining the often difficult relationship between agriculture and conservation in the context of today's changing world.

Social learning towards a sustainable world by Arjen Wals (ed.), 2007. 538 pp. ISBN 9789086860319. Wageningen Academic Publishers, P.O. Box 220, 6700 AE Wageningen, The Netherlands. E-mail: sales@wageningenacademic.com This comprehensive volume, containing 27 chapters and contributions from six continents, presents and discusses key principles, perspectives, and practices of social learning in the context of sustainability. Social learning is explored from a range of fields challenged by sustainability including: organisational learning, environmental management and corporate social responsibility; multi-stakeholder governance; education, learning and educational psychology; multiple land-use and integrated rural development; and consumerism and critical consumer education. An entire section of the book is devoted to a number of case studies of people, organisations and communities using forms of social learning in moving towards sustainability.

People, land and water: Participatory development communication for natural resource management by Guy Bessette (ed.), 2006. 313 pp. ISBN 1844073432. Earthscan / James & James, 8-12 Camden High Street, London NW1 oJH, U.K. E-mail: orders@earthscan.co.uk In natural resource management research, a best practice implies the

participation of community members, research or development teams and other stakeholders to jointly identify research and development priorities



and contribute to decision making. This process is known as Participatory Development Communication, and can be described as a planned activity based on participatory processes, methods, media and interpersonal communication. Each chapter of the book presents in-depth and very practical experiences, from Asia and Africa in particular, to highlight the different ways in which this process can be achieved. Through the examples, the book describes the major issues involved in applying Participatory Development Communication to natural resource management practices and research, discusses the challenges and the difficulties linked to such an approach and offers insights and lessons from research and experience in the field.

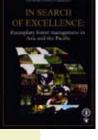
ICTs for agricultural livelihoods: Impact and lessons learned from IICD supported

activities by Nele Blommestein et al., 2006. 41 pp. IICD, P.O. Box 11586, 2502 AN The Hague, The Netherlands. E-mail: information@iicd.org

This booklet highlights the lessons learned and achievements of the International Institute for Communication and Development (IICD) and its partners in using Information and Communication Technology (ICT) to enhance agricultural livelihoods through a variety of projects over six years in nine countries in Africa and Latin America. This booklet, available online, shows IICD's experiences of using ICTs to contribute to poverty alleviation, with development partners, policy makers and ICT practitioners.

In search of excellence: Exemplary forest management in Asia and

the Pacific by Patrick B. Durst, Chris Brown, Henrylito D. Tacio and Miyuki Ishikawa (eds.). 2005. 404 pp. ISBN 9747496688. RAP Publication 2005/02. FAO, Regional Office for Asia and the Pacific, 39 Phra Atit Road, Bangkok 10200, Thailand.



Instead of dwelling on the failures and the negative, this book celebrates the "good" and the many positive forestry management efforts in the Asia-Pacific region. It highlights the many people who are striving for excellence in forest management and seeks to encourage others to emulate these positive efforts. This publication describes a diversity of management approaches that have proven innovative and successful in meeting challenges. It reaches out to foresters, policy-makers, planners and anyone interested in the future of forestry in Asia and the Pacific.

DARCOF II Danish research in organic food and farming systems 2000-2005

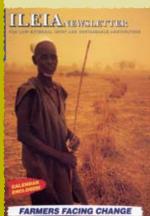
by Linda S. Sørensen and Claus Bo Andreasen (eds.), 2006. 168 pp. ISBN 8799134314. Danish Research Centre for Organic Food and Farming (DARCOF), Foulum, P.O. Box 50, DK-8830 Tjele, Denmark. E-mail: darcof@agrsci.dk; http://www.darcof.dk The aim of this book is to provide an overall picture of the Danish research in organic farming during 2000 until 2005. Part of the research can be used for improving products and processes at organic farms and organic businesses. Other results demonstrate how organic agriculture can contribute to common goods like clean drinking water, less spillages of greenhouse gases and a more versatile nature. Detailed information on the research can be obtained from the website mentioned above.















Request your back copies of the LEISA Magazine!

The LEISA Magazine has been through various changes since it began, but we have always tried to bring you interesting practical community based experiences in low external input and sustainable agriculture, many of which stand the test of time.

If your organisation or library is missing any previous issues of the magazine, or would like extra copies of a particular issue, you can request them from ILEIA free of charge. We have limited numbers of most issues going back to 1988, covering a wide variety of topics relating to the social, economic and technical dimensions of sustainable

agriculture. You can also go to the Magazine page on our website to see which issues would be of most interest to you.

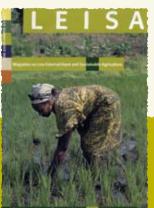
For libraries and local institutions in particular, we have available a few full sets of the magazine from 1988-2006. We will distribute these on a first-come-first-served basis, so please get in touch with us, telling us a bit about your library or organisation, and we will supply what we can.

Remember that all back issues are on the CD-ROM we distributed last year, and are available on our website, to download, full-text, at no cost. However, if you would like the hard copies for your collection or to distribute among your partners, e-mail or write to us with your address, subscriber number and telling us which issues you would like - we will send out previous issues until we run out of stock.

E-mail: ileia@ileia.nl Postal address: ILEIA, P.O. Box 2067, 3800 CB Amersfoort, The Netherlands.

All previous issues are also available at: www.leisa.info

36



ting farming