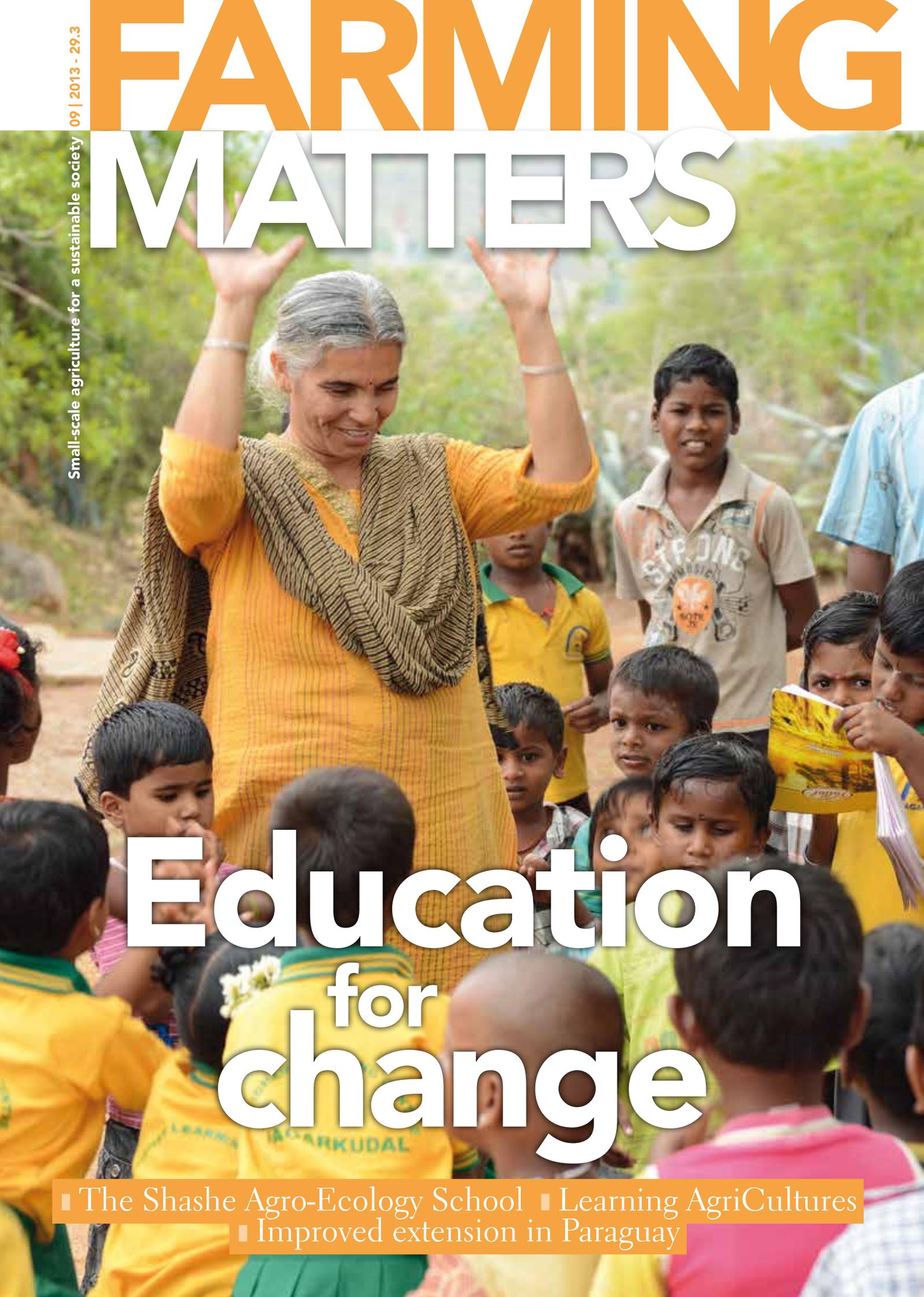


FARMING MATTERS



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■ Improved extension in Paraguay



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Healthy food for rural women

My title in my community is “Pognaa”, which means traditional queen. Many families in the district where we live, Lawra, are not able to provide themselves with three meals a day and this causes them a lot of grief. For years, the government provided free chemicals and fertilizers to farmers as part of the Green Revolution strategy. Now, we see that this has led to serious land degradation. The farm lands are in a terrible state and do not produce enough food to feed the families.

This has led me and fellow women farmers to begin to sensitise other women about the effects of pesticides on vegetables and food crops. At the markets and in private homes, we tell other women about the negative effects of pesticide use, and about healthier alternatives. At a recent food fair, we displayed our local traditional foods, on which no pesticides are used. These crops are also highly nutritional and drought resistant.

Traditional leaders and dignitaries from various regions were present to grace the occasion and expressed their support. Local women sang songs about the harmful effects of the use of chemicals on food crops and vegetables.

These activities have contributed to the spread of farming practices that don't use agrochemicals. In some of the villages, the women no longer spray chemical pesticides. They collect animal droppings and use them as manure and to deter harmful insects. There is also a visible increase in the availability of traditional food and crops at the markets, one example is *dawa-dawa*, a local condiment that used to be popular before being abandoned for industrial Maggi cubes. We see the promotion of healthy traditional crops as a step towards food sovereignty for rural women in northern Ghana.

Patricia Dianon is the chair of the Rural Women Farmers Association of Ghana (RUWFAG). Photo: CIKOD



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“We are working to propel change”

Education can play a key role in the way producers and consumers see farming and farmers. More than a decade ago, Meenakshi Singh started the Puvudham Learning Centre in Tamil Nadu, India, with the specific aim of running a different school: one that values what children know, and that contributes to personal development and self-esteem. “I believe that policies can do little without people who themselves become change agents.”



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Seeds and Farmer Field Schools

Following a training methodology based on the priorities of farmers and on the observations they make in the field, Farmer Field Schools (FFS) have shown many positive results. SEARICE is training extension agents to conduct a FFS, and with it help (re-)build farmers’ capacities to select seeds and breed new varieties. This leads to farmers valuing and enhancing the (agro)biodiversity of their area, and strengthens the resilience of the local agro-ecosystem



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Reflecting upon practice

In spite of its many drawbacks, the Transfer of Technology approach still guides the work of many extension agents throughout the world. In Paraguay a training programme has been developed based on the observations and concerns of extensionists, helping them reshape their work. Instead of a fixed model that can be replicated in a new setting, the results show the benefits of an approach that is built upon the experiences, needs and the challenges faced by extension agents.



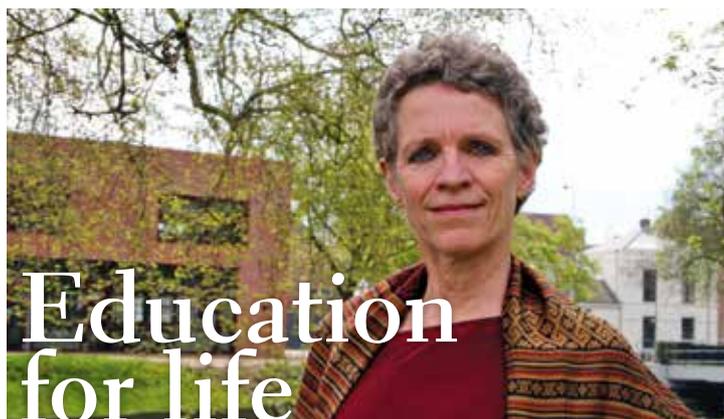
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A university’s model for local development

The University for Development Studies, in northern Ghana, has adopted a different approach to education which is helping it achieve the objective expressed in its motto: “knowledge for development”. Part of this educational model is the Third Trimester Practical Training Programme: an additional term specifically dedicated to community work. Every year, students spend an 8-week period in the field, discussing and working with, and learning from, farmers.

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Is there a future for today's youth in tomorrow's agriculture? Not if we will live in a world where agriculture is in the hands of a couple of large companies and a small segment of farming entrepreneurs who have made it in the rat race. And, not if policymakers continue thinking in linear growth models dominated by the logic that "farmers can either move *up* the ladder of globalised and industrialised agriculture, or be *out*". Another world is possible, and education plays a crucial role in making it a reality.

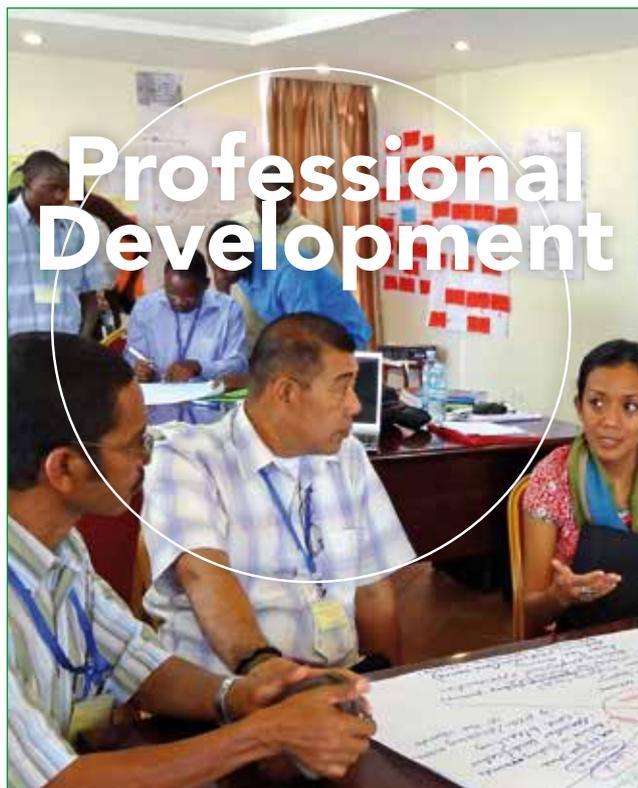
Suppose we see the world as a place where hundreds of millions of farm families, now and in the foreseeable future, produce varied and healthy foods for a growing population, cater to local and regional markets, work with the ecosystems around them and safeguard beautiful landscapes and cultural values. A world where urban dwellers know where their food comes from and where rural children have a chance to learn about basic agro-ecological processes on their own farms.

That world is possible but we must invest in it now. Education is a key driver of change, of transformation towards a greener and more connected global society. Educational institutions (formal and non-formal) can become places where people learn –in very practical ways– about improving resilience to climate change, about the importance of biodiversity, about the nutritional value of local foods and herbs, and the economics of sustainable agriculture and consumer relations. They can serve as places for validating endogenous agricultural knowledge, observing ecosystems and the behaviour of insects, and studying the characteristics of different seeds. Schools need to be places where students, teachers and farmers re-connect with Agriculture making it an attractive proposition for the future, while exploring new approaches and solutions.

As citizens of global society, we need to make choices today; on the future of our food, our landscapes, our culture and the education of our children. The articles in this issue of *Farming Matters* show that in different parts of the world, and in a wide range of educational settings, there are inspired and visionary educators at work, giving education a new meaning as a driver in rural transformation towards just and sustainable societies. Let us join forces, get inspired and inspire. This is no rocket science, we can all be part of the change we want to see.

Edith van Walsum

Edith van Walsum, director ILEIA



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Agricultural biodiversity: Breaking the barriers

Agricultural biodiversity plays a huge role in maintaining resilient local economies, balanced diets and balanced ecosystems. The rapid disappearance of agricultural biodiversity and the lack of measures to protect it are therefore great causes of concern. Mainstream agricultural policies, which generally promote monoculture agriculture, Genetically Modified Organisms (GMOs) and Intellectual Property Rights threaten such agricultural biodiversity, having an impact on agricultural landscapes, species, varieties, breeds, the wild relatives of crops and livestock, pollinators, micro-organisms and genes. These policies and practices lead to the disappearance of plant and animal species, and the knowledge embedded in their management and use.

The good news is that in recent years many promising initiatives have been launched around the world that aim to preserve and manage agricultural biodiversity. Small-scale family farmers often play a central role in these, acting as custodians of biodiversity. But other actors and institutions also play important roles. Producers, public and private institutions and consumers are reconnecting with each other through innovative market arrangements, many of them at local or regional level. Farmers and researchers are taking up joint research initiatives, and

farmers' organisations are engaging in dialogues with policymakers, pushing for policies that enhance agrobiodiversity.

Issue 30.1 of *Farming Matters* will look at these emerging initiatives and at the insights gained from the efforts to up-scale these experiences. We particularly aim to explore the factors that help breaking the glasshouse that is preventing the expansion and mainstreaming of such ideas and practices.

The topics we will look at will include the revitalisation of local seed systems and indigenous livestock breeds at a large scale; the market mechanisms and policies that support agrobiodiversity; farmers' innovations and the role of knowledge and information networks. As 2014 will be the *International Year of Family Farming* this edition will also explore the close interconnection between agricultural biodiversity and family farming.

This issue will be produced in collaboration with agrobiodiversity@knowledged, the Hivos/Oxfam Novib Knowledge Programme. Articles for the March 2014 issue of *Farming Matters* should be sent to the editor, Jorge Chavez-Tafur, before December 1st, 2013. E-mail: j.chavez-tafur@ileia.org

Farming Matters welcomes comments, ideas and suggestions from its readers. Please contact us via e-mail at ileia@ileia.org or write to P.O Box 90, 6700 AB Wageningen, the Netherlands.



Interview

It is a pleasure to see that the important findings that came out of the collective work of the IIED/Hivos knowledge network are really contributing to farmers making better informed decisions. Researchers and practitioners in developing or emerging countries need to look more into what's going on in their "doorsteps markets". Here, farmers are acting according to what *they* think is best for them, rather than trying to cope with the latest trends and fashions popular among donors, intellectuals and northern institutes. When we look into this, we'll be in a better position to understand and improve these markets in a more inclusive and sustainable way that really benefits the majority rather than the few. Keep exchanging good ideas and news!

Ethel Del Pozo-Vergnes, Researcher, Sustainable Markets Group, International Institute for Environment and Development (IIED), London

Introducing SRI

Congratulations on publishing such a wonderful issue on the System of Rice Intensification (SRI). I have just finished it, and I am really impressed to learn about this approach. SRI really has the potential to bring the rural and poor people of Pakistan out of hunger and poverty. At SPSD, we are inspired to introduce and practise SRI in our target communities in the rural and remote areas of Southern Punjab, Pakistan.

Rufus Kamran, Executive Director, Society for Peace and Sustainable Development (SPSD), Pakistan

Introducing SRI 2

Reading the reactions to your issue on SRI, I would only like to add that its adoption is a vital and urgent matter in the area where I work. The water table in this area used to be at a depth of 30 m, but we find water now at less than 3 m, and half of all the arable land has salt problems. We are experiencing an ever increasing number of pests and diseases, and the experts from the national research institute are telling us to apply doses of pesticides 35 times higher than recommended by those making and selling the pesticides. Something is very wrong.

Divar Moya Zavaleta, farmer, Jequetepeque, Peru

Family farmers

With the International Year of Family Farming coming up, we should recognise and reflect on the achievements and failures in supporting family farmers so far. I believe that the key stakeholders in this global phenomenon are governments. Governments must ensure that good policies are put in place. Any policy which facilitates the education of family farmers goes a long way in developing the agricultural sector. Literacy among rural farmers and rural workers would help raise outputs and the quality of crops. Policies that encourage people to settle or remain in rural areas are also needed, and this involves ensuring that farm workers receive better pay. There is also a need to support the acquisition of land for the majority of small-scale farmers.

Francis Tonge, student, Zambia

Knowledge exchange

I tend to believe that in the short term a lot of improvement in agricultural production can be achieved by knowledge exchange between farmers. However, I wonder how much room some farmers have to experiment with new techniques, considering the low amount of land and resources they have. I also wonder about the extent to which on-farm improvements of fertility and productivity will guarantee sustainability in the long term, or whether a system perspective that includes the wider environment is also necessary to maintain agricultural productivity.

Louise van der Stok, in a comment on www.agriculturesnetwork.org

Agrobiodiversity

Agrobiodiversity is very important in terms of being able to find new crops able to deal with changing environmental conditions such as global warming. However, agricultural diversity *has always been* important. That we chose to act as if the well would never run dry does not mean that diversity itself was not important to our agricultural productivity or food security. Because there is less diversity now than in the past and it is becoming a scarce resource, its *value* is going up. Its basic role in our ability to feed the world or respond to environmental changes has not changed. In fact, it might be argued that if we had taken it as seriously then as we do now, we might not be in as big a mess as we are now. Just a thought!

An online comment on www.agriculturesnetwork.org

The key to agricultural transformation

Recent decades have seen an increasing recognition of the role that education plays in rural development. Some rural communities now have new buildings, new curricula, and new educational options, such as Farmer Field Schools. Yet, in many countries, the education system still falls short of what is needed, especially in terms of agriculture and meeting the needs and concerns of rural dwellers. With agriculture showing diminishing yields and many rural areas experiencing pervasive poverty and degradation, youngsters all over the world opt to move to the cities. What answers does education provide? It rarely addresses emerging challenges, such as degraded resources or climate change, nor does it make a real contribution to helping rural people have a better understanding of how to improve their livelihoods. Changes are needed so that education effectively contributes to transformation towards a more sustainable and just agriculture.

Loes Witteveen and Jorge Chavez-Tafur

The importance of education for development is almost universally accepted. Education is not only a human right, but also a tool for development. But it is obvious that this tool is not always delivering results in rural areas. Although more students are reached now than in the past, the resources available are still limited. A much larger problem, however, is the way in which countries' education systems meet rural needs, especially when these are rapidly changing. This raises the question of whether education should respond to today's needs or focus on preparing students for the future. In industrialised countries, very few school children will become farmers, or will make a living in rural areas. Similar, though less extreme, patterns can be discerned in many developing countries where many school leavers find the pull of the city irresistible. They see a direct link between farming and poverty and view the city as a greener pasture. Inadvertently or not, education



Working together: students and farmers in northern Ghana. Photo: Joseph Amikuzuno

programmes in rural areas encourage the youth to leave for the cities.

Yet agriculture will continue to be a fundamental economic activity, and farming will continue to shape the lives of hundreds of millions of people around the world. Even abandoned villages will remain part of the cultural heritage and deeply rooted identities of large populations. However rapidly urbanisation proceeds, rural émigrés and those who continue to live in the countryside will continue to relive their stories and songs that portray afternoons in the shadow of a mango tree and the ritual celebrations for a good harvest. But how can these nostalgic memories be aligned with the realities of inherited poverty, land grabbing and stagnant traditions? Millions of students going to school today (together with millions who still don't have the opportunity) will follow in the footsteps of their parents and grandparents and become growers or herders. They, like their parents now, will be responsible for providing 50% of the world's food. How to prepare them for this responsibility?

We should start by identifying the type of agriculture we want as a (global) society. The choice is essentially between pursuing a globalised industrial agriculture, or an alternative pathway that recognises the multifunctionality and diversity of family farming and the contribution that it can make to addressing challenges such as hunger and malnutrition, loss of biodiversity and climate change. If we follow the latter path, teaching methodologies such as Farmer Field Schools are very useful: they focus on strengthening farmers' capacities to analyse their agro-ecosystems. This empowers them to make their own judgements and take decisions that work for them, rather than depending on others telling them what to do. These efforts support the continuous development of an efficient and sustainable production system.

Skills and values But just as development is not limited to economic growth, agriculture is not only about yields and outputs. Agriculture is not just a technical activity requiring technical skills, but also a key force that shapes societies, cultures and landscapes. Even urban environments are shaped by farming and agriculture: as consumers we all benefit from the services provided by farmers.

If education is to contribute to the transformation of rural areas, it needs to be more than just *for agriculture*, limited to teaching farmers how to farm. As the different articles in this issue show, educational programmes *about agriculture*, targeted at a wider group than just farmers, are also important. While formal and non-formal education should train farmers to develop specific skills for the sustainable production and marketing of their products, it also needs to be about values and interests, and about transforming perceptions and attitudes – in

rural areas and in the cities, among farmers and consumers. In spite of the key role played by farmers, farming is often seen as an activity carried out by those who cannot do anything else; a last option that can easily be abandoned as soon as other opportunities arise.

Unfortunately, most education programmes encourage these views, leading to the feelings of “disjointedness” mentioned by Meenakshi Singh (p. 14) and seen in rural areas all over the world. Education needs to counter this, to help develop feelings of self-esteem, appreciation and pride among farming communities and give them the recognition they deserve. The key role farmers play today, and which they will continue playing, needs to be acknowledged.

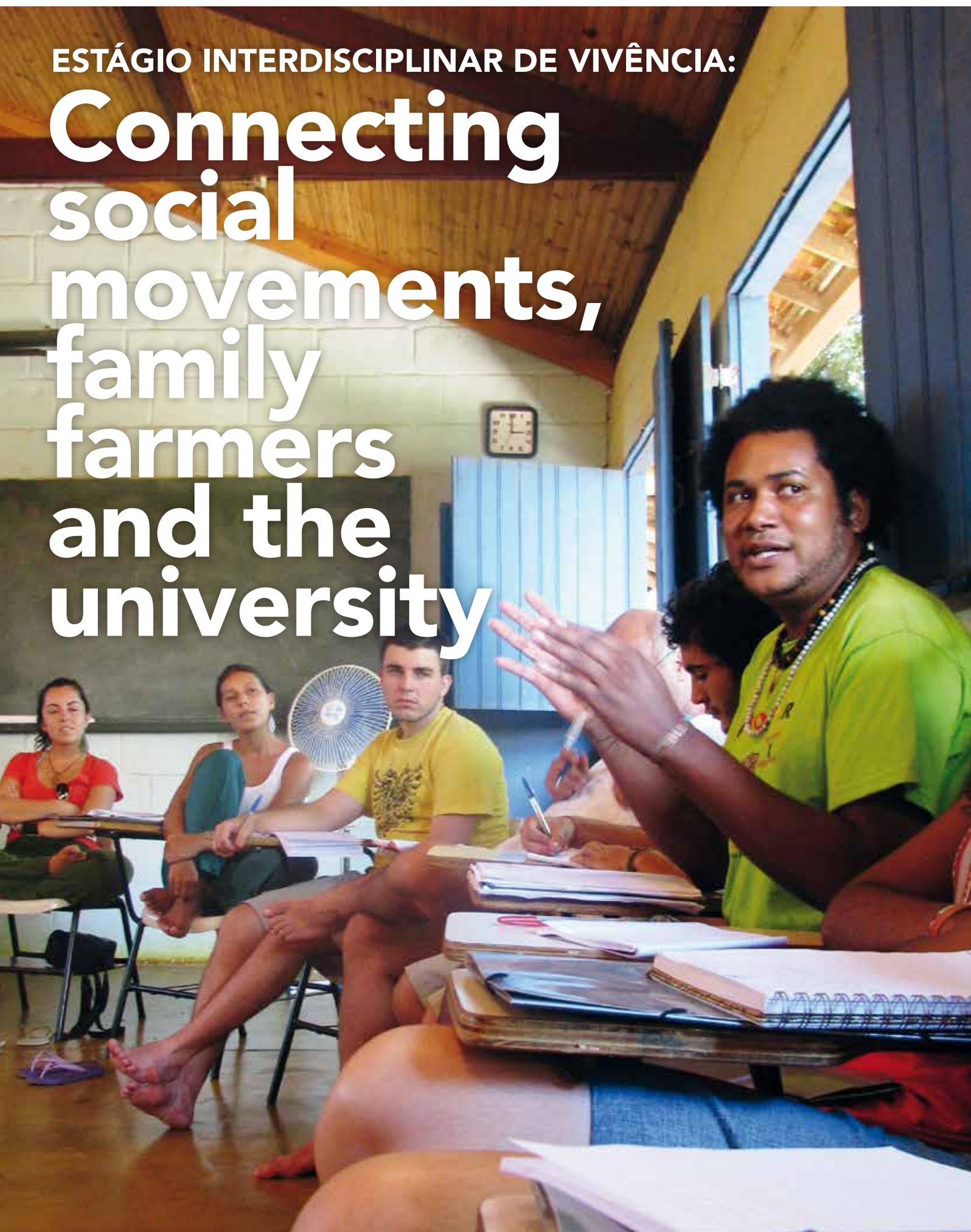
These changes need to be supported by changes in those responsible for education and extension programmes, and also by changes in those in charge of a country's policies and programmes. For example, teacher training programmes that encourage teachers to reach out to young women, ethnic minorities or pastoralists, and to develop new perspectives on family farming with them, play a valuable role in encouraging diversity and opening up hitherto unrecognised potential. The best examples are seen in approaches where the curricula are built on local knowledge and experience, on what students know and want to know, and on the challenges they face. Landini and Bianqui (p. 34) show the importance of not only changing the perspective of extension agents, but also of involving them in this process, building on their immediate needs and concerns and enhancing their professional identities.

Reconnecting with family farming All too often education in rural areas serves to disconnect and estrange rural people from their own culture and environment, and increases the gap between rural and urban settings. Yet education can actively support young rural people in their search for identity and future opportunities. Education needs to be better connected to rural realities and the enormous potential that family farming, based on agro-ecology, has in addressing the pressing challenges facing the world today. The initiatives highlighted in this issue, even if small in scale, are all building towards this. It's time to come up with the energy, inspiration and dedication to make education a genuine force for innovation in agriculture.

Loes Witteveen co-ordinates the Master's programme in Rural Development and Communication (RDC) at Van Hall Larenstein University of Applied Sciences. Jorge Chavez-Tafur is the editor of *Farming Matters*. The authors thank Mary Abokyi, Tesfaye Gemechu Amesa, Walid Mahuob, Tegegn Molla, Murtiti Muharamiah, Grace Tambo and Muditha Palliyage, graduates of the RDC programme, for their support in producing this issue.

ESTÁGIO INTERDISCIPLINAR DE VIVÊNCIA:

Connecting social movements, family farmers and the university



Family farmers play a very important role in Brazil, and not only in terms of food production. Yet, in spite of their enormous contribution, the knowledge that is developed and shared in educational institutes is rarely connected to their traditional knowledge. Most higher education institutions are highly theoretical and often oriented towards large-scale industrial agriculture, thereby creating gaps between their research and outreach activities and the needs of family farmers. An initiative started by a group of university students is successfully changing this situation.

Heitor Mancini Teixeira, Isabela Fabiana da Silva Ladeira and Lucas Reis Bittencourt

During the 1980s the process of political liberalisation that took place in Brazil helped strengthen the social movements and organisations working towards an alternative model of agriculture. Groups such as the Landless Rural Workers Movement (MST), founded in 1984, have since been lobbying for radical transformations in the field, but also for change in the education system, as Brazilian universities were strongly shaped by the Green Revolution.

Together with MST, the National Federation of Agronomy Students started the *Estágio de Vivência* (EIV) project in 1989 in the municipality of Dourados, in Mato Grosso. This aimed to address the fragmentation and lack of connection between different science fields that characterises higher education in Brazil, and also to shorten the distance between the university and the reality of family farmers and social movements. Since then, this initiative has been adopted in many other universities, organised by the students themselves, often involving not only future agronomists, but also students of many other disciplines. The students live for a period of time with family farmers and social movements, working and learning in a rural environment.

The Estágio Interdisciplinar de Vivências The EIV started in the Federal University of Viçosa in 1996 with the support of the Centre for Alternative Technologies of Zona da Mata (CTA-ZM). With support from MST, the Movimento dos Atingidos por Barragens (Movement of People Affected by Dams, MAB) and many farmers' unions from across the region, this is now an official extension project of the university. It is not a course, so students cannot get credit points for it, but it can be taken as

one of the extracurricular activities which all students are obliged to take.

The whole process is guided by three principles. One of them is *partnership*, as the social organisations involved contribute to the activities of the project, helping to establish linkages between students and farmers. Another important principle is *interdisciplinarity*. The rural reality and its relationship with students and social movements is a complex issue that goes beyond the scope of any one discipline. Students' experiences are richer when people from different fields are brought together to share ideas and points of view, in an attempt to establish a common understanding based on a holistic approach. The third principle is *non-intervention*. We find it important to reinforce the idea of a horizontal relationship. This means that students respect the customs and traditions of their hosts, and do not try to change these during their short stay in the farm. The EIV aims at raising awareness and facilitating the exchange of ideas and information, and is not a technical intervention aimed at solving a particular problem.

Structure and logistics The EIV usually takes place in March, at the end of the summer holidays, just before the academic year starts. But its organisation starts much earlier and involves different activities. A set of open seminars during the year, involving students, lecturers and the main partners of the project, helps define the specific topics to be addressed. The first of these meetings is also a moment to evaluate the previous year of the project and re-affirm (or adjust) the principles, values and goals for the present year.

Another important part is the initial preparation of the students. Four different workshops are organised



Preparing to go and visit Pedrinho's field, and then sharing the lessons learnt: "The EIV gave me a lot that was missing at the university". Photo: 13th EIV, 2010

every year, which focus on the broader context. These workshops provide a space for discussions not normally held during courses or university seminars. At the same time, the families who will receive interns in their farms are selected and prepared. These families are usually chosen by the social movements, using several selection criteria involving the farm's productive and social aspects.

The EIV involves approximately 25 participants every year, and lasts slightly more than three weeks, divided in three major phases: (a) preparation, (b) the farm experience and (c) a collective evaluation. During the first phase all the students get together for a five-day series of lectures covering a range of topics that includes agro-ecology, gender issues, agrarian reform, extension and communication. This is also a moment to discuss the principles of the project and for students to plan how they will approach and communicate with the farmers. Immediately after this, the students all go to live on a different small-scale farm for thirteen days. The time spent with a rural farming family helps them understand the family's reality, identify their problems and threats, and also see their strengths and the possibilities they have. After this, the students get together again for a general

evaluation which lasts for four days, and provides the interns with the chance to experiences, discuss that they have learned and produce collective outcomes. The students discuss the importance of social organisations and also reflect on how this learning process differs from their regular courses, and how it has contributed to their personal and professional growth. Afterwards, each of them prepares a report describing the farm, paying attention to social, environmental, cultural, economical and political aspects.

A later meeting between the interns and the organisational team adds to this collective assessment, and also helps to bring in new students and start the preparations for the coming year. Those who completed the previous EIV are invited to help organise the next one. Each farmer family is also visited for the evaluation, an opportunity for them to share their impressions of the presence of the students on their farms.

Many results More than 400 students have followed the Zona da Mata EIV internship and many are now working with NGOs, social movements, universities and/or the local or the federal government – strengthening family farming and supporting



and experience rural life and do not intervene or try to change it. However, we have seen that many students go back to the communities involved on the EIV, to develop extension or research projects. Many ex-students now work at a national level, bringing indirect results, such as more appropriate public policies for family farmers. And several farmers involved in the project now have a much closer relationship with the university. Joao Donizete, for example, has attended several of the university's extension courses, on homeopathy, apiculture and medicinal plants, something he probably wouldn't otherwise have done. *"Before we had a different image of the university, as only a place for the elite. The EIV has brought us closer."*

Where next? After many years of the EIV, several farmers started to talk about the need to organise a bottom-up EIV, which is now being referred to as "vivências educativas" (educative experiences). The idea is to bring their sons and daughters for a "living experience" at the university,

"The EIV has brought us closer"

a transition towards agro-ecology. Some students have gone on to high ranking positions. To name only a few, Glauco Régis is now the executive director of CTA; Alexandre Leandro Santos de Abreu works with MST; Davi Fantuzzi works at the Permacultural Institute of Bahia (Instituto de Permacultura da Bahia); Clara Teixeira Ferrari works for FUNAI (the Brazilian National Indigenous Foundation); Erineu Coop is the marketing co-ordinator at the State Government of Minas Gerais. While the EIV was only a small part of their university experience, they all acknowledge its importance, and how it helped them bring their studies (and the university itself) closer to the rural reality of the country and to the social needs of family farmers and rural workers. As one of the students stated, *"the EIV gave me a lot of information that was missing at the university. It sharpened my desire to know, ask and discuss. I learned how to work better and share my opinions in a group. And mainly, I could understand the feelings and needs of rural workers, with whom I will probably have contact for the rest of my life."*

We have no doubt of the benefits for students, but do the farmers benefit too? It is difficult to see a short-term effect, as the students go only to learn

where they can participate in different activities and lessons organised by a group of students and lecturers. The idea –again– is to break the barriers between university and society, in an effort to build a more popular and democratic university.

And while we are all working so as to improve these efforts even further, we are also proud to see that the EIV is also gaining international scope, with a similar course now being developed at Wageningen University in the Netherlands. As a joint effort of students and several partner organisations, the Farm Experience Internship started in August 2013. We are sure that it will see equally positive results!

Further reading

Freitas, A.L., C.T. Ferrari, M.G. Silva and F.V. Zanelli, 2009. *Análise dos princípios e metodologias no Estágio Interdisciplinar de Vivência – EIV*. V Simposio Nacional de Geografia Agrária, Niterói.

Heitor Mancini Teixeira, Isabela Fabiana da Silva Ladeira and **Lucas Reis Bittencourt** are undergraduate students at the Federal University of Viçosa, Brazil. E-mail: heitorteixeira_5@hotmail.com



**“We are
working
to propel
change”**

Having grown up and studied in the enormous city of Mumbai, India, Meenakshi Singh and Umesh Chandrasekhar were looking for an alternative way of life. After spending eight years farming organically in the district of Dharmapuri, in the southern Indian state of Tamil Nadu, they decided to work with local farmers to help them convert to organic agriculture – through their children. They started the Puvudham Learning Centre, a school for children of nearby farmers and migrant labourers that aims to make the experiences at school relevant to children’s lives and to give value to the children’s own knowledge. Starting with seven children in 2000, 95 are now enrolled in their school.

Interview: Laura Eggens

While food can be seen as our most precious possession, farming and the production of food is seen as a last option, carried out by those considered incapable of anything else. Education plays a key role in forming this attitude, both among consumers and farmers themselves. “Interventions in rural areas such as our school may be able to make future generations see things in a better perspective. It can teach them that farming can be an educated option for those who decide to stay in the village in spite of the glamour of the city.”

Meenakshi wanted to give children in the school the freedom to move, enquire and learn. In contrast to conventional schools, she aims to sharpen and encourage the “inherent sensitivity” and intuition of the child. “Sensitivity creates space for creativity and self-discovery”, Meenakshi says. She talks about sensitivity to animals, plants and nature. In contrast, in conventional schools learning has become fragmented into different subjects, and removed from life itself. The Puvudham Learning Centre integrates life and learning, to help children synthesise the knowledge they gain in and outside school. Focusing on “experiential learning”, school activities include drawing, discussions, walks, observations and questions. In groups, children plan how to grow plants on an empty plot, learn about natural pest control, measure their progress, and learn to make a cost-benefit analysis. Children are encouraged to speak about what they already know, and the teacher helps them build on their existing knowledge.

Why was it necessary to start this school? To be frank, the decision to start the school came from my own need to reach out to children. I wanted to allow at least some of them the freedom and happiness I would have appreciated in my school. You see, during my own school years in Mumbai I was unable to understand why I had to go to school at all when I could learn so much more outside the formal educational system. I remember an incident in primary school, when I was wrongly accused of stealing and the teacher did not think it necessary to apologise to me, making me feel worthless. Occurrences like these, in the same way as the existing examination system, made me start questioning whether the school existed to turn me into a good person or only into someone who fitted someone else’s ideal. School distanced me from my mother because she was not able to share what I learned and I was not able to explain it in the language she knew.

Yet education is more than a transfer of knowledge to children and young adults. It plays a key role in personality development and self-esteem. It can give you a very warped picture of yourself and the world. Unfortunately, the schooling system in India, and probably in much of the world, is designed to make children remember exactly what they have been told, giving very little thought to the social and psychological effects. The individual is given too much attention while the wholeness of the human consciousness and consideration for others is hardly touched upon. Often in the rural areas, education tends to disregard local resources and the pride of the local people. The farmers’ children



“We are working to develop a collective conscience and thereby propel change in individuals.” Photo: R. Senthil

experience the same kind of disjointedness with their families as I did with my mother. They do not belong to the village any more. They can see themselves only as future technicians or labourers living in cities and towns. This is facilitated by the media showing the city as a better place for opportunities and good life.

What do you hope to achieve? It is very difficult for anybody to survive completely on farming at present. We hope that by getting the kind of education we are trying to give, young farmers can engage in activities alongside farming and not have to sell their lands and move to the city completely. Farmers can find ways to pool their efforts together without the assistance of outside forces. They can make more calculated decisions that may help them to stay out of debt and become prosperous.

In practice, what effect does this have on students' lives? Our first batch of students has just graduated, so we cannot say much about how their future lives will be affected. We must also keep in mind that many other factors are at play and will determine whether young people can stay in rural areas, such as the family's wishes and needs. Some of our graduates, for example, are goaded into the city by family debts or the lack of land,

working in construction to be able to repay family loans. Nonetheless, we find it gratifying that these children have not been spoiled by a system that forces them to think that white collar jobs are the only ones worth doing. They experience dignity in their labour, whatever it may entail. They respect and care for their families. They co-operate with family decisions and want to keep alive the traditions of farming and living as a family.

And what do the children's parents think? Parents of the children in our school have not been resistant to the school's curriculum, since from the beginning it has included “regular” subjects such as language, science and maths. These standard subjects are part of the school as well, although we don't teach them as separate subjects but combine them as a whole learning experience up until the 6th grade. Thereafter, standardised text books help the children bridge gaps to enrol in government schools after the 8th grade, the last year they spend in our school. Parents see that their children are helpful on the farm and read and write English. In a later stage, when it comes to choosing livelihoods, I think that, deep down, parents also know that farming is a noble occupation.

Do children influence their parents? We tried working with the parents through a farmers' group, but other natural and economic forces made this difficult. But we have seen that working with children helps them have a more pragmatic view of their family situation and their society. It helps the children take on the challenges of farming along with their families. In some cases, students are convincing their parents of the harmful effects of pesticides and are persuading them to do part of their farming organically.

Who are the teachers at the school? Currently, we have five teachers looking after 95 children. The teachers are local young people who have taken a two-year teacher training course after 12th grade. As at first they were not confident in English or in other subjects, they were invited to observe classes for about a month, give feedback and ask questions. I personally tutored them in specific subjects. They are given the basic framework to teach, and then they are given a lot of freedom to experiment and develop their own ways of dealing with difficult and challenged students. Our curriculum was prepared bilingually to facilitate the teachers' understanding of the concepts. It is also delivered to the children in both English and Tamil because we believe that children learn concepts best in their mother tongue. This also facilitates sharing of their learning with their parents back home. The

English terminology and the writing skills are developed alongside.

You are part of a network of alternative schools... Yes, we are part of two networks: a conservation network and an education network. Both of these are informal groups of individuals who are doing their best to make a difference in their world and share their experiences with each other in an informal way. It is a great advantage to meet people from diverse backgrounds. I often feel inspired by their lives and experiences. It is heartening to know that there are others like oneself who are doing as crazy or crazier things with their lives. We have copied ideas from other schools we have visited and seen, and some of our ideas may have been picked up by others. The *Vikasana* school in Bangalore, for example, has been a great source of learning for us about how to teach language, and attending workshops by the Rudolf Steiner group of schools has influenced our attitude towards art. We are open to sharing and have occasionally provided teacher training opportunities for other schools that heard about our work, both through the networks and beyond.

How can policies or politicians help? I believe that policies can do little without people becoming change agents themselves. Our school aims to influence individuals to come forth and build a community of people who are concerned about the environment and about social and cultural values. We are working to develop a collective conscience and thereby propel change in individuals. Perhaps teaching people about the value of agriculture will help them see, for instance, the skewed ways in which different products are valued. The price of a kilo of rice will be negotiated for a bargain, while the

price of a litre of Coca Cola is non-negotiable. We are demeaning the value of healthy food, while junk food is promoted at a fixed price. Education may shed light on many such reasons for the continual poverty of the farmer.

To encourage initiatives that build an alternative way of looking at the world, governments must give these types of schools special consideration and support their initiatives. Rather than forcing us to continuously go through approval procedures, it would be much more beneficial if the authorities would make it a point of regularly visiting schools like ours to see if we are following our own principle and statutes with sincerity. Our approach makes us very different from private schools!

Can your approach to education be scaled up? Personally, I am very much influenced by Schumacher's idea that "small is beautiful". I guess our kind of school has to be a small personal initiative to be successful. But there could be many small personal initiatives of this kind, since there are many young people interested in education in rural areas. The problem is that it is becoming more and more difficult for children to go to a small school in a world where education has become a big business. It is almost an industry in our country now – a robot industry of sorts where they try to smooth out the differences in individuals and mass produce people that think similarly and act in ways that they consider proper.

In the light of this loss of human intelligence and its shameful subjugation to random acts of memory, it becomes imperative to have many more small individual schools that strive to work to help the human intelligence to blossom, and the individual to be a harmonious part of a community.



Education is more than a transfer of knowledge to children and young adults. Photo: R. Senthil

ZIMSOFF and the Shashe Agro-Ecology School

While it is now widely acknowledged that a smallholder-based, agro-ecological food production system is the best way to eradicate hunger and to reduce the impact of agriculture on climate change, less attention is given to the role farmers play in sharing the lessons they have learned. Building on a farmer-to-farmer approach, the Zimbabwe Organic Smallholder Farmers Forum (ZIMSOFF) is interested in training community facilitators and trainers, helping them develop a horizontal and participatory learning system.

Nelson Mudzingwa

A member of the Eastern and Southern Africa Smallholder Farmers' Forum (ESAFF) and of La Via Campesina, ZIMSOFF was founded in 2002 during the World Summit on Sustainable Development held in Johannesburg, South Africa. ZIMSOFF is an organisation of small-scale farmers, in which all the positions of

responsibility are held by farmers. Its vision is to improve the livelihoods of small-scale farmers and empower them to defend their rights. A total of 19,000 families are currently members, organised in four regional clusters, covering the whole country except the regions of Harare and Bulawayo. Households in each region are organised as a group; a number of these form a Smallholder Farmers Organisation (SFO), and several SFOs form a cluster.

During the past ten years, and with the support of the PELUM network (Participatory Ecological Land Use Management), we have been building and implementing basic training infrastructure and facilities in these four clusters. Members have organised and held farmer-to-farmer "look and learn" visits, group meetings and workshops, together with seed fairs and other exchange meetings. These gatherings have been an important way of exchanging knowledge and information.

Farmer to farmer, community to community

One of the SFOs in the central cluster is the Shashe Endogenous Development Organisation. Based at the Masvingo Rural District Council, this group started working together in 2000 as an agro-ecological community where members of other communities could visit, spend a few days, and learn from the practices of the local farmers – especially focusing on seeds, soil and water conservation, integrated livestock management, and the local efforts to link producers and consumers. Shashe was formed by formerly landless peasants who engaged in a two-year land occupation before being awarded the land by the government's land reform programme. As in the other clusters, the Shashe Endogenous Development Organisation is particularly interested in training other farmers and enhancing a community-based and horizontal learning system. Hundreds of families are "connected", sharing the knowledge gained from their own experience.

The first meeting of agro-ecology trainers in Africa, organised by La Via Campesina and held at Shashe in

June 2011, proposed the development of a training mechanism for “peasant activists and promoters”. Since then, the aim has been to train future trainers (as promoters or facilitators) for a farmer-to-farmer programme. Funding was secured from the New Field Foundation to develop an agro-ecological school, following a similar approach to those already seen in Mozambique, Mali and Niger. Specially targeting young people and women, the Shashe Agro-Ecology School invites farmers from the local community to complete a training course on agro-ecology and sustainable agriculture, integrated land use design and participatory methodologies. The training follows a syllabus designed by PELUM, building on the “Learning Agricultures” modules prepared by ILEIA (see p. 42), and focusing in particular on those practices that are more resilient to severe climate events (droughts, storms, floods, etc.), more adaptive to a warming climate (genetically diverse seeds, shade trees, mulch and cover crops, water harvesting and conservation, etc.) and which keep carbon in the soil (i.e. the incorporation of organic matter into the soil). Our overall objective is to add value to or strengthen the existing farmer-led processes with a local team of community facilitators or promoters who act as catalysts. Their role is to showcase those practices that lead to seed and food sovereignty and, working closely with the local government extension officers, to try to influence policy-makers. It is envisaged that the school will train several hundred of such catalysts in any given year.

Methods and lessons Our objective is to work with all farmers, and together develop the knowledge and skills that will allow them to remain in

their communities and work towards their transformation. The school aims to be registered with the Ministry of Higher and Tertiary Education, to be recognised with a National Foundation Certificate, and to link itself to the Great Zimbabwe University, thus providing space for university students. The current lecturers are farmers living close to the school who have been selected by the community because of their skills and expertise. The smallholder farmer plots are being turned into “centres of excellence” on agro-ecology and sustainable agriculture.

Our experience is showing that the most successful tool for promoting farmer innovation is a community-facilitated farmer-to-farmer methodology. This horizontal communication process leads to sharing and learning between innovators (those who have developed solutions to common problems) and their peers. Farmers are more likely to believe and emulate a fellow farmer who is successfully trying a new approach on his or her own farm than to take the word of an agronomist of possibly urban origin. This, even more so, when they can visit the farm of their peer and see with their own eyes the difficulties faced, the steps taken and the results achieved.

Many answers lie in farmers’ fields and knowledge. The Shashe Agro-Ecology School is showing the benefits of farmers playing a key role in the process of sharing these lessons.

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On our way to one of the centres of excellence. Photo: ZIMSOFF

& Seeds & FFSs

The agrobiodiversity@knowledged programme initiated by Oxfam Novib and Hivos, aims at generating and sharing evidence and insights for transformation in the area of agricultural biodiversity. At the heart of the programme is a global knowledge and experience community of organisations working at various levels on this topic with millions of farmers worldwide.

For resilience and risk-spreading, as well as to meet highly diverse consumer and market demands, farmers need to be able to have a choice from a wide variety of seeds. SEARICE has developed a methodology to enhance farmers' breeding and seed selection processes, working with individuals and organisations throughout South East Asia in order to upscale results. We use the Farmer Field School methodology to do so.

SEARICE

FFor more than 30 years, the introduction of modern varieties as part of the Green Revolution, and the subsequent loss of agricultural biodiversity, has been a cause of concern for many people. Farmers have become more dependent on traders and external companies for their seeds. Fortunately, efforts like on-farm conservation are safeguarding the genetic characteristics that will otherwise disappear if farmers only plant modern varieties, and are therefore helping to increase the genetic diversity of crops available. By working with national and local partners, such as

agricultural extension departments, agricultural research centres, academic institutions, civil society organisations and farming communities, SEARICE promotes community-based conservation and sustainable use of plant genetic resources in Bhutan, Thailand, Cambodia, Laos, Vietnam and the Philippines. A key element of its approach is organising and facilitating Farmer Field Schools.

Learning about seeds FFS use a flexible training methodology based on farmers' priorities rather than a set curriculum brought in by the

extension worker. Having an empowering effect, they are a perfect approach for the plant genetic resource activities that SEARICE promotes. Within the training programme, farmers share their perspectives on the varieties that they use, those that have been lost, and those that they want to plant. It is not uncommon to find farmers who, for example, like a specific variety of rice because it is aromatic, but who would prefer if it would also have a shorter production period. Our training programme aims to help farmers search for and develop different varieties based on their needs and preferences.

As part of the FFS curriculum, farmers get to experience the whole plant breeding cycle in the first season, using the basic components of plant breeding – varietal evaluation, seed rehabilitation, actual breeding or crossing and segregating line selection. After the first season, farmers decide which aspects they would like to focus on. The varietal evaluation trial allows them to grow several varieties that meet their criteria on a demonstration plot, and then select and decide which of these varieties will work well for them in their locality. Another study field is line selection, where farmers select materials from promising or stable lines. In the third activity, seed purification, farmers learn to choose good seeds to restore a variety of which the purity and quality has deteriorated. Finally, the fourth training section involves farmers learning to do the breeding of new varieties themselves, either

through selection from early generation seeds (segregating lines) or by actual crossing selected parent materials.

At the end of the season, close to harvest time, we organise a Farmer Field Day: farmers from neighbouring communities come to learn about the different varieties that have been tested and which appear to have potential. This field day is a good time for choosing seeds for the next season – for participating farmers as well as their neighbours. The field day is a way of reporting back to the community, but also a good opportunity for lobbying and advocacy. Government officials and policy makers are usually invited so they can find out about what the farmers have been doing and (hopefully) support them in the future. In some cases, local media are also invited for wider dissemination of the farmers' initiatives.

We want farmers to be able to control their own seeds. Research centres do line selection and breeding, of course, but they have their own ideas about the characteristics that a variety should have, and only ask farmers for their opinion when the selection process is complete. By involving farmers from the beginning of the breeding process, the whole process is based on their criteria and needs, and the final product will be one that they really want. Our experience has shown that, even by the end of the first season, farmers are very eager to continue and have a clear idea on how they want to proceed.

Changing mindsets SEARICE does not implement the FFS itself, but mobilises others to do so. Working with local and national institutions is a way of scaling up the project, ensuring that more farmers are involved, and more farmers benefit. We train local extension workers – mostly from the government, but also from interested civil society organisations and schools – to conduct the FFS. We introduce the principles of adult education and the steps that make up a Farmer Field School, the process of engaging farmers in a participatory process, and of course the technical aspects related to plant breeding and the conservation of a region's plant genetic resources. Local governments can support the FFS by providing resources such as land or inputs. Research centres play an enormously important role in providing seeds for varietal selection or pre-breeding materials for segregating line selection or farmers' breeding in the FFS.

Working with these institutions also helps us bring about a change in attitudes towards working more closely with farmers. Unfortunately the dominant paradigm in these institutions is often to work top-down, seeking to impose institutional priorities on the farmers. As we partner with government agencies and other organisations, their perspectives change when



"The whole process is based on farmers' own criteria and needs, and the final product will be one that they really want." Photo: SEARICE

they see the results in the field. SEARICE provides support for at least three seasons, but we hope that by the end of the third season there is enough interest and enthusiasm among the local partners or farmers themselves to continue without external support. At this time, SEARICE withdraws but continues to provide technical backstopping on an on-call basis.

As part of our policy work, we target universities and seek to influence mainstream agricultural education to include more participatory approaches. Actively engaging students in research in the communities helps farmers to record inputs or calculate the benefits from production. But it also changes the students' mentality, encouraging them to be more engaged with farmers when they start working, rather than taking the top-down approach.

Changing extension Sometimes, when extension workers apply the FFS approach for the first time, there is some hesitation because it is new for them. SEARICE prefers to work with those who are already familiar with FFS and support its principles, but also wants to bring about change among those who are doubtful. Usually, when extensionists start seeing the results from the FFS, their perspective changes. We keep providing the trainers with support in terms of technical backstopping and reflection on their work. Every now and then a star pupil arises, who is more passionate than the others and who keeps

Farmer Field Schools

Farmer Field Schools are a structured approach to facilitate experiential learning by farmers on their own fields. This approach was developed with rice farmers in Indonesia in the early 1990s, and is now widely used in a variety of contexts. While developed initially to teach farmers about integrated pest control to reduce pesticide use, it is equally suitable for many other agro-ecological farming strategies. In a FFS, farmers are trained to systematically observe their crop ecosystem from week to week and, based on their observations, to make informed decisions on how to act next. Extension agents act as facilitators, making FFS a more participatory learning method than regular extension. Through interactive learning and field experimentation, farmers learn problem-solving skills that make them less dependent on external information sources. Ideally FFS graduates increase knowledge within their communities by disseminating their findings with other farmers. (Source: Learning AgriCultures, Module 7, ILEIA.)

taking the initiative. For example, partners such as those in Pangasinan, the Philippines, have spread the programme to other areas and even developed a FFS for school children. SEARICE can only provide minimal resources, but some partners are willing and able to obtain resources from other places and take initiative themselves.

Initially, most people we work with believe that only those with a Ph.D., or those who work at an agricultural research centre, should be engaged in plant breeding. They think we are crazy to enhance farmers' breeding skills in this way. But they change their minds when they see what farmers are capable of. This is why the Farmer Field Days are such an important and inspiring part of the process: they highlight what farmers have learned and the potential they have for doing this kind of work. We have already developed a pool of farmer breeders, and they have done remarkable work. One farmer in the Philippines, Jerry Demon, breeds corn and claims he can surpass the production of GM corn.

This process does not only help others to realise what farmers are capable of, but also farmers themselves. Talking to farmers, it becomes clear how it has empowered them. In the northern Philippines, farmers have bred and now produce a variety of rice suitable for the rice cake industry, which used to buy rice from outside the province. One of the farmers approached the rice cake producers and challenged them: *"tell me what sort of variety you want, and I will be able to produce that."* Another farmer told us that he was not too worried about crop failure in the face of natural disasters: *"I know even if my crops get destroyed by a calamity, I still have the knowledge to continue producing very good variety seeds, and that I will be able to pick up and recover."*

Sharing knowledge As part of the Agricultural Biodiversity Community we are all learning from each other. For instance, at SEARICE we are discussing which marketing elements are required to guarantee farmers' rights and to continue to promote biodiversity. The community allows us to explore the solutions that other organisations have found. In a broader sense, international knowledge exchange helps us share our experiences and convince others to take a farmer-centred approach in the policy and practice of education.

Based in the Philippines, **Southeast Asia Regional Initiatives for Community Empowerment (SEARICE)**, is a regional non-government organisation which promotes and implements community-based conservation, development and sustainable use of plant genetic resources. E-mail: searice@searice.org.ph. For more information about the programme, write to **Sarah Doornbos**, knowledge officer, Agrobiodiversity@knowledged. E-mail: s.doornbos@hivos.nl

Four out of every five people in the Sahel depend on agriculture. Over 70% of them are illiterate, and the majority of them are women. This is especially shocking, considering the fact that agriculture is a major engine of development. In Burkina Faso, agriculture makes up about 40% of the GDP.

The UN's decade of education for sustainable development (2005-2014) has brought few benefits for the rural population in the Sahel. Most of the region's education programmes are inadequate, discriminating against girls and not taking into account the differing social, cultural and economic contexts. They draw rural youth into urban centres that are ill-prepared for an influx of people lacking technical skills. As a result, the ranks of the unemployed get larger every day.

Obviously, education is important to inspire behavioural change in agriculture. Literate and educated farmers are more inclined to adopt agricultural innovations and better able to access information that can strengthen their farming systems. But how can it be best done? Here, I present three examples of innovative education strategies that we use in Burkina Faso.

Study tours to rural areas. During these tours, elementary school pupils and their teachers learn about integrated soil fertility management, including the establishment of contour bunds, manure pits and composting. They then raise their parents' awareness. Many of these former pupils are now agents of change in their communities. Similar environmental education tours can be used to help farmers learn about the effects of climate change on their production and their livelihoods and possible adaptation measures.

Bilingual education programmes. These programmes teach in French and in the children's mother tongue, involving the whole community. Themes include animal husbandry, gardening, community organisation and socio-economic innovations. This way of educating strengthens endogenous knowledge. It also raises awareness in the communities about the need to train young people in production techniques in order to reduce their exodus to the cities. And it makes students more aware of the importance of natural resources.

Training of farmers by farmers is an effective strategy to increase farmers' access to information and technical knowledge. Farmers are more readily convinced by information and knowledge provided by peers who live in the same environment and face similar challenges. A review of this strategy has confirmed its relevance and effectiveness in scaling up agricultural practices that increase food security and farming system resilience.

I believe these experiences can provide us with some valuable inspiration!

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Inspiring forms of education

We are learning by doing

Over 75 percent of Afghanistan's population lives in rural areas, and agriculture is the country's main economic activity. After three decades of war and political instability, agricultural education is once again playing an important role, and many young Afghans are preparing themselves to become teachers. Special efforts are being made to train women as teachers in response to one of the country's most difficult challenges: gender inequality.

Mundie Salm and Ayesha Sabri

Agriculture is the backbone of Afghanistan's economy, and is dominated by smallholders who mostly grow wheat, barley, fruits and nuts. Approximately half of the country is also used as seasonal rangelands for livestock, especially small ruminants. However, more than thirty years of war and instability have had serious consequences on these activities, on farm infrastructure and on the institutions that support agriculture. This situation has also led to a loss and failure to renew the knowledge and skills needed to produce, innovate and adapt to changes. One of the priorities of the Afghan government is to rebuild the agricultural education system throughout the country to ensure that young people not only get access to education, but to drive innovation in the agricultural sector as a whole. The Agricultural Technical Vocational Education Training (ATVET) project forms part of the response to this need.

Agricultural education Afghanistan has seen the number of agricultural high schools grow from 30 in 2011 to almost 100 throughout in 2013. To support this development, the National Agriculture

Education College (NAEC) was established in Kabul in 2011, providing a two-year teacher training programme for people going on to work at the agricultural high schools. NAEC has a faculty of 30 teachers, 6 of whom are women. Now in its second year, the training college has 275 students coming from 23 of Afghanistan's 34 provinces. This year, the student body includes a group of 19 female students hoping to become teachers.

Students undergo a rigorous entrance examination. NAEC staff is finding that Afghanistan's education system has lagged behind – not only in terms of students missing important practical skills in agriculture, but also in terms of teaching methodologies. Formal education still is mainly based around a system of learning by rote, and the learning materials are largely theoretical, based on textbooks rather than on practical farming and field exercises. The result is that if students have not grown up on a farm, they lack experience in literally “getting their hands dirty”, and find it difficult to encourage others to do the same when they become teachers.

Practical skills A key didactic strategy in the NAEC curriculum is to develop a hands-on training



Learning by doing at NAEC's own greenhouse.

Photo: Michelle Glenn

process that also stimulates the future teachers to use more creative teaching methods. The school grounds contain 5 *jeribs*, the equivalent of one hectare of land, and include a permaculture garden and greenhouse. Students are encouraged to experiment with what they have learnt, and to compare different farming approaches, including sustainable processes like mulching and composting. Muhammad Ayaz, a current second year student at NAEC, is pleased with this approach: "At the Agriculture High Schools we studied different agriculture concepts but only theoretically. However, here at NAEC, we are 'learning by doing', practising pruning, grafting, growing vegetables inside and outside the greenhouse, and more. I am very happy that I can now tell people that I know about these practices."

At the beginning of 2013, 21 of NAEC's faculty received training in participatory teaching methods (e.g. more interactive teaching, role play, debates, field visits etc.) at the International Institute of Rural Reconstruction (IIRR) in the Philippines. NAEC's Education and Training Advisor, Michelle Glenn, sees clear benefits in how the teachers carry these new methods into their own classrooms: "This is the first time the students at NAEC have been taught in this way: they

are very enthusiastic once they get over their initial shyness in participating. In fact, our second year students are demanding even more interaction now."

More female students In Afghanistan, women are involved in most farming activities, including poultry and dairy production. Nevertheless, agriculture is, in general, a male domain. At present, only a few girls attend agricultural education institutions, though more and more are becoming interested in improving their knowledge and skills. Afghan society currently prefers that girls are taught by female teachers, and teaching is one of the few accepted public roles for women. To encourage higher attendance at these agricultural high schools, it is important to train more girls to become teachers at them.

Besides the problem of few female AHS graduates, other barriers stop female candidates from applying to the NAEC. One important factor is that students' families do not want their daughters to live away from home in a dormitory. NAEC is tackling these kinds of issues in a stepwise fashion. A first decision was to focus on female candidates from the Kabul area only, so that they could still live at home. It was then decided to arrange daily transportation to the college. Another step was to create an agricultural preparatory course for the female candidates, to allow them to catch up on basic agricultural knowledge. Lastly, the group of female students are taught in classes separate from the males.

All of these efforts are paying off. After the prep course, the girls were given the same entrance exam as the rest of the student body. They ended up scoring very highly, with the lowest score being 75%, while the entry requirement was 50%. They gained a lot of respect from the rest of the students through this achievement. The group of 19 female students is very motivated. The college hopes that once these girls have shown how successful they can be, the rest of the barriers can be removed one by one. One idea for example, is to establish a female dormitory so that girls can come from other areas of the country.

These are still early days for the NAEC and the agricultural high schools. Setting up new institutions and changing societal attitudes in such an unstable and uncertain environment is fraught with challenges. Slowly but surely, a positive and remarkable change in the Afghan agricultural education system will come.

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Can innovation fairs stimulate social learning?

The Eastern African Farmer Innovation Fair (EAFIF), held in May 2013 in Nairobi, brought together 50 farmer innovators from Ethiopia, Kenya, Tanzania and Uganda, all of whom showcased their creativity. EAFIF was an attempt to stimulate a social learning process, encouraging those concerned with agricultural research and development (ARD) to engage in joint learning and action.



Photo: Laurens van Veldhuizen

Planned and organised by a group of governmental and non-governmental agencies in Kenya and co-ordinated by Prolinnova–Kenya and the AgriProFocus (APF) AgriHub, EAFIF was also the launching pad for an international workshop on Agricultural Innovation Systems in Africa (AISA), which had an explicit focus on recognising smallholders as sources of innovation. In AISA, several initiatives –including Prolinnova, CCAFS, JOLISAA (Joint Learning in Innovation Systems in African Agriculture) and AusAID’s Food System Innovation for Food Security project– tried to gain a better understanding of agricultural innovation processes, focusing on the role of smallholders. Women and men farmers from the four eastern African countries gave their messages to the AISA participants during the opening session of the workshop, held on the final afternoon of the EAFIF. In this way, smallholders’ voices guided the deliberations on how research, practice and policy can strengthen innovation processes in smallholder farming. The interaction during the EAFIF and the opening session of the AISA workshop was meant to stimulate a social learning process that will link different types of knowledge and lead to joint action.

The AISA participants –mainly scientists and academics– gained insights into how innovation happens in smallholder settings. They recognised the farmers as “creative, innovative and courageous” and wanted to “nurture farmer capacities to do research”. The farmers invited the scientists to collaborate in improving local innovations.

Many participants now want to hold similar events in their home countries. However, it is quite expensive and time-consuming to organise such farmer innovation fairs, and it is not always easy for farmers to take part in them. This raises a number of questions. Are such innovation fairs worth it? Do they really broaden social learning? Are there more effective and less costly ways of stimulating learning among farmers and drawing in other ARD actors in ways that respect farmers’ knowledge and creativity – while also stimulating farmers to value the knowledge of formal scientists?

What other experiences and insights do you have about this? Please write to **Ann Waters-Bayer** of Prolinnova (waters-bayer@web.de) or to **Jorge Chavez-Tafur** at ILEIA (j.chavez-tafur@ileia.org). For blogs, photos and videos from the EAFIF, see <http://aisa2013.wikispaces.com/farmer+fair>

Part of a positive trend

While I was studying at university and working at an NGO I started to develop a vision about sustainable farming. Then I realised that having an opinion about it is nice, but how about actually doing it? I decided I wanted to learn to farm.

At the Warmonderhof organic farming school in the Netherlands, where I am currently doing a two-year course, I have met many people with the same dream. Young people, men and women (about half of the students are female), people switching careers, people who also have another job, and people who already farm. All of them want to practise sustainable agriculture. Meeting them and hearing about their passion for farming is encouraging, as it often seems as if the rest of the world thinks you are crazy if you want to become a farmer.

Gaining practical knowledge on sustainable farming inspires me and my fellow students. We learn to integrate crop rotation, livestock keeping, green manuring, agrobiodiversity, horticulture and arable farming. We also learn to think about the position of the farmer, as we need to be able to sustain our lives as a farmer. We are part of a movement of farmers and consumers who can do things differently. When combining the super-sophisticated functions of nature with clever human solutions and creativity, the possibilities are endless. Think about it: invisible micro-organisms transform dead plant material into fertile soil. If only you provide them with what they like most (a well balanced mix of air, water, and plant materials) they will even do it faster for you!

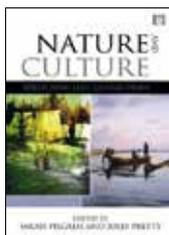


After getting a Master's degree in 2009 at Wageningen University, **Klarien Kligen** is now studying to become an organic farmer at the Warmonderhof organic farming school.
E-mail: klarien@hotmail.com



And also: only water, sunlight, and soil is needed to make plants grow. Nature will just "give" us fruit, vegetables, fibre, fodder, shelter, clean water and biodiversity... All we have to do is take care of her! It is no longer a matter of calculating inputs and outputs and exploiting the natural resources; it is about inventing new connections between consumers and producers, and about working creatively with nature to enjoy the fruits of these processes.

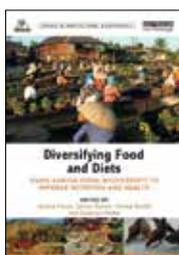
In the global context of scale enlargement, pollution, zoonotic diseases, and the bankruptcy of conventional farming, this alternative approach can make agriculture viable and attractive again for a new generation of farmers. A total of seven farmers stop farming every day in the Netherlands. At the same time, the number of Warmonderhof students doubles each year. It feels great to be a part of that shift. I am so curious to see what our future farms will look like!



Nature and culture: Rebuilding lost connections

S. Pilgrim and J. Pretty (eds.), 2013. Routledge, Oxon. 368 pages.

That biodiversity and cultural diversity form the basis of resilience, that they are both in decline, and that something must be done about it, is all well recognised. Cultural diversity and biodiversity are, however, often seen as two distinct entities, and efforts to tackle their loss are only directed at one or the other. According to this book, this division is rooted in the common disciplinary divide between the natural and the social sciences and in the modernist tendency to subject nature to human control. The authors argue that an approach is needed that (re)integrates cultural diversity and biodiversity. A start is made in sections on science, landscapes, hunting and agriculture.



Diversifying food and diets: Using agricultural biodiversity to improve nutrition and health

J. Fanzo, D. Hunter, T. Borelli and F. Mattei, 2013. Routledge, Oxon. 275 pages.

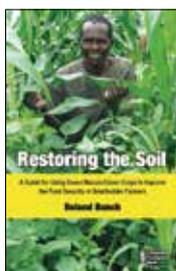
With 868 million food insecure people, 2 billion suffering from micronutrient deficiency and 1.4 billion overweight, something is not quite right with our global food system. Agriculture, this book argues, needs to play a new role. One that will improve dietary diversity and create value chains that are more nutrition-sensitive. Agrobiodiversity plays a key role here as it can improve dietary diversity, provide a safeguard against hunger and strengthen local food systems. The first part of the book looks at approaches that provide stronger links between agriculture, biodiversity and nutrition. The second looks at creating an enabling environment to mobilise agrobiodiversity for improved food and nutritional security. This is complemented by a third section which presents successful case studies.



Investing in smallholder agriculture for food security: A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security

HLPE, 2013. Rome. 110 pages.

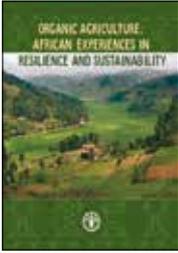
The High Level Panel of Experts on Food Security is back with another publication. Upon request of the Committee on World Food Security, this report seeks to identify the constraints to investment in smallholder agriculture and ways to overcome them. The report elaborates on some essential but often overlooked issues. This includes the delicate task of defining smallholder agriculture, understanding what it covers and what the scope and purpose of investments should be. The report shows the many obstacles that make it difficult for farmers to access assets, markets and institutions. It also elaborates on strategies that have proved effective in overcoming these obstacles and provides a set of policy recommendations.



Restoring the soil: A guide for using green manure/cover crops to improve the food security of smallholder farmers

R. Bunch, 2013. Canadian Foodgrains Bank, Winnipeg. 94 pages.

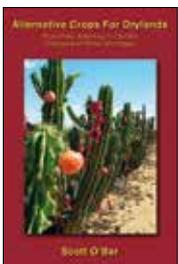
Green manures and cover crops are back in favour, but the challenge for farmers is to pick the right ones: this is no easy task. More than a hundred different cover crops and hundreds of cover-cropping systems are currently used by farmers. Cover crops are used for different purposes including fertilisation, weed control and as a source of food. Many factors must be taken into account to select an appropriate crop, from the existing cropping system to land ownership patterns. This book is a guide to selecting the appropriate cover crop and is based on the rich and diverse practices of smallholder farmers around the world.



Organic agriculture: African experiences in resilience and sustainability

R. Auerbach, G. Rundgren and N. El-Hage Scialabba, 2013. FAO, Rome. 200 pages.

There are plenty of organic agriculture success stories in Africa and this book contains some of them. It expands on the research presented at the “Mainstreaming organic agriculture in the African development agenda” conference held in Lusaka. The book shows that success lies in whole farm management, healthy soils and effective nutrient cycling. It argues that the focus of organic agriculture should not be on substituting chemical inputs with external organic ones. Instead, natural processes should be enhanced, and complex plant and animal interactions managed to reduce the need for external inputs. This can only be achieved by building on traditional community knowledge. The book contains sections on community-based livestock systems, eco-functional intensification and smallholder knowledge.



Alternative crops for drylands: Proactively adapting to climate change and water shortages

S. O’Bar 2013, Amaigabe press, Santa Barbara. 324 pages.

This book describes an extensive number of alternative dryland crops around the world. These are important because they require little water and are edible, medicinal or have some other use. Most are trees that are resilient to drought, give relatively high yields and require little maintenance. Some of the plants described have been used by indigenous communities for generations but are disappearing due to the spread of modern agriculture. The book contains information ranging from botanical features to culinary uses and ethno-botanical features. A reference list allows the reader to find plants with specific characteristics, including nitrogen fixing properties, and shade tolerant and salt tolerant species.

More on education

The assumed superiority of scientific knowledge is coming under increasing scrutiny and the importance of other forms of knowledge and learning is being increasingly recognised. In “The university at a crossroads”, Boaventura de Sousa Santos (2012) explores whether the university as we know it has a future in producing knowledge that is relevant to society. The website of the Paulo Freire Institute presents tools and approaches that use people’s knowledge and life experiences as the raw materials for education. In “Learning for sustainability in times of accelerating change” (A. Wals and P.B. Corcoran, eds., 2012), the authors explore the possibilities for de-

signing and facilitating learning-based change.

Articulating these plural forms of knowledge requires new approaches to education and research. The Excluded Voices Initiative challenges the often narrow interests of agricultural research. It aims to make the voices of small-scale producers and other excluded citizens heard, and count, in the governance and process of agricultural research. The website contains several resources, including the workshop report “Democratising the governance of food systems: Citizens rethinking food and agricultural research for the public good”. A similar perspective is taken in



the publications: “Democratising agricultural research for food sovereignty in West Africa” (M. Pimbert et al. 2011) and “Participatory research and on-farm management of agricultural biodiversity in Europe” (M. Pimbert, 2011). (LvdB)

A new cadre of scientists- activists

The curricula followed by most universities in Latin America are organised along narrow disciplinary lines, preventing students from fully understanding the complexities of the food and natural resource systems. SOCLA, the Latin American Scientific Society of Agroecology, is encouraging change with the Doctoral Programme run in collaboration with the Universidad de Antioquia, in Medellin, Colombia, and the Universidad Agraria Nacional in Managua, Nicaragua.

Miguel A. Altieri and Clara Nicholls

For decades, Latin American agro-ecologists have advocated a radical transformation of the world's agricultural systems, looking not only at the agronomic aspects but also at the social, political, cultural and economic forces that drive agricultural development. Rural movements such as La Vía Campesina have long argued that farmers need land to produce food for their own communities, and for this reason they advocate genuine access to and control over land, water and agrobiodiversity. SOCLA is convinced that the changes promoted by farmers and their organisations need to be complemented by a similar revolt within academic and research institutions.

SOCLA believes that incorporating the principles of agro-ecology (from plant health and soil ecology to land politics and food sovereignty) into the educational process is one way to correct the current agricultural educational deficiencies in our institutions. By focusing on the interface between agriculture, the social system and the global environment, agro-ecological thought can help

design a more creative and integrated curriculum. This, in turn, can help students to develop new capacities, making them better prepared to face future challenges and to guide agriculture through a path that sustains productivity while conserving natural resources and biodiversity, in socially equitable, culturally plural and economically viable ways.

Ideas for new curricula SOCLA's doctoral programmes are made up of three modules, held in Medellin or Managua, each lasting a month, covering the scientific basis of agro-ecology (biodiversity, resiliency, etc.), sustainable rural development (traditional knowledge systems, land reform) and research methods (indicators, experimental design). Training includes lectures by researchers such as Peter Rosset, Steve Gliessman and Eric Holt-Giménez, complemented with readings and group discussions, and presentations of written and oral reports. As it focuses on an "action learning" approach, the programme also involves farm internships. The



A new group of active promoters of food sovereignty and the welfare of family farming. Photos: SOCLA

internships are planned during term time, when all the students are together, but take place in the students' home areas, where they work with local farmers and organisations. In preparation for their research, students are expected to carry out a thorough diagnosis, considering indicators for sustainability or resilience, and propose changes that will enhance farm stability in the face of external shocks. Research for a doctoral thesis must be conducted in the student's country of origin and always involves looking at possible solutions to the key problems affecting rural livelihoods.

After graduation, students are expected to possess a strong theoretical background, with methodological, analytical and practical skills. We aim at graduates with the skills to decipher complex interactions and to design, manage and evaluate agro-ecosystems that are diverse and resilient. Graduates are expected to acknowledge the benefits of traditional forms of agriculture, and to be able to mobilise local skills, technologies and resources for endogenous development. An equally important aim is to develop skills to empower social groups, to propose enabling policies, and to sys-

tematise and evaluate local development experiences in order to set a scaling up process in motion.

Students and graduates While the course in Nicaragua only started this year, a total of 45 students are part of the programme in Colombia, from 8 different countries. Most of them lecture at different universities, so it is expected that they will promote curricular changes in their own programmes by creating courses on agro-ecology and research along agro-ecological lines. Ph.D. students working in research institutions are expected to implement a research agenda that is tailored to the needs and circumstances of small-scale farmers, and that leads to alternatives to the industrial agriculture movement. Graduates from SOCLA's agro-ecology doctorate will be active promoters of food sovereignty and the welfare of family farmers.

Miguel A. Altieri is SOCLA's president. **Clara I. Nicholls** is the co-ordinator of the Latin American Doctoral Programme at Colombia's Universidad de Antioquia. E-mail: agroeco3@berkeley.edu

"There is no doubt that we need professionals who will look at yields and outputs, but in relation to the lack of opportunities in rural areas, equity and power issues, pollution and health, or land grabs. A programme like this one enormously helps us to reflect on what we know, and what we need to know, in order to improve agricultural production. We urgently need to develop new ways of 'doing science'.

"I was first invited to join the group of lecturers in 2010, and every year I have presented what we have done and achieved in Cuba. I especially appreciate that all the students have a rich

experience, and that we can work together on the basis of that experience. Every group is a new challenge, and every time I have enjoyed the discussions and the ideas that come from the groups. What I have liked most, however, is that working together gives me new insights and ideas. I am growing together with all the students."

Fernando Funes Mozote lectures in both Medellín and Managua. A researcher at Cuba's Pasture and Forage Research Institute, he is, since December 2011, also a farmer.

Efforts to improve educational content and access in rural areas vary widely. Here we show just a few initiatives to develop a broader and more inclusive approach, focusing on the curricula, on the tools used or the target groups.

Peru

Young entrepreneurs

In Satipo, a town in eastern Peru, a group of young students gets together at school. But this is not a typical algebra, chemistry or history lesson – it’s all about coffee. Supported by SOS Faim and VECO Andino, three local coffee co-operatives are now working with the new generation of coffee producers. To help this next generation to see farming as a viable alternative, the co-operatives are working with three secondary schools to include subjects related to coffee production in the curriculum, including commercialisation and business planning. Hands-on projects, workshops and presentations enable the students to develop the skills needed to improve their coffee production and to take up a role as future leaders of their organisations.



Photo: VECO Andino

The co-operatives have recognised that teaching the students to see their farm as a business enterprise will help them to understand that running the family farm is a better option than migrating. The independence gained by running their own farm is an important factor in such decisions as it is more attractive than being employed by big companies or becoming one of the many under- or unemployed people in the cities.

The association has formed a Youth Committee, where youth are encouraged to participate and voice their opinion, thus already contributing to their co-operative and to their families’ wellbeing.

For more information contact VECO Andino. E-mail: vecoandino2@veco-andino.org

Palestine

Sharing knowledge

The West Bank enjoys a varied climate and ecosystem, which translates into year-round crop production. Yet, Palestinian farmers constantly struggle to reap benefits from the land. Climate change is tangible in the recurrent droughts and floods, and the imposed security measures and restrictions have cut farmers’ access to their land and precious water resources. Palestinian farmers have discovered that the key to finding solutions lies in sharing their innovations. ANERA, a non-profit organisation, is supporting this process by producing and distributing short video clips. The first fifteen videos have been uploaded on a special Facebook page which, having been seen by hundreds of visitors, has led to an exchange of opinions and ideas and the creation of an informal “network of practitioners”. The videos –covering both mistakes

and successes– focus on the two key challenges faced by Palestinian farmers: land restoration and water conservation. Recognising that sharing knowledge plays an important role in meeting these challenges, ANERA is now working with the Ministry of Agriculture and eight NGOs so that their officials will join these efforts and encourage even more farmers to participate.

For more information contact Naser Qadous, Agricultural Projects Manager at ANERA. E-mail: naser@anera-jwg.org.



Photo: ANERA

Indonesia

Groups versus individuals

Focusing on many of the issues related to farming, extension programmes commonly provide a complement to schools and other formal education activities in many parts of the world. Not surprisingly, one of the issues that they often address is climate change. A common feature of programmes that show successful results in promoting adaptation to change is a focus on the community as a whole, and not just on individual farmers. Adaptation depends on co-operation among farmers, which is based on shared information and ideas. This has been seen in the Juwana watershed in Indonesia, where farmers' groups pump up water for irrigation from the river during dryer periods. This initiative was reported at one of the regional workshops of the CATALYST project. This project is implemented by a consortium of organisations and seeks to reduce disaster risk under climate change through networking and capacity building. Its work also shows that groups can have more influence on authorities than individual efforts. For example, farmers in Juwana have been able to convince the district authority to change the dam

water distribution schedule and to start a dredging programme in order to reduce the likelihood of harvest failure. While community action is more effective, the interaction between communities also helps spread successful practices.

For more information contact Jos Timmerman at the Alterra Wageningen Research Institute (jos.timmeman@wur.nl) or visit the project website: www.catalyst-project.eu



Photo: SHEEP-Indonesia Foundation

Laos

Developing inclusive education

Although gender equity is promoted in the Lao People's Democratic Republic, women's access to formal education in agriculture and forestry, as in many other countries, remains difficult. The same can be said of children and young adults from the country's many different ethnic groups. Interested in reforming its education and extension strategies, the Ministry of Agriculture and Forestry started the SURAFCO project in 2009, first piloting it at the Northern

Agriculture and Forestry College (NAFC) in the province of Luang Prabang. Its activities started with an analysis of current access possibilities to higher education, focusing on the roles that remoteness, gender and ethnicity play. Results showed that the most important factor is remoteness. This, however, was also seen to be linked to cultural norms: girls in remoter areas do not go to school as they support their families from an early age. Parents from ethnic groups perceive the social values and practical work they can learn at home as more important, and rarely see the value of sending their children to school. Ethnic and gender inclusiveness is now part of the curriculum, both in terms of contents (knowledge, attitude) and teaching methods (skills, attitude). Another important factor is paying attention to the composition of the staff and ensuring that there are female teachers to serve as role models.

For more information contact Maria Klossner at the Bern University of Applied Sciences (maria.klossner@bfh.ch) or visit the NAFC website: www.nafclao.org

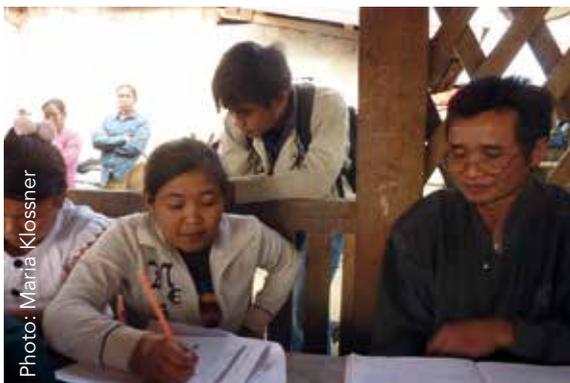


Photo: Maria Klossner

Reflecting on practice

For a very long time, rural extension in Latin America, and probably in most developing countries, has followed a transfer of technology (ToT) approach, aiming at transferring modern, input-based technologies from experts to farmers. This approach, also termed “diffusionism”, assumes that true knowledge lies solely in the hands of so-called experts, while farmers are perceived as ignorant, traditional and “resistant to change”. In spite of its evident failures, the ToT model still shapes extension programmes and projects. Together with farmers and extension agents, our work in Paraguay tried to change the resulting practices in the field.

Fernando Landini and Vanina Bianqui

The ToT approach has been heavily criticised by many scholars and practitioners, as putting small-scale farmers and poor rural producers in the role of passive participants who are expected to adopt externally-generated technologies.

One of the leading critics was the Brazilian educator Paulo Freire. Back in the 1960s and 1970s he came to prominence after proposing to redefine rural extension as a process of communication among equals aimed at finding solutions to the problems found in rural areas. Sadly, many years later, and in the same countries where he worked and had a strong influence, we still see that the attitudes and practices of rural extensionists are shaped by a diffusionist mindset. This poses a big challenge to making extension practices more participatory and dialogue-based.

A training proposal Hoping to strengthen the Paraguayan public rural extension system, the Agricultural Extension Directorate of the Ministry of Agriculture and Husbandry, together with the NGO Action Against Hunger (ACF International), proposed a diagnosis of the problems faced by the public extension system, focusing specifically on the Caazapá Department. This area was chosen for different reasons: it has the highest poverty levels in the country, and family farmers make up the highest percentage of the population. They usually grow *mandioca* (or cassava) and maize, and in some cases sesame and cotton. Their soils are poor, and their farm sizes far smaller than the national average.

After interviewing many of the family farmers, and talking to rural extensionists and institutional authorities, we found a high degree of consensus about

the main difficulties. They all seemed to agree that the main problem was the model that defined all extension activities, and the pre-eminence given to the ToT approach. At the same time, the different stakeholders interviewed almost universally envisaged an alternative participatory approach to extension that would better respond to the needs of small-scale farmers, and a more practical training approach for working with them. ACF asked us to develop a training proposal that would help the Caazapá extensionists re-shape their practices and that could serve as a general example for the rest of the country.

We asked rural extensionists from three different Paraguayan departments about their training interests and their preferred pedagogical methodologies. We also asked about the most common concrete problems in the field. These preliminary inputs were complemented by more than 150 responses to a national survey. After building the preliminary guidelines for a training proposal, we organised a meeting with the rural extensionists in Caazapá to share our findings and analyse and adjust our training proposal.

The training took place between May and December 2011 in the city of Caazapá with a group of approximately 30 extensionists. It consisted of eight modules, one per month, each lasting two days. The training included information on rural extension methodologies; popular education; the importance of participatory processes; the difference between Western and peasant and indigenous worldviews; group processes and co-operatives; the role of gender issues in rural extension; pedagogy; power issues and the relationship between extensionists and farmers; and the process of adoption of technologies. Because of the severe decline in the fertility of the local soils, one of the modules looked at this issue in detail and at the importance of an agro-ecological production system – though paying special attention so that this would not become another “package” that needed to be “transferred” to all farmers, and focused instead on considering and building on local knowledge.

Aiming not only to increase rural extensionists’ conceptual or theoretical knowledge, but to fundamentally reorganise their way of doing rural extension, we included training contents as part of a reflexive, critical process which stemmed from the practical problems faced in the field. This was the first part of the methodology. The experiences of all participants and the material we had prepared were combined so as to generate potential solutions, which were expressed in concrete and practical terms. Finally, there was a participatory evaluation of the training at the end of each module to help us all prepare for the next session. At this juncture, we discussed the content of the next module, encouraging participants to let us know about the practical problems that they wanted to address. These comments were then shared with



Interviewees and hosts in San Juan Nepomuceno, department of Caazapá, Paraguay. Photos: Eduardo Godoy (ACF) / Zulema Barilari / Fernando Landini

the trainers for the next module, helping them prepare for their session. Additionally, each module started with a session on the implementation of the proposals arising from previous sessions, in order to address any issues that could have emerged and to refresh the ideas generated.

A key element of the training workshops was to employ a facilitator (a psychologist by training) for the whole process, with special responsibility for maintaining the participatory character of the trainings. This was a very important factor given that many trainers, despite being experts in their fields, were not able to facilitate truly participative interactions. The facilitator also catalysed the collective process of reflection on practice, which included pointing out or highlighting how the extensionists’ beliefs or attitudes were supporting a hierarchical, ToT approach to rural extension. For instance, during the first module, when describing

some of the practical problems they regularly found in the field, participants consistently described small-scale farmers as “traditional” and “resistant to innovations”, implying that these factors were the reason for farmers not adopting what was offered to them. The facilitator played a key role in drawing extensionists’ attention to their focus on what farmers did or didn’t do, while neglecting their own role and the appropriateness of their proposals.

Implementation Running this process was not altogether easy. At first, the participants found it difficult to play an active role during the workshop sessions. It also proved difficult to develop concrete ways to implement the proposals that emerged, and even harder to put these mechanisms into practice. Nonetheless, all participants agreed that the course was worthwhile as it helped them see their work through different eyes, and led them to change their way of doing rural extension. They were able to closely examine how they related to farmers, which helped them understand why their work sometimes didn’t achieve the results they hoped for.

The workshops proved useful in reshaping extensionists’ practices. Having gone through the whole process, participants now see their work more as a dialogical, horizontal, participatory and flexible activity. Several months after the trainings, we asked the participants’ opinions about the training process. The most valued aspects were the opportunity to discuss issues together (the participatory, collective approach) and the clear, practical implications of the proposal. Interestingly, the early modules generated some anxiety as the participants saw how their existing attitudes (which they perceived as negative) shaped their practices, but did not have any alternative model to rely on. Fortunately, over time, the course helped

them develop a different approach. As one of the participants said, “*the idea we previously had was that the extensionist had to provide everything, all solutions. But in the course we learned that it’s different... an education process can only occur with the total participation of the families, the people that are being supported.*”

Developing things further These positive results motivated the Agricultural Extension Directorate to try to implement a similar process in other parts of the country, but these ideas were unfortunately cut short with the arrival of a new national government. However, working groups within the *Instituto Nacional de Tecnología Agropecuaria* in neighbouring Argentina have requested a similar training process. This is encouraging: although we feel the approach cannot be applied directly in a different context, our experience may be of use for others. An important point here, once again, is that this is not a model that should be replicated absolutely in a new setting, but an approach to build together, on the basis of the extensionists’ experience and practice, their needs and the challenges they face. What we have seen is the advantage of starting from their problems, using a participatory and not hierarchical approach to teaching, and incorporating a reflexive and critical processes guided by facilitators.

Fernando Landini (landini_fer@hotmail.com) works as a researcher in the National Council of Scientific and Technological Research (CONICET), the Universities of Buenos Aires and Cuenca del Plata. He leads a research group in the Psychology of Rural Development which supports extension practice. **Vanina Bianqui** is completing a Ph.D. in psychology at the University of Buenos Aires, where she also lectures.

“Education can only occur with the total participation of the families, the people that are being supported”

Photos: Fernando Landini



Recognising that education is vital for development, one of the Millennium Development Goals (MDG) is to achieve universal primary education, with all boys and girls attending school by 2015. Looking at the rural areas of developing countries this will certainly make for a significant improvement, improving the skills base and the potential of local communities. But will it be enough to strengthen and expand agriculture?

In industrialised countries only a small percentage of the primary school students will make a future living in agriculture. Urbanisation is also a strong trend in developing countries. Still, farming is and will remain a reality and a suitable mode of living for hundreds of millions around the world. Many young people will follow in their parents' footsteps, becoming growers or herders and entrepreneurs alike. How can we prepare these pupils best for their future agricultural careers? Is the uniform national primary education system sufficiently geared to their realities? And what about the education rights of middle-aged women and men who missed out on primary education in the past but are able and eager to learn, and in their best years to exploit their land and resources in a sustainable way?

Agriculture is not foot-loose. Production depends on the context and available resources, including the quality of the land, the local climate, and the quality of the services provided by third parties. But most of all, it depends on the knowledge and skills of the men and women working on the farms. The best way to increase agricultural productivity is to support the continuous development of their knowledge and skills on the spot: learning on the field and learning from the field.

Field-based education can be relatively low-cost and yield rapid improvements in production when the focus is on group learning and innovation, and building on what participants know and wish to learn and apply. Farmer Field Schools (FFS) have shown such positive results, and are an exemplary model to follow. Tried in many countries and in different contexts, FFS support groups of farmers in a real-life setting. FFS enhance the observation, analysis and learning skills of participants while focusing on the real challenges they face.

Governments, communities and donors are called upon to invest in today's and tomorrow's farmers with Farmer Field School-based approaches, to help increase production, to reduce poverty and to strengthen farming communities. There is no better way to strengthen agriculture and the rural areas than by investing in the human capacity that sustains it.

Peter Ton works as a consultant on sustainable agriculture, value chains and corporate social responsibility. He has been involved in evaluation of FFS programs in West, Central and East Africa, and in the 2012 FAO Global Review of FFS experiences. E-mail: peter-ton@xs4all.nl



Invest in people

Sudan: Stories from the field

In early 2013, a group of 22 highly motivated agricultural practitioners from all over Sudan gathered in the city of Khartoum for a workshop on documentation and communication run by ILEIA to capture, analyse and disseminate practical experiences from the field.

The workshop in Sudan was a component of KariaNet, a knowledge sharing network on agriculture in the Middle East and Northern Africa (MENA). KariaNet identified the need to overcome the limited access to practical and local people's knowledge in the MENA region, and invited ILEIA to initiate a process of documentation and systematisation in several countries, including Sudan, Lebanon, Morocco and Algeria.

In Sudan, workshop participants not only systematically analysed their work experiences, but

also took the time to transform their most important lessons into an article, like the one written by El Mwjtaba Yousif Ahmed (p. 39). He, like many other practitioners within the region, has valuable knowledge gained from practice, which can be of great value to colleagues working in rural development around the world. As one participant said, "In Sudan, we have an oral culture, we don't write things down. If we want other people to know what we have learnt and to pass on our knowledge and insights to future generations, then we really have to start documenting our lessons learned."

The articles from Sudan have been compiled into a book, *Learning for rural change: 18 stories from Sudan*. For more information, please visit www.ileia.org and www.karianet.org



"We want other people to know what we have learnt". Photos: Laura Eggens

Knowledge exchange is a two-way process

Before I went on a routine extension activity to a pastoral camp in North Kordofan in 2010, I had a solid concept of how to successfully build knowledge. But local people made me rethink all of that. With an extension team from the Ministry of Livestock, we went to raise the awareness of local herdsmen and farmers about veterinary services. I was proud of my role and I was sure that these people would learn a lot from me. We held debates in schools, video shows in villages and distributed a large quantity of extension and educational materials. You can say that we were there to lecture and raise awareness through conventional educational means.

But through informal group discussions, the herdsmen and farmers showed us the wonderful world of indigenous knowledge and experiences. It is a miracle how they released their minds and freed their tongues. Through these fruitful group meetings I discovered that local people have their own 'knowledge package', inherited from their grandfathers and ancestors. This traditional knowledge about animal breeding and health management has helped them keep their flocks over hundreds of years.

My mind used to be full of ideas about how to give science-based solutions to these 'unfortunate' people who lack asphalt roads and schools. Instead, I discovered that my awareness-raising messages did nothing more than add to and validate their indigenous knowledge. Their positive reactions to our messages were a direct result of the connections with existing indigenous knowledge. Building on traditional concepts proved to be a very effective way to initiate community processes and anchor solutions. For instance, when I spoke about the importance of collective work I used the indigenous concept of "*nafeer*", which is performed at harvest time and when building a house. I suggested that the people could formalise this system into organisations to help improve public services in their village. I am amazed to find that some of them have now started to establish such organisations and just need to make some technical steps to finish this process.

What a big lesson! And there were more, such as the power of the arts. In the local culture,



Photo: Laura Eggens

traditional poems play an important role in transferring knowledge about the features of a good and brave herdsman. Also, involving key people, like the local youth, proved to be essential. I attribute the impact of our awareness-raising initiatives greatly to the active school students who managed to convey the messages from our school debates to their families.

"Listen, receive, and then say what you have to say": this will be my motto for similar future experiences. Knowledge exchange with people at the grassroots is a two-way learning process: they learn from you and you learn a lot from them.

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A university's model for rural development

Since 1992, Ghana's University for Development Studies is encouraging all students to work together with, and learn from, farmers. Its different approach is helping it achieve the objective expressed in its motto: "knowledge for development".

Joseph Amikuzuno

Both the location and mandate of the University for Development Studies reflect the intention to blend the academic world with that of rural communities. Recognising the difficulties in northern Ghana, the university's founders aimed to establish an institution that could effectively contribute to solving development problems and, at the same time, enhance high school graduates' access to higher education. A main objective was to bridge the socio-economic disparity between the northern and southern halves of the country.

Because of its development focus, the university gives preference to female students and students who come from deprived high schools and rural areas. There are students from farm households as well as many who are completely unaware of the situation in rural areas. A majority of the non-teaching staff are from the communities where the university campuses are located, and the academic staff, like the students, have different backgrounds. More than 60% of the academic staff (including myself) studied at UDS and were employed after completing a Bachelor's degree and being supported by the university to obtain M.Sc. and Ph.D. degrees at other higher education institutions.

The TTFPP An important tool for achieving UDS's objectives is a unique model of education that emphasises both academic learning and an intensive community-based practical training programme. In this model, instead of the typical two semester system used in most universities, we follow a trimester system consisting of two 16-weeks periods of lectures and one 8-week practical training period – the Third Trimester Field Practical Practical Programme (TTFPP). This semester is specifically devoted to community work. During this time, students are sent to the field to undertake a thorough study of the community that receives them.



An active and constructive interaction process.
Photo: Joseph Amikuzuno

As part of the TTFPP, groups of about ten bachelor's students of the same academic year group but from different faculties (Agriculture, Renewable Natural Resources, Education, Integrated Development Studies, Applied Science, and Medicine and Health Sciences) are sent to live and interact with selected farming communities during the farming season (which, in northern Ghana, runs from May to October). Like the regular semester sessions, the TTFPP is a compulsory academic programme, and undergraduate students cannot complete their studies without fully participating in it. The TTFPP gives students the opportunity to put classroom knowledge into practice, while at the same time learning about group dynamics and team work. Being exposed to different socio-cultural conditions, students learn how to live and work with different cultural groups, and also to appreciate different cultural values and practices.

This is an iterative process. In the first year, students develop the skills to work with the community members to collect and analyse socio-economic data and produce community profiles. In the second year, the students and their hosts build on the profiles created in the previous year to identify general development problems, focusing on the threats and challenges facing the communities. Then, in the third year, students work in smaller groups on a given problem area together with the community members, formulating specific, pragmatic intervention programmes and drawing up Community Action Plans (CAP) for addressing these problems (see box). To ensure their active participation, students are continuously monitored and assessed in all the phases of the programme.

Starting with just 39 students from the Faculty of Agriculture in 1993, the TTFPP has to date engaged more than 20,000 young people, and its coverage area has extended from the northern part of Ghana to the rest of the country. In addition to second and third year students, more than 3,000 first year students from

all faculties are participating in this year's programme.

Most of them, especially those from big cities in the southern part of the country, find that staying in deprived communities (without potable water, electricity, health facilities or motorable roads) for eight weeks is a humbling experience that totally changes their perceptions and thinking. The students become role models to the youth of the communities, and in turn learn group dynamics and develop leadership skills. They also acquire the spirit of social work, learn to appreciate rural life and, most importantly, develop a high degree of commitment to rural work. Since some of these students are future policy makers, this experience is very important.

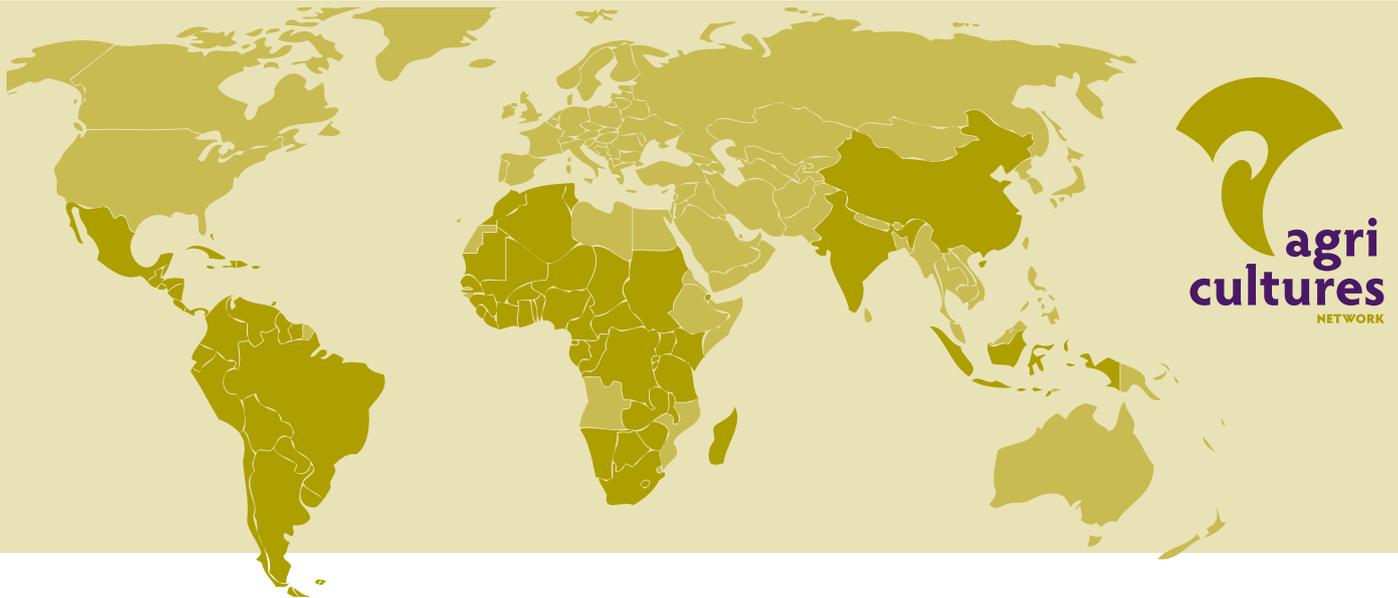
The programme's evaluations have revealed that the TTFPP has promoted active and constructive interactions of both students and staff with the local communities. This in turn has helped them facilitate a socio-economic transformation process within these communities. It has fostered favourable attitudes in students towards working in deprived, rural communities. Thus a majority of high level employees in the government and in NGOs in Ghana's rural areas are UDS graduates. The practical skills gained at UDS makes them the preferred choice in the Ghanaian job market, particularly in projects or programmes in rural areas. UDS graduates are popularly called "practical development agents" in Ghana. The TTFPP has gained popularity inside and outside Ghana, and students from Germany and the United States are now joining it. In keeping with the vision of the university, the integrated TTFPP will, despite funding constraints, continue to lead the efforts of generating "knowledge for development".

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The Community Action Plans

The CAPs prioritise the needs of a particular community, the actions and resources required to meet these needs, and identify a responsible person, group or institution for each step. Prepared by the students as part of their studies, these development programmes are then implemented by the district assemblies (the smallest unit of government in Ghana). Naturally, these CAPs differ from community to community: they may focus on health and sanitation, agriculture and food security,

microenterprise development, conflict resolution, or roads and transport. In all cases, however, they are the result of the different perspectives of students from different disciplines. Working together helps students to appreciate community problems and opportunities in a holistic manner. It also helps them to broaden their perspective as they have the opportunity to interact and learn from each other. We have regularly seen how it also fosters a spirit of team work.



Since their publication in 2011, ILEIA’s learning modules on sustainable small-scale agriculture, *Learning AgriCultures*, have been distributed and used around the world. With the International Year of Family Farming approaching, this series is more relevant than ever. With themes ranging from technical topics to economic and social issues, the modules are invaluable for anyone who wants to increase his or her theoretical and practical understanding of family farming.

Using Learning AgriCultures

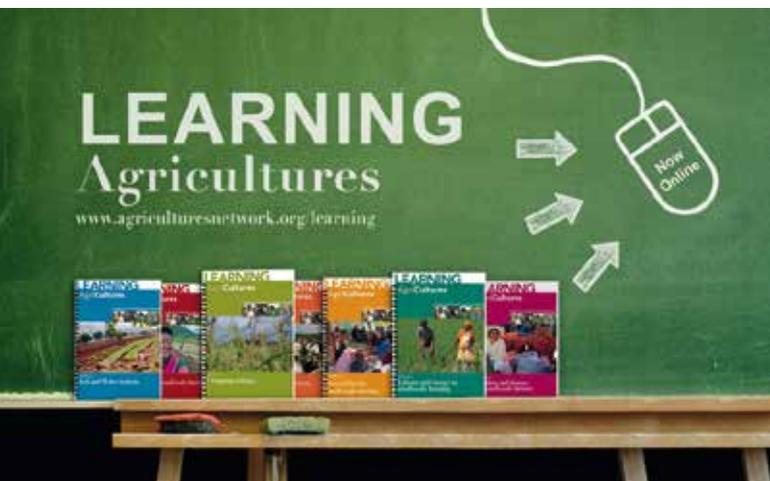
The series is currently being used in private and public educational institutions, farmer training programmes run by NGOs and also at vocational institutes and universities – and even

in primary and secondary schools. From the Fundación Colonia Pirai in Bolivia to the Henderson Research Institute in Zimbabwe, *Learning AgriCultures* is used because it demonstrates the practical side of the learning process and provides a varied

pool of easy to understand information. Users appreciate the balance between practical and theoretical content, the relevance of the fundamental ideas portrayed, its hands-on approach and the case studies. “I chose to use these modules because they are very explicit and easy to use,” said Ajong Gerald Ajongakoh from

Cameroon. “They address the backbone of our emerging economy, in a way that is suitable for empowering the people of the community to which I belong to and work with.”

Ajong works at the Ephathat Institute for the Deaf (EID) in Kumba, southwest Cameroon, teaching agricultural sciences as a life skill to deaf adults and youth. “We try to sensitise Cameroonians on the possibilities and aptitudes of the deaf, because they often equate deafness to foolishness,” Ajong explains. There is also a lack of vocational training centers in Cameroon adapted for the deaf. The Cameroon Deaf Empowerment organisation at IED offers agriculture as a course at the secondary vocational section, for deaf students. This helps them find employment in the many local farms or to unite and set up



their own agri-business. At the same time, the school's five hectares of farmable land provides food for the students (hunger often leads many students to drop out of school) and generates an income to improve the school's facilities.

"I grew up in a 'hands to mouth' or subsistence farming family myself, and volunteered to teach the students," says Ajong. "Many students and parents are attracted to our farms and projects, because every parent of a deaf child wants their child to acquire survival skills." The course focuses on sustainable and low input practices. From *Learning AgriCultures* and *Farming Matters* we learnt about methods to improve productivity with very limited input and environmental degradation through modern and environmentally friendly farming methods." Most students are from low income families that rely partly on subsistence agriculture that uses environmentally degrading methods. "They find it very interesting to learn about sustainable and low input farming from real examples, and about the risk of inorganic fertilizers and related issues. They are thrilled to discover that agriculture is a subject of importance worldwide. The *Learning AgriCultures* modules are well illustrated, which is especially useful

Learning AgriCultures is an educational series on sustainable family farming in different contexts. The seven modules cover topics that range from soil management to knowledge and learning. Theoretical sections are accompanied by critical questions and educational resources, including articles, videos and games. *Learning AgriCultures* was developed in response to a demand from readers of *Farming Matters* who work in agricultural education. The content of this unique series is based on the large number of practical experiences in sustainable family farming that ILEIA has collected and published since 1984.

for teaching deaf people who 'listen' with their eyes. They are very easy to use in ways that involve the students directly."

In the EID, and all the other schools where *Learning AgriCultures* is used, the modules have been adapted so that they are more relevant to the local context and the targeted audience: more details on specific techniques are added, the texts are translated into a different language (in the case of IED, sign language), or additional resources are added. Ruud Ludemann of the Centre for Development Innovation (CDI) in the Netherlands explains: "I hardly ever just apply what others have pre-cooked. I used *Learning AgriCultures* as a source of information, inspiration and materials – as a rich source of

ingredients – and then compose my own materials choosing the training methods I find most suitable. The application of standard recipes is a good way to start to learn how to cook, but once you can cook, you prepare your own dishes!"

Interested?

To make this educational support material more widely available, the entire series – both its theoretical and practical content – can now be found online on the website of the AgriCultures Network. The series is also available in PDF format on CD-Roms. We are interested to learn about *your* experiences with *Learning AgriCultures*. What content is most relevant to you? In what setting do you use the materials, and how did you adapt them to your own context? Are there aspects that could be improved? Do let us know.

READ MORE AT WWW.AGRICULTURESNETWORK.ORG/LEARNING

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“EDUCATION FOR SUSTAINABLE DEVELOPMENT IS EDUCATION FOR THE 21ST CENTURY – REAL CHANGE MUST HAPPEN IN THE WAY WE THINK, WE ACT AND WE BEHAVE WITH EACH OTHER AND WITH THE EARTH THAT NOURISHES US. THIS MUST START WITH EDUCATION, WITH EDUCATION THAT EMPOWERS WOMEN AND MEN, WITH NEW SKILLS”

Irina Bokova, Director-General of UNESCO, opening the 7th World Environmental Education Congress, Marrakesh, June 9th, 2013.

“Almost all groups consulted in the UN 2015 global survey prioritised education. And education has a huge impact on all other areas – youth employment, climate change, HIV. It is key to building stable democratic societies, and yet it is still wildly underemphasised in donor priorities”

Caroline Pearce, head of policy at the Global Campaign for Education (GCE), looking at the priorities to consider once the Millennium Development Goals (MDGs) expire in 2015. Reported by IRIN, the humanitarian news and analysis service of the UN Office for the Coordination of Humanitarian Affairs. March 21st, 2013.

“Smallholder farmers hold a massive collective store of experience and local knowledge that can provide the practical solutions needed to put agriculture on a more sustainable and equitable footing... To place these smallholders at the forefront of a transformation in world agriculture, they need appropriate support to overcome the many challenges they face”

Elwyn Grainger Jones, Director of IFAD's Environment and Climate Division, in a joint news release by UNEP and IFAD (“Smallholder farmers key to lifting over one billion people out of poverty”). June 4th, 2013.

“INTEGRATING ‘SUSTAINABILITY’ AND ‘GREEN’ IS JUST AS MUCH ABOUT HOW WE TEACH AND LEARN AS IT ABOUT WHAT WE TEACH AND LEARN”

Arjen E.J. Wals, UNESCO Chair Social Learning & Sustainable Development, Wageningen University, at the “Education for Sustainable Development” (ESD) conference organised by the Swiss Sustainable Development Forum (“Why the Green Economy cannot be ‘business as usual’ and education for sustainable development cannot be ‘education as usual’”). October 3rd, 2012.

