Farmers in their landscapes

- Reclaiming denuded landscapes
- Emerging waterscapes
- From illegal logger to family farmer
Tribal farmers reclaiming denuded landscapes

Farmers wanted to conserve their land for their own benefit and they have shown how they were able to do it. This grassroots effort in Indian tribal lands shows that there are alternatives to private investment projects, and which need to be recognised, supported and promoted for the benefit of marginalised farming communities.

How territorial cooperatives carved an unconventional pathway

Farmers in the northern Netherlands have taken their farms and the cultural landscape and heritage of this region back into their own hands, by forging alliances to challenge policies and devise new practices, resulting in more sustainable production systems and a stronger regional economy.

Emerging waterscapes When the land is not enough

Land is scarce in Bangladesh, and the flooding seems to get worse year after year. But, the emerging use of seasonal islands now offers farming families ‘new’ land to grow crops on the waterways that otherwise threaten their very existence.

From illegal logger to family farmer

Pak Usub used to put his hand to illegal logging, but realising that all trees would soon all be cut, he turned to farming to make a living. He and former logger friends experimented with different crops, trees and animals and developed new farming methods. Now they earn a good living from farming and no longer need to cut trees from the forest.
As a south Indian farmer said, “soil is the mother of agriculture, the mother of life”. And 2015 is the International Year of Soils. So now is an appropriate time to look again at soils that are so fundamental to agroecology and family farming. Soils are not only the foundation for agriculture, livestock production and forestry, they also supply clean water, capture carbon dioxide from the atmosphere and provide many other ecosystem services. However, these functions are jeopardised as many soils are becoming increasingly degraded.

And whereas research and policy often emphasise the use of chemical fertilizers to boost production, these by themselves cannot reverse the problems of degraded soils and poor crop yields in the long term, and may even make them worse in some cases. What is central is that the nutrient content of the soil says little about soil health, and whether the soil can actually sustain production over decades...

Soils are healthy when they contain an adequate amount of organic matter such as living, dead and decomposing plant material, and soil life like earthworms, insects and microscopic organisms. Healthy soils can retain more water and hold more nutrients. With climate change leading to more frequent and longer-lasting droughts, this is becoming more important than ever before. Farmers can increase organic matter content by leaving crop residues in the field, mulching and planting cover crops. The 2015 International Year of Soils is an excellent occasion to draw attention to the crucial importance of increasing soil health.

Realising that organic matter and soil life increases their productivity and resilience, family farmers around the world work hard to ensure favourable soil conditions. Farming Matters invites you to present such grassroots experiences in its first issue of 2015.

What strategies are farmers using to manage organic matter and enhance soil life? What problems do they encounter and what benefits do they reap? Do you know farmers who have successfully gone through the transition process towards healthy soils? What can farmers, scientists and policy makers learn from successes and failures in these transition processes? We look forward to your insightful stories and practical evidence.

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The ‘landscape approach’ has been increasingly promoted during recent years as a new perspective for addressing global problems. In the face of increasing and competing claims on the land, planners, scientists and policy makers have realised that sectoral approaches do not work. ‘Integrated land management’ or broad landscape level considerations have at last begun to supersede those restricted to water, forests, farming, etc., in national policies and development programmes.

The landscape approach promises to tackle the negative effects single sectors may have on the others when left to grow on their own, and it also promises to deliver complementary benefits by integrating different landscape elements. This holds the potential to improve livelihoods, food security, well being, climate change adaptation and delivering ‘environmental services’. But some serious challenges still remain in reconnecting agriculture to other functions of the landscape, and especially in finding a balance of interests in the face of unequal power relations.

Connecting to the landscape For many family farmers, pastoralists, forest communities and fisherfolk, a holistic ‘landscapes perspective’ is not new. Their landscapes have always been shaped in dynamic interaction with others and the natural environment. The interdependencies between different components are a given, and a logical daily reality that relates closely to the interdependencies within families and the communities they live in. Landscapes not only provide food, fodder, fuel, timber and medicine, but they also have cultural and religious significance. They are where people live, and provide the fundamental framework to all aspects of life.

Each person holds his or her own specific knowledge and perspectives about different parts of the landscape. She or he works with whatever is available in terms of highland or lowland, water sources, seeds, trees and so on, through practices that have been built up and continue to develop over generations. Women and men may use different pieces of farmland or forest for different purposes, and their animals may get a separate patch to graze. Such landscape elements are combined to fulfil various roles, often strengthening...
starting point for further development and innovation. We see them using their traditional knowledge in India (page 7) and organising themselves into an effective ‘landscape powerhouse’. In Nepal, biodiverse farming systems come to the rescue when their orange orchards are killed by a disease (page 28). Farmers turn to the water when climate change threatens their land in Bangladesh (page 18), and take up new knowledge to make the most of invasive trees in Djibouti (page 22). As argued eloquently by Million Belay (page 21), knowledge and historical memory that exist in communities are highly inspirational in this regard. John Liu also tells us about how we need more farmers in the landscape, not less (page 38), and Jeff Campbell explains that how they organise themselves into effective organisations is key (page 14).

These family farmers, pastoralists and forest communities have used the space they have as effectively as they can. They have also managed to expand it, amplify their voice and assert their rights by organising themselves and by forging alliances. In the Netherlands, farmers formed territorial cooperatives and collaborated with scientists and civil society to change policies and implement a self-governing landscape structure (page 10).

As we see from the experiences presented here, creating a political space for family farmers and community organisations is of crucial importance, while efforts should be made to harness women’s rich knowledge and organising capacity.

This issue of Farming Matters is a call for those involved to challenge top-down concepts that frame today’s landscape approach. But we should not seek an alternative. Rather, we must provide a better platform for those who need to be heard – the real managers of the land, our landscapes. Only with them can we shape a sustainable future.

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Finding balance in power

The landscape approach is hailed as inclusive, equitable and multi-stakeholder, as a new way of addressing and resolving conflicts in land and water management, but as practice shows, it is clear that the challenge of power remains.

While in some cases, such processes have resulted in agreements acceptable to all parties, all too often a seat at the table is not enough. Family farmers, local forest users and fisherfolk are confronted with powerful political and commercial interests. Even when facilitated in a fair and skillful way that addresses inherent power imbalances, the real decisions may be made behind closed doors. Or these communities are excluded from other land governance structures, natural resource management programmes or policy development that may be more decisive. This is especially the case when landscape perspectives and demands are in serious conflict, as is the case with mining or fracking. In such situations, real landscape democracy appears to be little more than rhetoric.

Reconnecting

Even when facing hugely un-level playing fields, farmers in the broadest sense, i.e. who may depend on crops, animals, trees, fish or other natural resources, are finding ways to score goals while running uphill. Where possible, they are taking control to ensure that they make the decisions about what happens in their territories. This issue of Farming Matters presents a selection of these experiences, concluded by a ten-year reflection on integrated landscape approaches (page 39).

Farmers have reconstructed and reconnected with landscapes often by building on local knowledge as a
Tribal farmers reclaiming denuded landscapes
In southern Odisha state, India, the landscape and livelihoods of family farmers are threatened by large dams, changing rainfall patterns and government indifference. But tribal communities have decided how they want to conserve their land for their own benefit. And they are doing it.

Vidhya Das

Podu chaso, as shifting cultivation is called in the tribal regions of Odisha, India, is important for the diversity of crops it has helped to sustain, and the diversity of cultivation practices it has generated. Crop rotations, intercropping, and other sustainable agricultural practices are a part of the inherited knowledge system of podu farmers, and have helped to create the landscape in which they live.

However, all of this is becoming increasingly threatened. Commercial logging has devastated huge tracts of forests used by the tribal communities, and the food and fuel that used to be gathered there by tribal women has almost completely disappeared. The area also continues to suffer from lopsided development, with roads, railways and dams being built to attract corporate investment at the cost of tribal land and livelihoods. In Koraput region alone, more than half a million people have been displaced due to the construction of new reservoirs, and more than ten thousand hectares of forest land destroyed.

Alternatives Consecutive governments in India have adopted the TINA (‘there is no alternative’) philosophy for addressing poverty, based on claims that despite various policies and programmes aimed at promoting rural development, poverty persists in the tribal regions. The only solution, they say, requires the input of corporate capital. However, multimillion dollar investment projects lead to displacement and have only further impoverished tribal communities rather than helping them.

On top of this, climate change has also affected the region’s rainfall, cultivation practices and fragile environment. The combined result is an almost total end of the podu system of cultivation, threatening the livelihoods of the tribal communities. Hunger is now commonplace, and some live on the brink of starvation. Their rich forests have disappeared. Their luxurious hill slopes where they used to grow up to ten different crops together in a single season have turned to barren soil and rock. But on which they keep trying their podu in desperation, trying to relive the memories of those bountiful days from not so long ago...

Addressing the situation with a holistic, people-centred approach was seen by some as the only alternative to ‘there is no alternative’. Agragamee, a group of activists committed to working with marginalised and underprivileged communities in the tribal districts of Odisha, began talking with family farmers in the affected areas. Based on their experience, a series of consultations with 25 tribal villages began. Together, they looked for sustainable, agroecological alternatives that would help the tribal communities preserve their cropping patterns and produce enough food.

Farmers decide In Chandragiri Panchayat in Rayagada District, farmers pointed out the need to address their problems in an organised and multi-pronged approach to counter the many threats they saw to their landscape. This included controlled use of communal land, improved soil and water management, moving towards settled cultivation, and rejuvenating uplands with plantations and permanent tree crops that would provide livelihood support as well as cash incomes. This looked like a huge task, and a real challenge for tribal farmers who have few resources other than a little land and their own labour. But even the longest journey begins with a single step. Their chosen first step was to establish a framework for improving governance of their resources, and rules emerged from a process of dialogue and discussion. These were: controlling the open grazing of cattle, protection of all forests, having every child in school, ensuring collective labour for village development, everybody to have compost pits, and no use of alcohol or tobacco.

This was followed by further discussions on land use, and the first agreement was to improve agricultural practices and soil fertility, and other plans began to emerge. The community felt that they had been very short sighted in the past by neglecting plantations and orchards and allowed them to die. Less than 5% of tribal farmers had taken the trouble to maintain their cashew and mango plantations, but they were getting significant cash returns while others were in penury. The village decided they would take action at three levels. The first, governance, was to be based on
crops between them while they were still small. The returns were shared amongst them. Every farmer agreed to take up to half a hectare of upland and develop it for settled agriculture. Farmers with common borders decided to fence the land. Good results were seen after only two years. The trees established successfully, and they are also gradually adopting zero tillage practices which is further reducing erosion and improving soil fertility.

These efforts are inspiring many other villages to take up similar efforts. Farmers have begun to fence their lands and plant and protect trees combined with seasonal crops. Ruko Majhi from Kebedi village explained. “I slogged day and night to make the fence and protect the plants, and now I am really happy with the results. In the coming season, I will grow kandul (pigeon pea, *Cajanus cajan*) in between the cashew trees”. But the most important work is that being taken up by women on common land, large areas of which are being reclaimed thanks to huge efforts by women’s collectives. Sonamati Majhi of Dandabad village was very happy with the results. “This programme has taught us that our own plants and crops are the best. We only need a little support and we can develop our land ourselves”.

Vidhya Das works for Agragamee, Kashipur, Odisha, India, a NGO that promotes people-centred development, combining an issue-based approach in their socio-economic development programmes.

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My name is Doña Cristina Osegura and my community is called El Guano. It can be found in the mountains about an hour outside the city of Danli in Honduras. It is a very beautiful region. Most of us farmers cultivate coffee, as you can see there are many monoculture coffee plantations around here. I wanted to bring more diversity to our farms and landscape because only cultivating one type of plant depletes the soil and makes us dependent on pesticides. It is also economically risky and puts our biodiversity and ecosystem in danger.

So I started to grow various peppers, yuca, papaya, and different plants with medicinal value in addition to coffee. I also built caracoles, snail-shaped rock formations around different plants, which allow me to plant several different types of herbs in the same space. I no longer have to buy vegetables. With my 14 children we grow and eat our own vegetables and sell the rest, earning additional income.

I am very proud and excited to share these practices with others in my community. In fact, I work with other women and families to try similar practices of keeping a wide variety of fruits and vegetables. In this way, we can sustain our families, the earth and our beautiful landscape.

Interview by Kaitlin Porter, intern at Groundswell International and at Vecinos Honduras.

Photo: Groundswell International
riesland, in the north of the Netherlands, is a region with a strong cultural identity and its own language. In it lies the Northern Frisian woodlands, a diverse area covering 50,000 hectares. Beside the woodlands, small fields surrounded by hedgerows and belts of alder trees (Alnus spp.) further characterise the local landscape. For generations, this has been maintained by the collective work of farming families. It stands in stark contrast with many of the monotone farming landscapes seen elsewhere in the Netherlands – the product of decades of government promoted agricultural industrialisation and scale enlargement.

These policies are one of the reasons why the Netherlands has become the second largest net exporter of agricultural produce in the world (in money terms), but this has had its down side. It has been associated with vulnerability for large scale outbreaks of animal diseases and increasing pollution. It has also led to land grabbing and deforestation elsewhere in the world as it relies heavily on imported soybeans and other animal feeds. Rather than seeing these as expressions of a deeper underlying crisis in agriculture and food, the Dutch government has responded with a series of policy measures directed only at symptomatic relief. But these measures are not always in tune with the priorities of Dutch farmers. They provoked resistance amongst dairy farmers in the Northern Frisian Woodlands, and marked the beginning of a long-lasting struggle for autonomy and sustainable production. Their initiative brought together farmers, civil society, entrepreneurs, research institutes and the government itself in developing new values. The result has been not just the preservation of the unique landscape, but also greater sustainability and improved profitability of local farms.

**Trapped in a landscape** Governmental policy measures in the 1980s to tackle the effects of acid rain and nitrogen leaching on nature reserves were highly prescriptive. Hedgerows were for instance...
declared acid sensitive and severe limitations were put on agricultural activities nearby. Farmers were literally trapped in the dense hedgerow landscape they have positively managed for generations. In addition, farmers were no longer allowed to spread manure on the land as they always had done, but had to inject it into the soil. Farmers felt they were being treated unjustly, and the new rules and regulations threatened the continuity of many farms.

The farmers knew that they could combine nature conservation and maintain farms and landscape if they were allowed to do it in their own way. Some farmers were considering removing hedges before the rules came into force, others negotiated and convinced municipal and provincial authorities to have the hedge-rows exempted. In exchange, farmers promised to maintain and protect the hedges, ponds, alder rows and sandy roads in the area. This gave rise to the first two territorial cooperatives in the Netherlands, the Easternmars Lânsdouwe and the Vereniging Agrarisch Natuur en Landschapsonderhoud Achtkarspelen. Four other organisations were formed soon afterwards, and in 2002, the overarching Noardlike Fryske Wâlden (Northern Frisian Woodlands, NFW) cooperative was founded, with a membership of more than 1000 farmers as well as private individuals, including almost 80% of all farmers in the area.

Bringing farming into nature, and vice versa Environmental conservation has traditionally been the role of nature organisations, so farmers needed to gain support from other farmers and local government before they could begin to actively manage the landscape ‘for nature’. The NFW was able to convince and align with civil society organisations, especially nature organisations, and set two trajectories in motion. One focused on maintain-

“We cherish the landscape, it is part of our identity.”
detailed ecological and landscape management plan. They convinced the officials and were able to obtain exemptions from several asphyxiating regulatory schemes.

The result was that farmers are now managing about 80% of the natural and other landscape elements in their area. This includes not only more than 300 km of hedgerows, but also 3800 km of alder wooded bank rows, 400 ponds, 7500 hectares of collectively protected areas to support meadow birds and 4000 hectares for geese. Cooperative activities resulted in improvements for the whole region and far beyond the participating farms, including the strengthening of the rural economy, improved product qualities and more trust and cooperation between farmers and other residents. The government recognised the uniqueness of the Northern Frisian Woodlands, which they recently declared a national landscape. The biodiversity has grown richer, and the attractive landscapes are opening up new opportunities for rural tourism and recreation which are taken up by the cooperative by for example by restoring ancient sandy paths as walking trials or cycle tracks.

Although farmers were somewhat familiar with this way of managing the land, they also learned much and strengthened their way of dairy farming by integrating nature and landscape elements in their farming practices. In the words of one farmer: “If you manage the landscape well, biodiversity increases. You get for instance more grass species, which positively affects the cows’ health. And careful maintenance of the tree belts attracts more birds. They eat the insects that destroy the roots of the clumps of grass. So the more birds there are, the less insecticide you need. Nature and landscape management is thus economically advantageous. That is what I learned in the course of time.”

The economic benefits are all the more important as although farmers receive some compensation from EU and the government for about half the area under landscape management, this hardly pays for the time they spend on these activities. Most of the subsidies that are available for nature conservation continue to be allocated to environmental organisations, and farmer-managed landscapes still tend to be taboo among policy makers and within mainstream farmer organisations.

**Better manure, less fertilizers**

A government regulation obliging farmers to inject slurry into the soil triggered the second trajectory. The reasoning was that slurry or manure applied on the surface more easily washes away to pollute the environment. It also releases ammonia, which causes acidification and nitrogen pollution that can be especially harmful in protected areas. But farmers were sceptical. With small field and high groundwater levels in the spring, their land was not suited to the heavy machinery needed for slurry injection. The nutrients would also be lost into the groundwater so requiring ever more fertilizer to maintain yields. Farmers argued that injecting slurry would kill soil life, and that they could improve the situation by producing better quality manure.

Negotiations with the government on this point were equally successful and resulted in a temporary exemption from the rules in 1995, based on an ‘experiment’. The cooperative agreed with the government that they would actively explore alternative ways to reduce nitrogen leaching. But due to political changes in 1998, the cooperative could only maintain the exemption if the experiment became ‘scientific research’. This resulted in the nutrient management project including 60 farmers and scientists of various disciplines.

As a result of this experiment, an unconventional perspective in developing new practices was developed, called *kringlooplandbouw* or ‘closed-loop farming’ based on natural cycles. This improved nitrogen efficiency on the farm and landscape level. Manure improvement was the starting point, with farmers giving their cattle more fibrous feeds such as grass and less protein such as soybean concentrates. Straw and microbial additives were also mixed with the manure. This produced more solid and higher quality manure resulting in less nitrogen losses to the environment. Special muck-spreaders were also developed that were suitable for small fields. Farmers also reduced the use of chemical fertilizers, but as there
Healthier cattle, higher milk quality and better manure result from this ‘closed-loop farming’. Photo: NFW

were improvements in soil biology, grass yields even increased. Healthier cattle, higher milk quality and better manure were the result, thereby completing the cycle.

Today, this approach has spread, with many experts and farmers coming to the Northern Frisian Woodlands to learn, the cooperative has taken up an educational role and regularly organises guided tours and presentations.

Learning in ‘field laboratories’
These Frisian farmers continue to develop new practices, using their own as well as external resources. New knowledge is gained and disseminated through a wide range of methods, including nature conservation and landscape management courses, and excursions to other farms in and outside the region. Less conventional methods of learning by doing are often combined with small study groups where experiences are exchanged, where farmers discuss their successes and failures. Another innovative method is farmer-led scientific research. Farmers raise the questions, the research is carried out on their own farms, and results are discussed between farmers and scientists as well as within the communities.

Much of what is learnt in these ‘field laboratories’ builds on traditional knowledge. Regional characteristics such as hedgerows and alder trees have always been a self-evident part of the farm. Knowledge about local crops and cattle breeds has also passed down through the generations as a base for local agrobiodiversity. The territorial cooperative takes advantage of this wealth of knowledge and also created a system to spread it further among other farmers.

A landscape of possibilities
Farmers in the Northern Frisian Woodlands have shown that together with others, they can achieve both sustainable farming systems and environmental and nature policies objectives, by integrating landscape management into their daily activities. This forms part of a novel strategy of reducing costs, and improving own resources such as manure and grassland. “The general feeling is that the costs for fertilizer and fodder have decreased substantially. We have also become more innovative; we now dare to follow pathways that are not yet advocated by experts,” says one participating farmer.

By building alliances with civil society organisations and researchers, and by lobbying and negotiation, farmers have shown how they are able to deviate from imposed, top-down regulations, and to experiment themselves. They made the room needed to search for locally adapted and tailor made solutions, but which also materialised into a new self-organised form of landscape governance. The different way in which the cooperative has been able to connect with local, regional and national authorities clearly shows the potential for farmers to exert political influence at all these levels. The internal organisation developed over the past 25 years and the extended network with NGOs and government at all levels, has given the territorial cooperative considerable strength, and it can deliver where others fail. The level of participation is very high, very much strengthening social capital as it has developed. The Dutch Ministry of Agriculture invited the NFW and four other cooperatives to test new methodologies. Since the territorial cooperatives had convincingly proven their capacity for self-regulation, they were more that able than other institutions, and many of their proposals are now integrated in official policy. It shows that by taking the lead, the position of farmers in today’s societies can be greatly strengthened.

Since 2003, the NFW has worked on other aspects of the regional economy and its sustainability, such as green energy, improving product quality, animal welfare, and cost reduction strategies. A territorial contract was then created together with stakeholders in the area and signed by parties including the provincial government, ministries and academic institutions. Although the NFW continue to swim against the tide, now that farmers have taken their landscape back into their own hands, they know that everything is possible.

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“Working together is a motivating and powerful approach to getting things done” says Jeff Campbell, manager of the Forest and Farm Facility. “This holds true for my own approach to life; for the work of the millions of forest and farm families stitching together complex livelihoods and ecosystems at a landscape level. Local indigenous peoples, smallholders, female farmers and forest dependent peoples have the knowledge and history, the culture and the potential to maintain and revitalise vibrant rural landscapes – we must trust and support them.”

Interview: Herman Savenije and Nick Pasiecznik
The Forest and Farm Facility (FFF) helps in the creation and development of strong and equitable organisations and networks amongst smallholder farmers, women groups, farm and forest communities and indigenous peoples. It aims to enable them to make their voices heard in policy making processes at all levels, and to build their capacity and opportunity to access finance and investments for forest and farm development. It also supports governments to set up multi-sector platforms to coordinate the many ministries, private sector and civil society stakeholders involved.

What are the greatest threats to our landscapes? In my view, the greatest threats are fragmentation, insecure tenure, vested interests, and the cult of simplification for short term benefit. A fear of complexity and the loss of what I think of as ‘land memory’ are also major problems. This is compounded by climate change which adds to uncertainty. What to most communities is a living, breathing life-support system, with forests, mountains, rivers, fields, pastures, villages and homesteads has been broken up into different ‘natural resources’. For a variety of political and technical reasons, these have been given different land use designations and so, in turn, tend to come under the jurisdiction of different parts of government. Common property rights have often been nationalised, leaving only actively farmed land that is recognised as belonging to those who use it. The push towards larger scale monocultures of forests, farms, water, land and more mineral exploitation in the name of efficiency is destroying the complex relationships between the many different parts of ‘living landscapes’. And worst of all, those people who have been listening to the landscape as a whole, tend to be devalued and marginalised.

What do you think are the opportunities? I feel that there is a resurgence of interest in understanding the critical importance of landscapes as lifeboats for sustainability that will carry us into the future. Intrinsic to this is an appreciation of the complex interactions between the ecological and the cultural components, between forest and farm, and a growing awareness that these must be defined in terms of all their interlinked communities, people, animals, plants and the geography in which they live. We might also be thankful to the triple crises of climate, economy and food, in forging a better understanding that the solutions to these are also connected. The complexity of ecological and cultural land use patterns increase our adaptation to climate change, diversify local livelihood possibilities and contribute to a more resilient approach to food security and nutrition. There is also a growing perception that well being is about a combination of things that landscapes provide, and not just GDP. Rural communities, smallholders and indigenous peoples are mobilising around this new awareness. They are becoming more visible and are being heard more, even in the face of the accelerating rush to extract the last remaining untapped resources on our planet.

Why are forest and farming families so important? It is clear to me that forest and farming families, including fisherfolk and pastoralists, are the social keystones that sustain the very functioning of landscape. Maintaining traditional practices, they hold on to a mosaic of land use systems and keep alive the knowledge and genetic diversity that will be needed in the future. By living in the very landscape, they use its many products, goods and services. They sample the fruits in different seasons and notice the changes in weather, moisture and soil condition that need to be attended to. By Forest and farming families and the forests they live in are interconnected in many different ways.
striving to build and more sustainable and resilient livelihoods, they remain connected to these landscapes as part of larger, interlinking ecological and cultural cycles. By being present as families, they also nurture future leaders, new plants and animals, and keep hope alive.

**You say forest and farmer organisations are vital. Why?**

Forest dependent people and smallholder farmers are amongst the poorest and most marginalised people in the world, that is sure. Conversely, they often live in places that provide a lot of economic benefits at the national level, such as timber, minerals and water resources, but they rarely receive fair benefit from the exploitation of these resources. Furthermore, as long as these people are kept from organising themselves, it is more difficult for them to match the systems of resource control and extraction with which they find themselves competing with. The ownership and control of markets and the future of landscapes are all so connected. By becoming organised at whatever level, farming and forest communities increase their ability to be heard, to be seen, to access resources, to make connections and contacts, to find buyers for products, to diversify their livelihood strategies, to make their own decisions and to deal with change and opportunity on their own terms. But there are also many stakeholders who have much to gain by communities not being able to organise themselves and express their rights.

**What is the Forest and Farm Facility doing?**

The Forest and Farm facility believes that farm and forest organisations are one of the levers towards a transformative change. This will reanimate rural economies and exert a more sustainable and rooted management over the different elements within a living landscape. By providing resources directly to help forest and farm families organise themselves at different levels, we believe they will then be able to raise and push through the changes needed, through policy advocacy and livelihood development. By connecting forest and family farmers, we believe that they will better see how similar their challenges are in terms of gaining recognition, tenure rights, access to organisational and business development support, access to credit, and opportunities for value addition. We also believe that the concept of food systems and landscapes are inseparable. Most family farmers are very dependent on their landscape, on forest products and ecological services for example, while at the same time they are often portrayed as enemies of forests. Forest producers also have much to learn from the power of farmer organisations.

**What role can governments, corporates and NGOs play?**

In the Forest and Farm Facility, we strongly believe in the role of government to provide an enabling and supportive policy and administrative landscape. Through direct support to multi-sectorial and multi-stakeholder platforms, we aim to help innovators cross traditional boundaries and begin thinking at a broader and more holistic level. The more different groups know about and share information on each others’ plans and programmes, the more likely it is that they will see the overlaps and contradictions. The more the government begins to appreciate the major role of well organised small producers as landscape managers and primary private sector actors, the more they will see the benefits of offering incentives allowing them to grasp opportunities, protect their legal rights, and provide space to operate constructively. Civil society and NGOs can play an extremely valuable role in helping this process, communicating, monitoring and facilitating positive change when needed, but then stepping aside when communities and producers can speak for themselves. As for the corporate private sector, they too can help to build a more distributive economy, helping small producers thrive rather than by taking their places. Big companies and corporations will have to give way to small and medium scale businesses, however, as it is these that collectively energize the economy for the benefit of all. Industrial and vertically integrated monoculture, the agricultural ‘assembly line’ model for working with natural products and natural systems will soon be shown to be archaic, highly wasteful and inefficient, and poorly adapted to climate change.
Can we combine farming and forest conservation?

The city of Viçosa is located in the Zona da Mata region, Minas Gerais, Brazil, surrounded by mountains and poor soils that favour family farming rather than industrial agriculture. But land use has been increasing based on large scale monocultures, chemical pesticides and fertilizers, degrading natural resources and reducing natural forests to small scattered fragments in the landscape. This is seen clearly in São Bartolomeu, a watershed that also supplies half of Viçosa’s water requirements. Here, local farmers struggle to gain a dignified life from farming, coping with social problems, poor access to markets and lack of labour. Strategies are needed that enhance farmers’ involvement in combining the conservation of natural resources with sustainable agricultural production. But is that possible?

External threats and the pressure on land are increasing. The city is growing. A mining company has plans for the watershed which would affect the water, soil and also the life of local farmers. In that context, students from the Federal University of Viçosa are working at a landscape level, in partnership with two NGOs, the Center of Alternative Technologies and the Socio-Environmental Institute of Viçosa. The idea is to create ‘agroecological corridors’. Forest fragments can be connected, natural areas expanded, but also including areas managed using agroecological principles. Such landscapes have great potential to increase biodiversity, allow ‘genetic flow’ between forest fragments, and protect soil and water resources. The project is running workshops developed together with the farmers and considering their needs. The first was about soils with participants exchanging knowledge about different soil types and how best to use them sustainably. The next will be on agroforestry.

Another potential to be explored is the conversion of the watershed into an Area of Environmental Protection, a Unit of Conservation of Sustainable Use. Farmers could stay and continue farming, but may generate other benefits such as ecotourism and access to financial resources through payments for environmental services.

Farmers are being interviewed by the students and questionnaires have a focus that gives autonomy and a voice for farmers’ needs and ideas. The creation and long term success of the protected area cannot work without the incorporation of the knowledge and perceptions of local farmers and other residents and stakeholders. We think that in cases like this, environmental conservation can only be made possible and sustainable unless it is done together with an agroecological transition and the full involvement of local farmers.
With more than a thousand people per square kilometre, Bangladesh has by far the greatest population density of any similar sized country in the world. Land is scarce, and the flooding seems to get worse year after year. But, the emerging use of seasonal islands now offers some farming families a new way to grow crops on the waterways that otherwise threaten their very existence.

Nazmul Chowdhury and Nirmal Bepary

Bangladesh is one of poorest countries on Earth, and farming families have to make use of whatever space is available. Criss-crossed by 230 of the world’s most unstable rivers, the situation is worsened by flooding that affects millions of people each year, with at least 100,000 women, men and children forced to move as villages and livelihoods are literally washed away. And in recent years, flooding has intensified and lasts longer.

So if there is no more land, why not go to the water? Mohammed Saiful Islam and Tara Begem did. They pioneered an innovative, low cost and local adapted approach – sandbar cropping. Early successes suggest that it has great potential for use in other parts of the world, and this is good news that needs sharing.

**Sandbar cropping** This technique was developed through a series of initiatives in Rangpur Division, when Practical Action Bangladesh began a trial with 177 farmers in 2005, starting with the objective of ‘something is better than nothing’. This was part of their ‘Disappearing lands’ project which went on to win the Asia-Pacific gold award in 2007. This was then expanded in a second project and a joint initiative between the governments of Bangladesh and the UK. This was designed to benefit 32,000
households whose villages and farms had been lost through river erosion in five districts in northwestern Bangladesh covering 9000 km² and who had been forced to live on flood protection embankments.

At the age of three, Mohammed Saiful Islam and his family were forced to move when flooding destroyed the family home. They had to move another four times in the next ten years, before settling on a flood protection embankment in Haripur in 1992 where he still lives, now with his wife and two children. After separating from his parents at marriage, he became a day labourer enduring low wages, forced migration to other districts and having to sell his labour in advance in the lean season, meaning that the family suffered from a lack of food most of the time. In 2006, he became one of the first farmers to receive training, seeds and compost by AKOTA, one of five local NGOs that were promoting sandbar techniques with 3200 families. He began by preparing 50 planting pits, but was very uncertain as to what to expect.

Pumpkins from sand pits The season for pumpkin cultivation starts at the end of the rains, at the same time as the rivers recede and sandbars appear. Saiful was shown a suitable site and working with technicians, they developed a system of preparing planting pits. These were one metre deep and one metre wide, and around two meters from each other. Pits were then lined with a mixture of cow dung, soil and water. Jute sacks are also used to line the pits in extreme locations. Allowed to settle for a few days, seeds were then sown. Being close to the river, the pits are easily watered by hand in the early months. At the end of the dry season when plants need extra water as the fruit expands, boreholes were dug and pumps and temporary plastic-lined reservoirs helped by providing water for irrigation.

Saiful was astonished with the amazing harvest of pumpkins and the profit he made that first year from

“The opportunity and the technology is a blessing for us, it has opened our eyes to see a better life and a new hope to live.”

What are sandbars?

Sandbars are large, temporary and barren lands made of sand and silt, deposited as rivers flood and subside or change their course. These islands emerge as flooded rivers recede, are not stable enough to support permanent vegetation and remain only until the next year’s rains wash them away. As such, they are common property resources but were never before utilised. Similar temporary ‘land’ may also occur along riverbanks or as charland (where such deposits are found on fertile farmland). In northern Bangladesh, sandbars appear at the beginning of the dry season in November, and disappear as the rainy season starts in April.
nity thanks to his success with sandbar cropping, and has invested the profits in aquaculture and beef fattening. Saiful said “The opportunity and the technology is a blessing for us, it has opened our eyes to see a better life and a new hope to live.” He and his brother now plan to expand production in the following years to more remote sandbars and to try different crops.

The experience of Practical Action, national partners and the farmers, suggests that as few as one hundred pits can bring tangible and significant improvements for an extremely poor farming family. It is a simple and low cost technique that requires no special inputs. The pumpkins produced on the sandbars can be stored in people’s home for more than a year and therefore greatly assist poor households with income generation, food security and lean season management. In the winter dry season, sandbar cropping also transforms the barren landscape of these ‘mini desert islands’ into productive green fields which also support a wide range of insect, birds and other small animal species due to the habitat created.

With additional support, the technique and the benefits have been greatly outscaled in northern Bangladesh. More than 160,000 family members are thought to be benefitting, and the idea is spreading. Sandbar cropping techniques have been taken up by Care Bangladesh, Concern Worldwide, Friendship International, interest shown by UNDP and field visits by the Ethiopian Ministry of Agriculture.

Since 2005, more than 15,000 people and their families, mostly displaced or landless and mostly women, have adopted the sandbar cropping technique and produced more than 55,000 tonnes of pumpkins worth more than five million US dollars. These experiences clearly show how family farmers are able to innovate when their land and livelihood is put under pressure by ever more mouths to feed from the same land, and further threatened by more natural disasters in form of floods. The answer here is to make the best use of any land, however temporary.

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His name is Aman Mame. He reads the landscape as a mullah reads the Koran or as a high priest reads the Bible. We were on the second day of a participatory mapping exercise in a small village called Horo Soba overlooking the Bale Mountains in Ethiopia. I asked three teachers to each draw an eco-cultural calendar, a circular seasonal representation showing how culture, climate, nature and livelihood responds to each season.

The teachers divided the year into four seasons. But Aman Mame divided his into five. The teachers were shocked, and upset by their authority being challenged. But Aman explained his five seasons and showed how life in the landscape and his livelihood activities fit and respond to each, cultural aspects of how they welcome the coming seasons, and how the climate speaks to them.

Afterwards one of the teachers said “I was born here, but I saw places on his map that I did not know and I now feel like a total stranger. We need to teach this to our children.” Aman Mame replied, “you must know your land and remember your past. When the past is forgotten, the opportunity is lost for the present. Recalling the past will help us meet today’s challenges and those yet to come.” His community is now taking part in a social process to revive their past, compare it to the present and carry what is valuable to them to the future.

Social memory provides context for social response to ecosystem change, which is important during periods of crisis, and increases the likelihood of flexible and adaptive responses. As memory provides the framework of accumulated experience for coping with change, the mobilisation of memory through mapping has assisted local people to improve their resilience.

This collective memory is under assault in Africa. The new generation is substituting their memory of their landscape and the stories of their parents and ancestors, with the thought that they have no attachment to the land. Rural children spend hours arguing about European football clubs and players, and a generation with lost memory is easy prey for consumer culture. They have no patience and want everything now, and this has proved so detrimental to our landscape. This insatiable desire for the new and gratifying is tearing the social fabric in Africa and leaving its ugly mark on the landscape. To save it, we must remember our past.
Millions of hectares of once degraded dustbowls across the world’s drylands have become ‘reforested’ in recent decades. The landscape has totally changed, but the trees were not planted. Exotic trees have spread ‘naturally’, creating dense forests over large areas. Local farmers and pastoralists must be happy then? Not at all. The trees have actually made their lives worse, invading pastures, as a weed in farmland, blocking paths and roads, and they have even forced some communities to relocate. But through the sharing of experiences from country to country, more people are learning how to make the most from this new resource.

Simon Choge and Nick Pasiecznik
invaded prosopis in neighbouring Ethiopia, the same amount in Kenya, Sudan and Australia, two million in South Africa, five million in India, and millions more in Brazil, Mexico and the USA, Pakistan and Sri Lanka, from Senegal to Somalia, in eastern and southern Africa, and numerous island states. Prosopis is classified amongst the ‘world’s worst alien invasive species’, and is a legally declared national weed in many countries.

However, prosopis trees and ‘forests’ also produce a multitude of resources, some of which are already used to some small extent but most remain very much underutilised. Since the 1990s a small but growing group of professionals have been developing and promoting an innovative approach of ‘control by utilisation’ as a win-win solution to address this dilemma of how to manage a useful but invasive species. The aim is to turn this unappreciated tree into a source of valuable products to help alleviate poverty and improve food security in dry areas, while at the same time reducing its negative ecological and social impacts.

The need for knowledge

Known as mesquite or algarrobo in their native Americas, prosopis has been introduced around the world since the 1800s. They were seen as useful, fast growing and drought tolerant trees that could provide fuel, fodder and shade, but whereas the trees were successfully introduced, the indigenous knowledge on how to manage and fully utilise them was not. In the late 1990s, experts from Argentina, Peru and Mexico were brought to India to show people there the many uses of prosopis trees and ways to process them, such as how to mill the pods and how to saw the often twisted logs.

The experience gained was then transferred to Kenya some years later, where it took hold. Government policies changed and many businesses sprung up, with an estimated million US dollars per year now added to the collective incomes of selected communi-

Prosopis – valuable resource or invasive weed?

In tropical dry areas of Africa and Asia, one species stands out – Prosopis juliflora. It was widely planted in the 1980s as part of reforestation programmes, and quickly spread, creating dense and impenetrable thickets in agricultural, pasture and natural areas. It out competes native species and forage plants, is very thorny, and can completely block paths and roads. But in its native American range, prosopis are appreciated as valuable trees, especially for their sweet and protein-rich golden-yellow pods which are ground into flour for making animal feeds or human food. The wood and charcoal is of high quality, posts and poles are marketed, and the heartwood is very hard indeed making excellent flooring and furniture. Prosopis honey fetches a premium price, the resin is equivalent to gum Arabic, and all plant parts have medicinal uses. It is also a nitrogen fixing tree that improves the fertility of surrounding soil, and provides good shade, shelter and erosion control.
ties through the sale of prosopis charcoal and pod flour. A ‘green’ power station is also being built in Kenya that will supply 5 MW of electricity by burning prosopis wood alone, based on a model in use in India.

And on to Djibouti Thanks to the pioneering vision of Mohamed Awale, then Secretary of State for National Unity and now Minister of Agriculture, successive visits were made to transfer this knowledge to Djibouti beginning in 2008 and later supported by UNDP. Beginning in 2012, the FAO as part of a Technical Cooperative Programme assisted the government in providing four communities with equipment and training so they could better manage and utilise the ‘free’ prosopis resource growing ever larger around them. Pod milling machines from India that were tested and proved successful in Kenya were imported and installed along with improved charcoal kilns. Tools and protective clothing for managing thorny stands were also supplied, and training was given on stand management of invasive stands, and the operation and maintenance of these new technologies.

The cooperative in Hanlè took up this opportunity with both hands. In 2013, they organised the collection of almost six tonnes of pods from over a wide area and brought them all to the site of the mill. Much of the milled pod flour was given out to cooperative members for mixing and feeding to their own livestock, and the people saw how the animals appreciated it, growing strong and with better milk yields. The cooperative was especially happy with their first sale of milled flour, of 110 (25 kg) sacks that were sold to livestock producers for FD1500 each (or a total of almost US$1000). There was strong demand for more, with buyers saying that it was a very nutritious, competitively priced and locally sourced concentrate that replaced some of the expensive, imported feeds that they currently rely on.

Ali Hamad said that the cooperative would certainly take up the pod processing technology and wanted to increase production from last year’s ‘experiment’. They would invest in fuel, oil and empty sacks, had already identified 10 families in each of the three main prosopis area to lead the pod collection, and would use their own cash reserves to pay FD300 for every 10 kg sack of pods collected. If production only equals that of 2013, this would mean that collectors in the local area, mostly women, would receive a total of about US$1000 thanks to the development of prosopis pod flour as a new value-added product. A neighbouring community on Gob’aad is also planning to make more use of prosopis, but they see more benefits from charcoal than from the pods. Beekeeping is another avenue worth further exploration.

Landscape management Ali also told of a recent meeting between livestock owners and charcoal makers in the area, which resulted in an agreement on the future management of dense prosopis thickets. The causal issue was the death of seven camels due to attacks by hyenas. Whereas small livestock are corralled at night, camels are left to roam
freely but are normally able to evade attack. Now, however, many paths have become blocked by encroaching thorny prosopis and hyenas are able to corner camels and kill them. Camel owners asked if charcoal makers could clear roads through the dense stands as they cut wood for charcoal instead of just clearing blocks of trees as they usually do. They agreed. This is an excellent example of different interest groups within a community being able to agree a common approach to natural resource management in a changing environment, for everyone’s mutual benefit.

Introducing new tree species or any other crop is not enough, if the traditional knowledge on how it is best used does not accompany it. Though as is seen from this example, the knowledge can come along later, and will be adopted if it is appropriate for the locality. With invasive plants, there is the added advantage that the resource is effectively ‘free’, and there is much potential for adapting the ‘control by utilisation’ approach for other weeds. Also, this case shows how knowledge from the native range been adapted in steps for each situation, and also the importance of committed development professionals in ensuring that ideas make it out into the hands of farmers.

Before leaving the shade of the doum palm, Ali Hamad summed up their experience. “Before, we didn’t know what we could do with prosopis pods, but then we milled it, people took the flour home, mixed it and gave it their animals. They ate it with relish, and now we have started selling prosopis pod flour - the pods have really become ‘gold’ for us.”

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Benefits from milling prosopis pods

When eaten whole, the hard seeds pass through the animals’ gut undigested, and germinate into new invasive plants. In the dry season when the sweet pods may be the only forage available, the sugars also tend to cause tooth decay and stomach disorders in livestock, and some animals even die. And most of the protein is in the seed, which is then ‘wasted’. By processing the pods, not only is the seed protein made available for the animals to digest, it is easier to mix, and some two million seeds are destroyed for every tonne of pods that are milled. The pod flour is also used a nutritious ingredient in human foods in its native Americas but it not eaten in Africa.
Land Solutions for Climate Displacement
Climate displacement is already a reality for an estimated 26 million people worldwide. This title looks at where displacement is taking place and where it will occur, and seeks rights-based policy options that will secure land-based solutions for communities displaced by changing climates. The issues in Bangladesh, Myanmar, Papua New Guinea, Solomon Islands and the USA are reviewed in detail, offering many views but highlighting for all cases that the loss of land and the need for new land is the main challenge. There is an urgent need to act now at the legal and policy level but also at the community level, and although the complexity of climate displacement is acknowledged, the final message is that ultimately solutions are a question of will.

Community Well-being in Biocultural Landscapes - Are We Living Well?
People must be at the centre of decision making concerning the management of the landscapes in which they live. This book convincingly argues the case for considering the cultural side of landscapes, and takes a fresh and detailed look at the variety of means for assessing well being and the multiple dimensions involved in capturing this. It provides insight into what determines the success of projects that originated from communities’ own realities and worldviews, and informs broader questions such as how we can balance our material, social and spiritual well being, and how we can flourish within the ecological limits of our planet.

Power of persuasion is drawn from a diplomatic style as the introductory chapters acknowledge the evolution of thought from using GDP as a purely economic measures of ‘progress’ towards other measures of well being. Key concepts are introduced, namely, ‘community well-being’ and ‘biocultural landscapes’, both crucial considerations for ‘endogenous development.’ These concepts are operationalised within frameworks that use selected indicators and ‘most significant change’ stories to monitor material, social and spiritual aspects of well being. Case studies from Sri Lanka, Ghana and Bolivia demonstrate how the frameworks have been used and reveal learning outcomes for local and external actors within endogenous development projects. In Sri Lanka for example, religious underpinnings of people had been underestimated as it was revealed that the dominant form of rice cultivation reliant on pesticides contravened Buddhist principles.

The resounding message is that a community is more than the sum of its individual parts. Communities share ecosystems and landscapes and are engaged in activities of importance to their economy and environment. The book concludes with reflections on why well being assessment at the community level is important and what challenges need to be addressed, such as conflict resolution and building consensus. A final plea is for more partnerships between community-based organisations, local support organisations and international institutions, in order to better understand the social, spiritual and material realities of living well.
The idea of family farmers in living landscapes evokes a richness of imagery and an equal richness of topics for further reading. Undoubtedly the glue that binds it all together is the interconnection between the natural and cultural aspects of landscapes. Thinking through Landscape (Berque, 2014) explores this connection from an historical and philosophical perspective and helps to explain the contemporary environmental crisis. Recognising this interdependence between biological and cultural diversity is crucial for sustaining landscapes, and Nature and Culture: Rebuilding Lost Connections (Pilgrim and Pretty, 2013) is a compilation that offers positive solutions for communities struggling with the disconnect between nature and culture. The right to land is another essential theme, particularly pertinent for indigenous peoples who hold special relationships with their land and resources. Indigenous Peoples Rights To Lands, Territories and Resources (Feiring, 2013) assesses the main international instruments, mechanisms, UN bodies and other regional and global initiatives that address such concerns, and Respecting Free, Prior and Informed Consent (FAO, 2014) supports responsible governance of land, fisheries and forests. A complementary read related to global land deals and peoples’ rights is Governing Global Land Deals (Wolford et al., 2013), a nuanced collection of papers dealing with the role of the state and political power in the negotiation and implementation of land deals. Community based forestry management and forest conservation are other topics that resonate within the landscapes theme. Whereas the land sparing versus land sharing debate intensifies in the academic and international policy spheres, the perspectives of land managers who make decisions at the local level should not be forgotten. Land sparing and land sharing: Perspectives of indigenous peoples and rural communities (Platform for Agrobiodiversity Research, 2014) is one short brief on this issue that places family farmers and indigenous peoples at the centre of discussions concerning their landscapes, as they should be.
Mountain landscapes have long been nurtured by family farmers, and these landscapes, in turn, sustain farmers’ livelihoods. Yet, mountain life is by no means easy. Inaccessible terrain, harsh topography and social and political marginalisation tend to undermine food security. This led farmers in some areas to look at income generation by switching to cash crops. But this caused new problems, as a community in the Nepalese Himalayas discovered, and who have been on a journey from biodiversity to monoculture, and back again.

Sandesh Timilsina
Grains produced in mountain landscapes may fill the bellies of mountain people for a few months each year, but for the remaining months, farmers have to rely on other sources of food and income, or may have no alternative but to buy grain on the market. In 1989, cereal production began to decline, due to poor rains, lack of labour and no technological advancement. Subsequent food shortages led farmers to focus on new cash crops for export, and commercial orange farming appeared to offer the best way out of poverty and dependence. Around 55 household in Chitikhola, Tanahun District, began planting orange trees in 1991, and entire north-facing terraces were soon transformed into orange orchards.

**A journey to monoculture...** For the first years, the results were impressive. Orange farming quickly and significantly improved the economic status of the farmers. In 2006 and 2007, these farmers produced a total of 300 tonnes of oranges, earning US$62,000 between them, or an average of US$521 per individual farmer per year. This was an increase of almost US$150 for each farming family. Every year, the land planted with oranges increased and yields per hectare also increased. However, this prosperity soon came to an abrupt end. By 2010, in the space of a single year, around 10,000 orange trees were killed by ‘citrus decline’ disease and the whole basis of their newly found wealth and livelihood was destroyed. This left farmers who had become solely dependent on orange production with nothing but devastation, and a whole new set of challenges. The community sought help from the government but was offered little support to compensate them for their huge losses.

In the face of this disaster, farmer and community leader Basu Raj Kadariya put his creativity and intelligence to work to revive the landscape and rebuild a resilient farming system. Having learnt from the catastrophic consequences of relying on a monoculture, he diversified his farming activities to minimise risks. He started by prioritising livestock rearing, small scale vegetable farming and small scale beekeeping, introducing more varied crops, and using forest resources in a more sustainable way.

**...and back again** Basu Raj Kadariya developed his farm as a learning center for other small farmers in 2011 soon after the orange orchards were killed. Being a progressive farmer, he took on the responsibility of teaching other poor farmers about new farming techniques and innovations, using seeing-is-believing and learning-by-doing as the best approach. Using his own farm as a learning and demonstration centre, other farmers come to learn new farming skills and crops. New growing technologies for tomato and cucumber are mostly preferred by these farmers who hope to add extra income for their family. Almost all the farmers in his village have benefitted from his learning center, and besides this, he has directly shared his knowledge and farming innovations to around 160 farmers from other villages who came to visit his farm asking for help. He recently demonstrated how to use drip irrigation for producing tomatoes in plastic greenhouses.

Initially, the community was not confident about how crop diversification could restore their economy and their landscape, especially after their experience with oranges. The selection of the right crops was crucial and farmers were cautious after the recent failure of their whole farming enterprise. With their traditional farming knowledge, they began to grow other vegetables which performed much better, the landscape begin to revive.

**Integrating livestock** Livestock, and especially goats, buffalo and poultry offer Nepalese farmers numerous benefits within their diversified farming systems. Goats are affordable but are also a valuable source of ‘insurance’ if crops fail, providing

**Citrus decline**

The name ‘citrus decline’ is open to confusion as it can be used to refer to several diseases. In Nepal, the name refers to the bacterial disease *Liberibacter asiaticus*, otherwise known as citrus dieback, Asian greening, yellow dragon, or huanglongbing. It is regarded as one of the most important threats to global citrus production, and by the early 1990s it was estimated that more than 60 million trees had been destroyed worldwide. In Asia, more than 100 million trees have been destroyed, and it continues to spread, with one million trees killed in Brazil in 2004.
milk, meat and income. Through their grazing and browsing of certain plants, animals also play an important role in maintaining the whole landscape, and help to sustain organic crop production by the manure that they produce. Farmers in Chitikhola now raise more livestock using traditional practices which involve providing shelter, and nutritious fodder. The presence of sufficient fodder trees within the landscape is a critical factor enabling farmers to keep animals within their farming system. Tree species being planted include khanyo (Ficus semicordata), tanki (Bauhinia purpurea), and dabdabe (Garuga pinnata), with other fodder plants being bhatmase (Flemengia congesta), napier (Pennisetum purpureum), kutmero (Litsea polyantha) and gideri (Premna barbata).

Crop diversification Farmers are now reshaping their landscape and rebuilding resilient farming systems not only through integrating livestock but also through crop diversification. Among the various vegetables grown, surplus from some of them such as tomato and cucumber are sold on the local market. Growing more crop species is far less risky than depending on just one, provides a greater variety of possible income sources and spreads production over more of the year. Farmers have taken control of their own seed production and storage, and this self sufficiency reduces their costs and increases their profits. Based on recommendations from local extension officers, some high yielding varieties such as the hybrid tomato ‘Shrijana’ have been introduced and are increasingly grown. Beside vegetables, Basu Raj Kadariya, for example, is planting more cardamom on the bunds of terraces, adding yet another income from the sale of this spice while also reducing the risk of erosion. Agroforestry is another way of diversifying their farms, and farmers have started using some space on their terraces to plant the fodder tree badhar (Artocarpus lakoocha) which further supports the integration of livestock into the landscape. Diversification is an ongoing process and with the help of extension staff, progressive farmers lead the way in exploring options for new crops such as kiwi fruit, with many other farmers now beginning to experiment on their own.

Environmentally friendly methods such as compost, manure and organic mulches are used to feed and protect the soils and the crops, which they have re-learned from the days before growing oranges. Others, like botanical pesticides, are new, and their integrated use has become a turning point for developing organic crop production which is leading to healthier agro-ecosystems. Botanical pesticides, known as jholmol, are made locally by fermenting local plants such as neem (Azadirachta indica), asuro (Justicia adhatoda), chilli (Capsicum frutescens) and timur (Zanthoxylum armatum) with cattle urine and curd for 45 days. Now, their organic vegetables are highly sought after on the local market as people consider them to have superior taste and quality.

Sustainable use of the forest Local areas of woodland such as the Bageshwori Community Forest provide fodder, mulches and firewood along with various ecological services, but they also offer additional opportunities. Kadariya worked with the community forest user group that was established in 2009 and includes all the local farmers, to begin shitake mushroom cultivation. The forest is...
dominated by tree species like chilaune (*Schima wallichii*), katus (*Castanopsis indica*) and sal (*Shorea robusta*) whose wood is suitable for mushroom cultivation. Small pieces of timber from katus trees and cool temperatures are ideal for growing shiitakes. Shiitake mushrooms are highly nutritious, have many stated medicinal properties, and fetch a high price on the market. Once spores are inserted into holes in small pieces of timber, it takes about 6-9 months until the first harvest, and production continues for more than five years. Conservation of the forest areas is also a priority, with groups of farmers planting and conserving young trees, and quotas are agreed and issues to ensure sustainable harvest during regular council meetings which decide the level of sustainable harvests, equitable prices and conservation strategies. For example, each household is allowed to harvest 20 logs for free, after which they must pay US$0.21 (or Rs. 15) per piece.

**Beekeeping** Diverse crop and forest species support diverse and healthy bee fauna within the landscape. *Apis cerana*, a honey bee native to the Himalayan region of Nepal, has been reared by local farmers in small scale hives for many years, but has increased dramatically in recent years. Farmers now keep up to five hives, and produce organic honey for local markets and for sale farther afield. Honey is considered to be a heavenly food in Nepal and it is an important source of both medicine and nutrition. Beekeeping not only provides food and another source of income to farmers, but the presence of bees also enhances vegetable production through pollination. The government is also encouraging mountain people to take up beekeeping in a more organised way, as they have realised the benefits from the conservation of forests and crop diversity that lead to more secure livelihoods.

**Locally adapted practices are being put to work to revive and reshape an entire mountain landscape**

**Better than before** This is a story of a community that took action to rebuild their landscape after a disaster caused by a switch to reliance on a monoculture. Well acquainted with hardship and the struggle for food security, farmers in Chitikhola were eager to improve their prospects. Specialised orange production promised new horizons but the arrival of a new disease that caused a sudden and absolute devastation of their orange orchards changed their landscape. A leader farmer, Basu Raj Kadariva, was quick to understand that prosperity without resilience is temporary at best. He realised that diversification offered a true pathway towards a better life, and set about to experiment and provide the leadership needed to revive the landscape. Livestock, crop diversification, sustainable use of forest products and beekeeping became complementary elements of a new farming system. A local learning centre enabled farmers in the community to learn about and experiment with a range of practices on their own farms. Ultimately, local knowledge and creativity resulted in locally adapted practices that are being put to work to revive and reshape an entire mountain landscape.

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The landscape of Lamandau area in Kotawaringin Barat District, in central Kalimantan, Indonesia, has undergone several changes over recent decades. Initially a natural freshwater swamp forest ecosystem, the area was changed into production forest with concessions granted to two timber companies. Then in 1998, a Minister of Forestry Decree changed the area by establishing the Lamandau Wildlife Reserve covering 76,000 hectares.

Pak Usub used to make his living from working in forest industries, and put his hand to illegal logging in a protected forest reserve. However, realising that the trees would soon all be cut, he turned to farming to make a living. He and former logger friends developed new farming methods to overcome the constraints they faced. Now they earn a good living from farming and no longer need to cut trees from the forest.

Janudianto and Subekti Rahayu (adapted and translated by Shintia D. Arwida)

The reserve is exceedingly rich in biodiversity. Common animals include orangutans, gibbons, proboscis monkeys, bears, deer and hares, living in the forest dominated by ramin (Gonystylus bancanus), meranti (Shorea spp.), jejambu (Eugenia spp.), fir (Casuarina spp.), Ulin (Eusideroxylon zwageri) and compass (Koompsia malaccensis). What makes it more special is that the reserve is where orangutans confiscated from illegal traders and private owners are released after being kept at the Orangutan Care
fields from sea water intrusion and flooding, and also helped the farmers to ‘harvest and save’ water when the tide was up in the Lamandau river.

They then planted mango orchards using the same method as for the rice and vegetable fields, with the harvest sold in to nearby villages. Following this success, Pak Usub and his friends also planted other fruit trees such as jackfruit, soursop, sapodilla, and star fruit. They also tried to grow the native jelutung (Dyera sp.), with Pak Usub saying, “these trees are for my children and grandchildren. They can tap the latex and sell it.” In addition, they had a huge success when they started breeding ducks, now having more than a thousand birds. All their soil fertility needs are met too from the compost they make by mixing crop residues with duck manure.

The work of these agriculture pioneers attracted the interest of local government, as their initiatives proved most able in supporting local livelihoods and thereby reducing forest encroachment. Akhmad Yadi, head of the Agriculture and Animal Husbandry Agency, said, “This is a good example of rice farming in tidal peat. With simple technology, they were able to keep the land from flooding or overflowing tides. Their harvest of six tonnes of dry grain per hectare is also a remarkable achievement.”

The success of Pak Usub and friends was not immediate, however. It required risk-taking, hard work and perseverance over the years, to overcome the many early setbacks. But gradually, they managed to regreen the landscape damaged by illegal logging. And besides that, the land is also more productive now. Family farming supports their livelihood, and with a stable income, Pak Usub and his friends no longer need to cut trees from the forest.

Mr Subeli, commonly called Pak Usub, used to harvest ramin logs in the buffer zone forest of Lamandau Wildlife Reserve. He and his family came to south Borneo around 1990, attracted by the lucrative ramin business, working first in sawmilling and processing industries which were mushrooming at that time. But in 2003, Pak Usub changed his mind. Based on daily observations, he began to realise that he could not depend on ramin forever, and that one day there would be no more trees left. He decided to start farming on the illegally logged-over land abundant around his village of Serumpun. He started to grow rice, and vegetables like Chinese green mustard and snake bean. Settled farming was a totally new activity in the area, since local people used shifting agriculture, which was thought of as more productive and profitable than settled farming.

Pak Usub was looked upon by his neighbours as a foolish risk taker for cultivating rice. Being close to the sea, Serumpun was never considered as a suitable area, with salt water intrusion in the dry season and flash flooding in the rainy season as annual threats. To overcome this, Pak Usub and other former logger friends who also wanted to start family farming, experimented with new practices. Armed with his former experiences as a farmer in his hometown in south Kalimantan, he built dykes and dug trenches around his rice fields, connected to irrigation channels with sluice gates to regulate water flow. This protected the

Orangutans find a safe haven in the protected reserve. Photo: Yayorin

Logging threatened the reserve, but an alternative landscape management was found. Photo: Wirman

Centre and Quarantine in Pangkalan Bun.

But when it was created, the reserve was seriously threatened by illegal loggers who would enter to cut the remaining ramin trees. Wild ramin grows only in freshwater swamp forest and due to illegal logging their numbers have declined sharply to the point where it is threatened with extinction. The International Union for Conservation and Nature has put the species on its ‘red list’, but the beautiful timber is still highly sought after and can fetch US$1000 per cubic metre on the international market. Whereas there is little hard data, it is certain that ramin timber and wood products are still being exported illegally, even though there is an official government ban on the export of ramin logs.

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LOCALLY ROOTED > IDEAS AND INITIATIVES FROM THE FIELD

Landscapes are rich melting pots of biological and cultural diversity which, in many cases, are under threat. Here, from across the globe, we see four examples of farming communities taking initiatives to resist the destruction of their environment, assert their rights and improve their landscapes.

Implement the constitution now!

In July 2014, social organisations in the province of Entre Rios in Argentina began legal action before the court of justice. They are demanding the implementation of the 2008 provincial constitution, which proposes a groundbreaking transition toward sustainability. In particular, it defends small scale producers and promotes sustainable production, trade and consumption, while discouraging latifundio (large scale land ownership, which is widespread in the region). This is particularly significant in Entre Rios, where genetically modified soybeans are produced on 70% of the territory. Six years after establishing the constitution, nothing has happened. So in collaboration with the university and farmer organisations, the M’Bigua Foundation has requested regulatory legislation. This would mean the promotion of agroecological belts around cities, establishing access to safe drinking water as a human right, protection of the soil, and the promotion of diverse and sustainable production. One crucial element in the constitution is the formation of an Economic and Social Council with participation of farmers. “The new constitution is unique as it protects our rivers, soils and right to water. Turning it into law will signify a major policy change, including greater social participation in territorial planning” says Jorge Daneri of M’Biguá.

More information: M’Biguá Foundation. Email: mbigua@mbigua.org.ar

Lock the gate for fracking

The bright yellow signs nailed to farm gates across much of Australia’s countryside say it loud and clear: coal and gas companies are not welcome. Australian farmers and small town communities have been the new face of resistance to inappropriate mining and coal seam gas. More than half of Australia is covered by coal or gas licenses and the recent corporate interest in unconventional gas extraction (using a process known as ‘fracking’) is threatening farmland, ground water and native vegetation on a large scale. The rate of expansion of coal seam gas wells in Eastern Australia has been incredible and it is estimated that 40,000 new wells may be drilled in the coming decade. Lock the Gate Alliance, a national coalition, has proven hugely successful in hampering the unprecedented push to drill holes in the landscape. Companies have been forced to pull out of existing projects. One recent win was in the Northern Rivers region of the state of New South Wales where months of direct action by local community members resulted in a suspended mining license and local councils declaring their lands to be fracking free. Success of the continuing campaign highlights the power of new alliances between farmers and environmentalists who share a commitment to protect the fabric of rural Australia. The campaign started with landowners locking their gates but has grown to encompass entire communities taking action and building the power needed to protect their landscapes.

For more information, contact the Lock the Gate Alliance. Email: info@lockthegate.org.au
Mate-scapes

Yerba mate (pronounced ‘mah-te’) is a plant used for making a traditional ‘tea’ in South America, and increasingly marketed worldwide. The shrub (*Ilex paraguariensis*) produces caffeine-rich leaves with medicinal properties when taken as an infusion. Less well known, however, are its benefits in conserving biologically rich landscapes. In Brazil alone, mate is grown on 700,000 hectares, although 57% of national production is still collected from native forests. In the Planalto Norte Catarinense, Santa Catarina, pasture, forests and yerba mate co-exist as a mutually supporting agroecosystem. However, this is threatened by the artificial distinction between ‘landscapes of production’ and ‘landscapes of conservation’ that exists in the minds of experts and policy makers. Researchers and extensionists promote industrial monocropping of yerba mate with agrochemicals. Wild collection is disregarded as something primitive, and is seen as contrary to conservation goals by many ecologists and forestry technicians. Legislation is threatening to put severe restrictions on the management of these forests, making the easiest option being to convert these forests to agriculture. But farmers in the Planalto Norte Catarinense are hesitant, knowing the benefits they gain from wild yerba mate, construction timber and firewood. This mosaic of natural forest, yerba mate fields and cattle pastures, creates a unique landscape where biodiversity conservation and family farming combine. And in Santa Catarina, farmers are ensuring this continues to be possible.

For more information, contact Anésio da Cunha Marques, environmental analyst at the Instituto Chico Mendes de Conservação da Biodiversidade; Valdir Frigo Denardin, professor at the Universidade Federal do Parana; or Mauricio Sedrez dos Reis, professor at the Universidade Federal de Santa Catarina.

Defending landscapes: Mayan peasants beat Monsanto in court

A small group of beekeepers caused a major problem for the multinational Monsanto company when on the 7th of August 2013, a court in the state of Yucatán cancelled permission to the company for the commercial planting of genetically modified (GM) soybeans. The reasons were that this would have had harmful effects on beekeeping by indigenous Mayan peoples and family farmers in the region. This legal victory halts the planting of 253,500 hectares of GM soybeans in seven states in Mexico, protecting about 30 thousand indigenous farming families. Community based organisations under the umbrella name of Acción Colectiva filed a lawsuit when the permit was granted, and protests came from thousands of Mayan farmers and beekeepers, Greenpeace, the Mexican National Commission for the Knowledge and Use of Biodiversity, the National Commission of Natural Protected Areas and the National Institute of Ecology. The First District Court of Yucatán said that co-existence between honey production and GM soybeans is not possible. The permit was also revoked because it was granted without consultation, being a direct violation of the rights of the communities for adequate consultation. In addition, the court found that there is also a risk of contamination of other crops in the region from using GM seeds.

For more information, contact the Seeds of Life Foundation/ Acción Colectiva, Mexico. Email: contacto@semillasdevida.org.mx
Sacred forest landscapes, self-reliant agroecosystems

In a multi-ethnic region of Yunnan province, China, the Dai minority have thousands of sacred forests. They say, “If there were no forest, there would be no water source; if there were no water, there would be no paddy fields, and as a result, there would be no fish or rice we could live on.”

Yinxian Shi

Sacred natural forests form part of the farming and forest landscape that surrounds each village and community in tropical and subtropical areas of Yunnan province, south-western China. These are strictly protected and periodically worshipped by everyone in the community. The Dai ethnic group have three distinct kinds of sacred natural forests, each with its specific spiritual purpose. These are as a resting place of the dead, for ancestor worship and the worship of natural gods where they pray for the well being of this life that are known as ‘long’ forests, and as a place to worship Buddha where they pray for the well being of future life. Traditionally, the existence of sacred forests is also believed to grant the communities good weather, good harvests and good health.

Sacred forests and family farming The sacred natural forest is the basis of the Dai people’s traditional farming system, that includes sacred natural forest, multi-storey home gardens, fuelwood plantations, cash crops, rice paddies and fish ponds. They see their landscape as a whole, and not as individual components. They see it as a self-reliant agroecosystem which gives them all the food they need to live on, in perpetuity.
Ecological studies have confirmed that the natural vegetation that makes up these scared forests serves several positive functions for the ‘folk farming systems’. They serve as protectors of the headwaters of nearby rivers, ensuring the continuing flow of water for irrigation and also reducing the risk of flooding. They provide organic matter for soils downstream, and provide a home for the natural enemies of crop pests, such as owls, woodpeckers, geckos, tree lizards, toads and other animals. They stabilize the soil, prevent erosion, and are buffer against natural disasters. The Dai say that the existence of their scared forest means that they can farm well without any agricultural chemicals, dams or reservoirs, and are rarely affected by extreme climate events. They have mastered irrigation using the inexhaustible supply of water from these forests, and so paddy rice became their principal food. The Dai community were one of the first people in the region to cultivate rice and have developed more than 60 high quality rice varieties, recognised as precious crop genetic resources.

Traditional life under threat Due to industrialisation and the ‘modernisation’ of traditional family farming in southern China, many sacred natural forests have been or are being destroyed. In one region alone, Xishuangbanna, there were more than one thousand protected ‘long’ forests before 1958 with a total area of 100,000 hectares. By 1984, there were only 400 such forests covering 50,000 hectares. In addition, local farmers say that the use of chemical fertilizers and pesticides, the establishment of a water conservancy project, and extreme climate events, all added to the impacts on their traditional farming system. Thankfully, according to a field survey in May 2014, most of those 400 ‘long’ forests are saved, although they are much smaller than before.

Protecting traditional farming landscapes A certain area of natural vegetation is indispensable for a self-reliant agroecosystem, and as such, protection of these sacred forests is necessary to sustain the Dai’s traditional system of family farming. Fortunately, a group of researchers and government officials working with local farmers and supported by the provincial forestry department, have in 2014 started a broad programme investigating and restoring sacred natural sites in Yunnan. This is a good sign that the focus has begun to change, with such efforts towards the maintenance of traditional family farming in the region, based on sound agroecological practices.

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A decade of integrated landscape management

This ‘landscape’ issue of Farming Matters comes at a most timely moment. It presents a perfect opportunity to reflect on how agricultural landscape thinking and action has evolved during the past ten years, and the implications of this for the future of family farming.

Sara J. Scherr

It is ten years since the first international ecoagriculture conference and practitioners fair was held in Nairobi, and the resulting establishment of EcoAgriculture Partners. Experiences from that meeting also provided much content for a 2004 issue of Farming Matters (then called the LEISA Magazine) on agriculture and biodiversity conservation. At that time, we felt we were at the beginning of a new way of thinking and acting about farming and landscapes that challenged the agriculture mainstream. A decade later in July 2014, the first conference on Landscapes for People, Food and Nature in Africa took place, also in Nairobi. And what a contrast! Nearly 200 experienced landscape champions from 20 African countries, from the grassroots to the grasstops, were confident enough with advances underway to design an ambitious African Landscape Action Plan to scale up integrated landscape management.

Agricultural landscape thinking in 2004 ‘Landscape thinking’ had been around for decades, but was originally focused on achieving mainly environmental goals through large scale forest, habitat or watershed conservation. Increasing agricultural production or farmer incomes was rarely an objective, and many landscape programmes even sought to limit farming. In 2004, there was still considerable conflict between the agriculture and environmental communities, and the relationship was framed as an unavoidable trade-off, an ‘either/or’ marked by distrust and fights over the designation of land use priorities.

We coined the word ‘ecoagriculture’ in 2001 to describe the management of mosaic landscapes including farms and protected areas, with the aims of jointly enhancing agricultural production, biodiversity (of both cultivated and wild species), ecosystem conservation, and local livelihoods. LEISA Magazine in December 2004 highlighted diverse examples of this from all over the world. For the most part, these innovations and adaptations to indigenous practices were being implemented at small landscape scales, and were rarely part of government policy or development programmes. Data on the many benefits of these approaches was still limited and analysis was in any case a challenge.

From thoughts to action But away from the public eye, innovation was happening everywhere, as practitioners and researchers sought to find synergies between farming and conservation. Much of the world’s agricultural land is in areas that...
are also critically important for water resources, wild biodiversity conservation or climate change adaptation and mitigation. The dependence of agricultural production and sustainability on healthy ecosystems was becoming increasingly recognised. As so many different people live in any single landscape and must share the same resource base, negotiating acceptable agreements among them is essential. During the past decade, many initiatives that focused on specific ‘sectors’ such as water management, biodiversity conservation, land restoration or agricultural development, evolved to promote multifunctional landscapes that meet the needs of diverse stakeholders.

Although more than 80 terms have been used by different people to describe aspects of integrated landscape management, in 2013, the Landscapes for People, Food and Nature initiative agreed on a working definition. Such management involves long term collaboration among different groups of land managers and stakeholders in order to achieve their multiple objectives and expectations within the landscape regarding local livelihoods, health and well being. Integrated landscape management encompasses agriculture, ecosystem services, biodiversity, aesthetic landscape value, cultural identity and recreational values as well as human settlements and resource extraction industries. In seeking complementary solutions to common problems, they pursue new opportunities through technical, ecological, market, social and policy means.

As landscapes are complex socio-ecological systems, accepting dynamism and change must be inherent in their management. There are many different approaches to integrated landscape management, with different entry points, processes and institutional arrangements. Most include features of conflict management, an understanding of democratic rights, broad stakeholder participation, negotiation based on common objectives and strategies, adaptive management based on shared learning, and sustainability as a goal for human needs and ecosystem health.

**Family farmers in landscape management** Family farmers are clearly critical stakeholders within agricultural landscapes, given the reliance of their multi-faceted livelihoods on diverse landscape features for resilience, and stewardship of resources under their management. A recent survey documented 104 integrated landscape initiatives in Latin America and 87 in Africa. Of these, more than 80% had producer organisations as key stakeholders, and more than 40% included indigenous peoples’ organisations. However, although family farmers are involved in landscape initiatives, their roles are often restricted to being the object of actions designed by others, or they may even be defined as the ‘problem’. This can be due to their use of farming and land use practices that are perceived by some as detrimental to the interests of other stakeholders. Weak farmer organisations and inadequate access to information also limit their ability to engage equitably in decision-making processes. This is particularly common in landscape initiatives led and funded by state or national government agencies, national or international NGOs, regional programmes such as transboundary conservation or watershed projects, or the private sector. Resolving the large power imbalances between different stakeholders remains a major challenge, and politically marginalised groups including women struggle to have their voices heard.

But some examples of integrated landscape management have been driven and largely managed by family farmers or by farming, pastoral and forest communities, such as those seen in the pages of this magazine. Many groups that first organised to protect or restore land and forest rights have evolved to address collective challenges of land and resource management. Networks are emerging, such as International Landcare that support dozens of locally-organised landscape initiatives in Asia and Africa, and the international Model Forest Network that supports long term multi-stakeholder initiatives in 58 landscapes in the Americas, Africa, Asia and Europe. Together, these all suggest that producer movements have a pivotal role to play in developing, scaling up and managing increased farm production, ecosystem benefits, and in implementing multi-stakeholder planning.

**Growing interest** As experience in integrated land management grew sharply in the last ten years, so did policy interest in the approach. Those involved in agriculture, environment and rural development lost confidence in the efficacy of fragmented sectoral strategies to deliver sustainable...
outcomes. Scientific evidence and practical experience showed that the challenges of climate change and food security required action in agriculture beyond improved seed and more fertilizers and beyond the farm scale. Biodiversity experts began to recognise the importance of cultivated and grazing land in the conservation of wild species. And it became increasingly clear that improving the well-being of family farmers would enhance their capacity for land stewardship and landscape resilience.

Although this approach is by no means dominant, it has at least become ‘respectable’. Mainstream institutions like the World Bank, CGIAR and NEPAD now have landscape programmes. Many countries have set up national initiatives or policies to support or invest in integrated landscape management, from Australia and Indonesia to Burkina Faso and Zambia. Some multinational companies are collaborating in integrated landscape initiatives to manage their reputation and sourcing risks, and impact investors are now setting up landscape investment funds.

This increasing interest and investment in landscape approaches can be of great value for family farmers. They can support more sustainable agroecosystems, create new partnerships, new market opportunities, and incorporate the conservation of cultural values. Multi-stakeholder landscape initiatives can provide a platform for dialogue and advocacy around land and resource rights and alternative agricultural investment strategies in the face of fast-paced agro-industrial development. But the quality of landscape governance is highly variable, and there are many potential threats and challenges for family farmers involved in such initiatives. Many have decision-making processes that marginalise family farmers and their role in reaching agricultural production objectives is not adequately acknowledged. Proposed interventions for environmental objectives are not co-designed with the farmers who are best placed to look after the landscape.

Empowering family farmers

So how can family farmers and their organisations position themselves during the next decade to realise the benefits from more integrated landscape management and investment? Firstly, farmers need to ‘step up to the plate’ in taking up leadership roles in these initiatives, and find ways to collaborate more effectively. They must bring the smallholder agriculture agenda more centrally into what has until recently been a more conservation-led approach. And farmer organisations should ensure representation of the interests and needs of all, including marginal farmers, during the negotiations that follow. The outcomes depend upon how organisations frame their own values and goals in including farm and landscape stewardship, how they fight for the political space to engage meaningfully in multi-stakeholder processes, and how they proactively explore partnerships with other interest groups in their own landscapes.

The contributors to the 2014 African Landscape Action Plan in Nairobi defined several priority actions specifically related to family farmers and their communities. They encouraged policies that would recognise traditional land management systems, better link grassroots land managers and national policies, and improve the level and quality of community involvement in policy decisions and public accountability. They also argued for more explicit methods to address the imbalanced power relations in landscape governance. They recommended greater use of market mechanisms that benefit small and medium sized enterprises, and to provide investment in appropriate microfinance initiatives. They supported further strengthening in the capacity of farmers and their communities to plan and implement integrated landscape strategies, as well as greater youth engagement.

What should we work towards in the next ten years?

Local interests in land and resource planning can be strengthened by building engagement with family farmers into integrated landscape initiatives from the outset. Farmer federations, cooperatives and other organisations must become key players in these initiatives, and proactively develop strategies and capacities to do so. Where such multi-stakeholder platforms for landscape management do not yet exist, family farmer organisations should take the lead, developing their own capacities, engaging with new partners, committing to working collaboratively for land stewardship, and ensuring that they are not marginalised from future efforts. May the stories in this issue provide inspiration.

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Productive landscapes within functional ecosystems are critical in being able to feed the human population, and will become even more valuable as the human population continues to rise. The assumption is often made that industrial agriculture is the only effective and efficient way to provide sufficient food in the modern world and the world of the future. There is, however, much less publicity surrounding the fact that large-scale industrial agriculture often degrades the environment, and that functional ecosystems are far more productive than dysfunctional ones.

Farmers are not just growing crops that feed people and animals. Farmers are also sequestering carbon in the biomass and necromass, helping to filter water and keep it in the soil to reduce flooding, and increasing or at least maintaining biodiversity. Or they are having the reverse effect. They influence the regulation of the weather and the climate by maintaining functional ecosystems, or they disrupt it by degrading ecosystems and increasing greenhouse gas emissions.

While the trend in mainstream agriculture has been towards more mechanisation and fewer farmers, we simultaneously see hugely increasing rural unemployment leaving so many people in our countrysides without anything meaningful to do. We badly need to look at how social organisation is changing the fundamental values of our societies and how we are creating degraded landscapes that reflect the state of our consciousness. If we value food that tastes good, contains few or no chemicals, is produced in ways that are not polluting, respects the rights of farm workers and treat animals ethically, sequesters carbon and regulates the climate, we can employ many more millions of people while simultaneously restoring ecological functions on a planetary scale, and help to ensure a more peaceful world.

This summer in South Africa’s Eastern Cape, I led a team that documented efforts that are engaging more people in agriculture and that simultaneously improve ecological functions in the area. Similar initiatives are happening around the world. The result is these local people who engage in agriculture are experiencing great satisfaction, making their families and communities more sustainable and resilient and this is what the world needs more of, in order to better mitigate and adapt to climate change.

We need to realise that farmers are on the front line of climate change, and that society depends on them to sequester carbon by massively increasing organic matter in the soils. But society cannot depend on something that it is unwilling to pay for. We need more farmers, not less, and they will have to be paid for more than simply the food that they produce.
Members of the AgriCultures Network are working together to advance family farming and agroecology by drawing lessons from farmers’ fields, sharing knowledge, and working with social movements for policy change. Read our latest news.

**A new global agenda for research on family farming**

As part of the International Year of Family Farming, research institutions in Montpellier, France held a major conference on family farming and related research in June. AgriCultures Network representatives from AS-PTA (Brazil), AME Foundation (India) and ILEIA (the Netherlands) participated. More than 200 participants from 70 countries attended, including farmers, development workers, decision makers and researchers. Together, they flagged the need for agricultural research to take ‘a systems approach’. If you change one part of the family farming system (such as by introducing a genetically modified crop), you may affect another part (like disturbing cultural habits related to crop cycles). It also highlighted the fact that many climate smart strategies are actually being developed by farmers, and which could be better integrated into research agendas. Finally, there was a call for more comparative research into the role of family farmers in global versus local food systems, and the effects of both systems on food security. Participants called upon scientific and political communities to address two structural problems. The first is that a large part of agricultural research is funded by the private sector with little interest in family farmers. The secondly is the power dimension, i.e. the rich knowledge held by family farmers is often considered of less value than formal science.

For all presentations and videos, see: http://l.agropolis.fr/encounters-montpellier

**Demanding appropriate policies for family farming in Brazil**

When the Brazilian government discussed family farming in July 2014, civil society made itself heard. While acknowledging progress in public policy, a number of critical and outstanding issues were brought to the table. The most important were the marginalisation of women and indigenous peoples in public policy, access to land and other resources, as well as the continued threat posed by agribusiness. Paulo Petersen, director of AS-PTA and vice president of the Brazilian Association of Agroecology, told the assembly that family farming carries qualities that under the right circumstances have the potential to substantially benefit society and
Farm internships in the Netherlands

This year as in 2013, ILEIA is supporting the Farm Experience Internship. More than 20 international students spent several weeks on organic farms in the Netherlands, living and working with the farmers and learning about their day-to-day and long term realities. A series of presentations and workshops ensured a solid preparation beforehand and thorough reflection afterwards. Students admitted to being very tired after long days harvesting vegetables, pruning trees and carrying boxes. But they said all the pain was more than compensated by the gain, from getting a greater understanding of the many strategic and tactical decisions farmers have to make every day, and from new knowledge about the ships between plants and insects. They also expressed much satisfaction about eating the food they had just picked from the land. Following a Brazilian example, the internship brings together farming practice and student theory, and strengthens the connections between farmers, universities and NGOs. It also facilitates the development of bottom-up research, and introduces interdisciplinary and participatory approaches alongside principles of agroecology. Read more at www.agriculturesnetwork.org/news.

Photo competition

On 15 September, public voting closed in the International Year of Family Farming photo competition. From more than 1300 entries, a prestigious jury of farmer leaders, artists and activists is now selecting the photos that are considered to most beautifully represent family farmers, pastoralists, indigenous peoples and fisherfolk in action around the world. The winners will be announced at the end of October in Rome by a representative of the Asian Farmers Association during the Global Dialogue on Family Farming. Winning photos will also feature in a 2015 calendar. The photo competition is organised by the AgriCultures Network and the World Rural Forum, in close collaboration with the Asian Farmers Association, CLOC- La Via Campesina and the More and Better Network. Have a look at 100 shortlisted photos at http://extra.agriculturesnetwork.org/photocompetition.
“If there were no forest, there would be no water source; if there were no water, there would be no paddy fields, and as a result, there would be no fish or rice we could live on.”

Dai minority saying, Yunnan, China, page 36

“...THE LANDSCAPE IS A KEY ELEMENT OF INDIVIDUAL AND SOCIAL WELL-BEING AND THAT ITS PROTECTION, MANAGEMENT AND PLANNING ENTAIL RIGHTS AND RESPONSIBILITIES FOR EVERYONE.”

Preamble to the European Landscape Convention, the first and only international treaty to be exclusively devoted to all aspects of landscapes.

“LANDSCAPES ARE LIFEBOATS FOR SUSTAINABILITY THAT WILL CARRY US INTO THE FUTURE”

Jeff Campbell, interview, page 15

“Farmer federations, cooperatives and other organisations must become key players in landscape initiatives.”

Sara J. Scherr, page 40

www.farmingmatters.org