

Small-scale agriculture for a sustainable society March 2010

FARMING MATTERS

Formerly known as LEISA Magazine

The benefits of livestock

Going for more animals

■ Olivier De Schutter on food and rights
■ Local vs exotic poultry ■ Policies for pastoralism

People-friendly agriculture



The many reactions we received in response to our renewed magazine make one thing clear: family farming is very much alive. The conference on the future of family farming hosted by ileia last December 2009, in celebration of our 25th birthday, also affirmed this. Together with professionals from science, government, business, NGOs and partners from the South we explored how family farming can contribute to solving global issues like climate change and food security. Across the world, recognition is gaining ground that properly managed small-scale farming is low carbon agriculture. It is more efficient, more people-friendly and less polluting than large-scale industrial agriculture. Camilla Toulmin, director of IIED and one of the speakers, challenged the audience: “The market place for ideas is wide open”. On our website, www.ileia.org, you can find a full report of the conference.

Even though the outcome of the Copenhagen conference has not been encouraging, let us not forget that there are real opportunities to influence the way in which climate change policy is being shaped. But the mindsets of policymakers must change if possibility is to become a reality. ileia supports the campaign for an international year of family farming; we think this is a timely and important initiative to create a greater global awareness of the importance of family farming (see www.familyfarmingcampaign.net).

This issue of Farming Matters is about livestock. Lucy Maarse, our guest editor for this issue, makes a convincing argument in the theme overview (page 7) that an integrated perspective is crucial to overcome simplistic assumptions about the opportunities and threats that livestock present to family farmers. Strengthening ecologically and economically sound and socially just livestock systems is possible; it starts with understanding the multiple functions of livestock in rural livelihoods.

Renew your subscription! Those of you who have been receiving the magazine for more than two years, will find a renewal form enclosed with the magazine. Do send it back. Only if you return it, will you continue to receive the magazine. We want to make Farming Matters available to as many interested readers as possible and ensure that it reaches those who are actually reading it.


Keep sending us your comments and suggestions, and thank you for reading Farming Matters!

Edith van Walsum, director ileia



ileia

Centre for learning on sustainable agriculture



Uncertain times in Egypt

The woman and daughter in this photo live in Fayoum governorate in Egypt. This is one of the most densely populated countries in Africa, which is why many people keep their poultry on the roofs of their houses.

This woman used to earn a considerable share of the total household income by selling live birds and eggs. But since February 2006, when Egypt experienced one of the worst outbreaks of avian influenza outside Asia, things have changed. In an effort to limit the spread of HPAI and the risk of human infection, 30 million birds have been culled.

This has had a strong negative impact on the livelihoods of the poorest rural households, particularly female-headed households. Money made by selling eggs and meat used to pay for such things as food and other household necessities, in addition to medical treatment and school fees. Many families do not have the capital

to start again, in fact, they are still paying off the debt they incurred when first buying their birds on credit.

Together with the rising food prices of 2008, avian flu has caused a change in the diet of many poor people. Animal protein has been exchanged for lentils and beans.

Up till now, Egypt continues to experience outbreaks of HPAI. It is now considered one of the few countries, together with countries like Bangladesh, China and Indonesia, where the disease is endemic.

Text and photo: Ellen Geerlings, the Netherlands. Ellen Geerlings (ellengeerlings@hotmail.com) is part of the Livestock Development Group at the University of Reading. She has combined her work with her passion for photography, resulting in a publication called "People and livestock". Some of the photos in this issue are from this publication. For more photos, see www.blurb.com/bookstore/detail/797190.



14

Food as a universal right

Olivier De Schutter is special rapporteur on the right to food for the United Nations. In this function he meets many high officials and policymakers to talk about small farmers: "I try to make them sensitive and accountable for farmers' needs. But farmers can get themselves heard too, by organising."



19

Livestock services to family farmers: free or fee?

Livestock services are crucial for a healthy, resilient stock of animals. Small-scale family farmers need these services too, but how do they profit best and how can service delivery become most sustainable? Should it be "public good", financed and organized by the state, or can private corporations do a better job? Two views...



22

Unpacking a poultry myth

"Improved" poultry breeds do not always improve farmers' conditions. Indigenous breeds are often much better adapted to climate, need less input and are in general better appreciated for taste and ceremonial functions. Plus, they can significantly boost the income of rural communities. A case from India.



28

Re-assessing the fodder problem

Small-scale farmers depend largely on their animals and need to feed them well. Technology based innovations have been the mainstream solution to improve the fodder problem. But making farmers find relevant information and networks appears to be as much effective for innovation.

A LOT TO GAIN: THE BENEFITS OF ANIMALS

AND MORE

- 2 Editorial
- 3 The Future of Family Farming
- 6 Our readers write
- 7 Theme overview: Livestock,
a smart solution for food and farming
- 13 Opinion: Anil Gupta
- 25 Opinion: Joachim Otte
- 26 Mind! New in print
- 32 Pastoralism: Shifts in policy-making
- 35 Educators' page
- 36 Crops and animals in Tajikistan: Back on track
- 38 Locally rooted:
Ideas and initiatives from the field
- 40 Call for contributions
- 41 Update from the field
- 42 Globally connected:
News from the AgriCultures Network

FARMING MATTERS informs readers about sustainable, small-scale farming. It offers discussions, background to the news, opinions, research findings, and practical examples of how sustainable, small-scale farming contributes to providing food security, social justice, a healthy environment and development. Farming Matters is for policy makers, researchers, practitioners, educators, farmers, and everybody else interested in agriculture and development. Farming Matters is published four times a year and has subscribers in more than 150 countries. It is the global edition of the worldwide AgriCultures Network, a network of eight organisations, of which the other seven members publish regional editions, in six languages. Together, the magazines reach more than 50,000 subscribers. For more information, see www.agriculturesnetwork.org.



Mixed Sources
Product group from well-managed
forests and other controlled sources
www.fsc.org Cert no. SGS-COC-006309
© 1996 Forest Stewardship Council

OUR READERS WRITE



In our previous issue, we published a photo with the article on SRI that showed exactly the opposite of what SRI stands for: rice fields should be kept moist but not flooded. This photo better captures this principle. Thanks to the observant reader who pointed this out to us. Do you also have comments, ideas, suggestions? Send an e-mail to ileia@ileia.org or write to P.O. Box 2067, 3800 CB, Amersfoort, the Netherlands.

Two views: The future of family farming

One of the questions raised in the previous debate was whether family farming can compete with large-scale industrial agriculture. However, the choice is not *either-or*, but rather: how much of each, and how can the two function in complementary ways that compensate for each other's limitations? The industrial, large-scale farming system advocated by Rudy Rabbinge meets the needs of the commercial sector more than the needs of the world's poor. The seed and agricultural chemical producers and food processing industries operate in a close coalition with governments and with major research institutions. Company profits take precedence over consumer and environmental issues.

Against that background, the arguments supporting large-scale industrialised agriculture as the template for the future, should be considered with a degree of scepticism. The rhetoric on the issues of poverty alleviation, global food security, and environmental sustainability used by major institutions are attempts to satisfy a poorly-informed general public that these challenges can be met effectively through what is called "modern" agriculture. While it has served the world reasonably well for the past half century, "more of the same" is no longer justifiable. Some pluralisation, rather than homogenisation, of the agricultural sector is urgently needed. Therefore the role of Farming Matters in voicing the

many viable, environment-friendly, agro-ecological alternatives should be warmly applauded.

[Willem Stoop](#), agronomist, the Netherlands. (for the full letter, see the open forum on www.ileia.org)

Farmers' facts vs "proven" statistics

The article on SRI in the previous issue of Farming Matters raises the question whether scientists should consider farmer results from the field or only their own data to assess the potential of new farming techniques. In the article, Harro Maat commented that scientists discounted the high SRI yields reported by NGOs and others because there was no information on the measurement methods used. There are, however, many examples available of measurements according to scientific protocol. Half a dozen theses were done by Madagascar students for degrees from the Faculty of Agriculture (ESSA) at the University of Antananarivo in the early 1980s. Their measurements were done meticulously according to scientific protocols, with multiple replications, random block design, etc. That the theses were written in French is no excuse for IRRI and other scientists to not have followed up such reports, which were available upon request.

In Aceh, Indonesia, the NGO Caritas recently reported that farmers working with SRI methods introduced after the tsunami there, are averaging 8.5 tons per hectare compared to their previous average yield of 2 tons per hectare (*Caritas News*, Spring 2009). Also, SRI's

merits are being confirmed and reported on more and more, among others in peer-reviewed scientific literature, such as the journal *Experimental Agriculture*.

It is incumbent on NGOs and others to report results as systematically and precisely as possible; but it should be similarly expected of scientists that they will take an open-minded interest in innovations that could be beneficial for farmers, especially resource-limited ones, rather than find reasons to dismiss reports without field testing and persist in working along their preconceived tracks.

[Norman Uphoff](#), emeritus professor, Cornell University, U.S.A.

Measuring success

I enjoyed reading your article "Building on success". I agree with the premise of it, that we need to "support and manage the endless process of knowledge generation, facilitation and networking involved in what is essentially a spontaneous activity of socio-technical change." Recently our organisation has been striving to monitor and evaluate the success of our projects. We are still working to identify ways of measuring our impact in communities and on individuals. How to measure ones success in meeting ones goals when it comes to the generation and exchange of information? I would greatly appreciate any insight.

[Jeff Follett](mailto:jeff@trees4future.org) (jeff@trees4future.org), South America Program Officer, Trees for the Future, Australia.

For more letters, see www.ileia.org



Livestock

a smart solution
for food and farming



Animals are a part of farming systems everywhere. In this issue, Farming Matters focuses on how small-scale farmers manage their animals, how they link animal husbandry with other activities, and what their livestock means to them. An integrated perspective on the role of farm animals is crucial in overcoming simplistic assumptions on the opportunities and threats that livestock presents to family farmers.

Text Lucy Maarse

Livestock plays an important role in the livelihoods of many farmers and herders in the South, as it contributes to the basics of food, income, and security, as well as other social and cultural functions. Actually, the world's poorest people – nearly one billion – depend on pigs, yaks, cattle, sheep, lamas, goats, chickens, camels, buffalos and other domestic animals. For undernourished people, selling one egg may imply being able to buy some rice, and thus, instead of having one meal per day, a second one becomes reality. This is a typical survival strategy: selling high-quality foods to buy low-cost starchy food. In other parts of the world, we see an over-consumption of red meat and other animal-based food, which damages the health of many people: it is a shocking dichotomy.

Animals and greenhouse gases

According to the FAO study, *Livestock's long shadow: Environmental issues and options*, published in 2006, livestock contributes to 18 percent of the total global greenhouse gas emissions generated by human activity. Most of these emissions come from countries using industrial farming practices, in the form of methane produced by the belching and flatulence of animals, carbon dioxide by felling and burning trees for ranching, and nitrous oxide by spreading manure and slurry over the land. It is therefore a problem predominantly caused by Western consumption patterns, as has been discussed and studied by many researchers and authors (for example, Jonathan Safran Foer in *Eating animals*). For some people, it is a reason to promote a vegetarian lifestyle, as a protest against animal exploitation.

Meet Miss Buffalo

The models were hefty, horned, heavily made-up and hooved: everything you would expect from contestants at a beauty contest for water buffalo in India. About 125 buffalos, decorated with colourful cloths and ornaments, took part in the event and plodded down a makeshift stage as the crowds cheered. "The objective of the show was to teach villagers to take care of the poor animals," said

Prabhat Ranjan, organiser of the event: "Buffalos are underfed and as a result, their milk production is decreasing." In rural Bihar, most villagers depend on selling buffalo milk to earn their living and they could improve the milk production by giving their animals proper feeding and disease prevention. Source: The Economic Times, 28 Oct. 2009.



More than food and income, livestock also has a cultural function. Photo: Ellen Geerlings

There are, however, great differences in livestock production systems in various regions of the world. These systems emit very different amounts and types of greenhouse gases, and serve different purposes. Considering that all of Africa's ruminants together account for 3 percent of the global methane emissions from livestock, their contribution is minor. But as Carlos Seré, director of the International Livestock Research Institute (ILRI), rightly points out, ruminants maintained on poor quality feeds (see Meet Miss Buffalo) make an inefficient conversion of feed to milk and meat, and are more environmentally damaging. Skinny ruminants on poor diets, while not competing with people for grain, produce much more methane per unit of livestock product than well-fed cattle, sheep and goats.

Yet many African livestock systems seem to be the best way to deal with climate change because these systems can be carbon-negative. According to Mario Herrera and Shirley Tarawali from ILRI, a typical 250 kilogram African cow produces approximately 800 kilogram CO₂ equivalents per year, whilst carbon sequestration rates (the amount of carbon taken up in the soil) can be about 1400 kilograms of carbon per hectare per year under modest stocking rates, making a positive balance. The same goes for stall-feeding

dairy systems, which emit less CO₂ due to higher quality diets and better recycling of products within the system.

Livestock revolution revisited

The notion of a “Livestock Revolution” was introduced in an influential IFPRI publication in 1999. It initially simply stood for the unprecedented growth in demand for food of animal origin in developing countries, because of population growth, urbanisation and increasing income (and subsequent changes in diets and life style). The idea that the Livestock Revolution would be driven by demand, contrary to the Green Revolution which was supply-driven, strongly influenced the thinking in the sector. The growth in demand could imply enormous opportunities for the poor, who could catch a substantial share of the growing livestock market. But just 10 years later, Ugo Pica-Ciamarra and Joachim Otte show in *The livestock revolution: Rhetoric and reality*, that this growth has been especially huge in China, India and Brazil in the poultry, pork and dairy sectors. In sub-Saharan Africa and developed regions, the growth has been decreasing or stagnant. The geographical impact is patchy even within the nations and the impact is largest on poor urban consumers. The paper also observes that an increasing polarisation has occurred in the livestock sector.

Local developments The World Bank has acknowledged the notion of a Livestock Revolution from the beginning, seeing opportunities for poor small-scale farmers in developing countries. Jimmy Smith, from the Agriculture and Rural Development department of the World Bank, admits that growth in the demand for animal products has not been uniform: “Income growth has happened fastest in China, and therefore, growth in demand for livestock products happened fastest there. South East Asia also recorded impressive growth in demand for milk, poultry meat and eggs.” For Smith it does not mean that the Livestock Revolution did not happen: “Despite regional differences, changes have been so large that it has influenced global trade, and raised issues about livestock and climate even in the developing world. As small holders are often not connected to markets, they have not been able to benefit as we would have expected.” For Smith, policy makers need to be more active to allow them to benefit: “It’s mostly very large scale producers that have benefited from the Livestock Revolution. Public

“It’s mostly the very large-scale producers that have benefited from the Livestock Revolution”



More milk, improved diets, higher incomes. Photo: Ellen Geerlings

spending has been very low. Veterinary services have deteriorated. And there have been little investments in linking small holders to markets, perhaps with the exception of India, and on making livestock systems more environmentally sustainable.” There are more examples indicating that the livestock sector is influenced by other factors, such as food price policies, availability of animal feed and investment facilities for commercial farming. The idea of a livestock sector that grows as a result of increased demand for meat is therefore misleading. It prevents governments from intervening and identifying the real potentials that could stimulate a growth in the livestock sector that would be beneficial to poverty reduction and rural development at large. The debate on page 19 focuses on this aspect.

Mixed farming In Eastern Africa, one third of the rural population lives in areas where livestock predominate over crops as a source of income. Nearly 40 percent of all livestock are kept in mixed farming areas, where they contribute to rural livelihoods in diverse ways. Various classifications are used to define livestock production systems. From a family farming perspective, livelihood criteria known as “the

relative dependency on livestock at the household level”, including the customary use of the terms “pastoral”, “agro-pastoral”, and “mixed farming”, place the livestock into perspective with all the activities and resources through which households fulfil their needs. An agro-pastoral system would be one in which livestock account for between 50 and 80 percent of the total income, whereas a pastoral system would have livestock accounting for over 80 percent. We must be wary of making generalised statements about the links between livestock, consumption of meat, greenhouse gas emissions, climate change, food safety, poverty and animal welfare issues. The context, functions of livestock and trade-offs of animal husbandry are very different all over the world. The crux of the matter is to reach a situation in which family farming and herding in the South meet future demands for animal products without environmental damage. Strengthening and/or developing ecological, cultural and socially-sound livestock systems is possible, but it starts with understanding the different functions of livestock in rural livelihoods.

More than meat and milk Farmers keep animals for direct consumption of food and

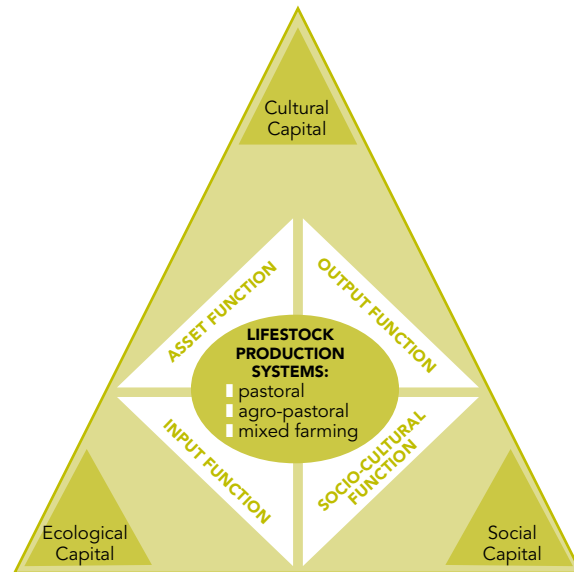
“The crux of the matter is to meet future demands for animal products without environmental damage”

non-food products such as milk, meat, wool, hair and eggs, but also manure for fuel, and urine for medicine (**output function**). Some of these products provide input for other activities: manure, urine and grazing fallow land are beneficial for crop production; stubble fields help pastoralists feed their animals; animals give drought power for transport, and their hair, hoofs and manure help to disperse seeds and improve seed germination; their grazing prevents bushfires and controls shrub growth, and stimulates grass tillering and breaking-up hard soil crusts (**input function**). But animals also permit farmers to raise money in times of need (**asset function**). This often represents the priority function of livestock among poor farmers, and is the reason that animals are not necessarily sold when the market price is attractive but when there is a need for cash. Livestock are also part of the household. They are indicators of social status: festivals and fairs are based on livestock (bullock cart racing, cock fighting, cow beauty contests) and many songs have been written about livestock (**socio-cultural function**).

Van der Ploeg (2009) brings in the dimension of capital when analysing farming systems in his book *New peasantries*. There is the conversion of living nature (ecological capital) into food, drinks and a broad range of raw products. But controlling the complex organisation and development of farming, needs communities to network, co-operate, self-regulate, solve conflicts, and engage in learning processes (social capital). Finally, farming and herding stand for a certain culture and way of life (cultural capital), which are even more clearly articulated in these modern times, with anonymous global markets. Farming culture stands for origin, quality, authenticity and freshness of products, and of associated ways of producing, processing and marketing (fairness and sustainability). The analyses of Rangnekhar (2006) and Van der Ploeg (2009) can be combined in the diagram at the top of this page. The World Bank has already tried to adopt a more inclusive approach to livestock. Smith points out that livestock is mostly used for input into crops: "Some reports say that up to 50 percent of nitrogen use for crops comes from manure, which means that livestock is incredibly important. Livestock has many uses and functions, which have not received enough attention. Public investments are needed, in order to sustainably develop the livestock sector and escape poverty."

Climate smart development

A recent study by Delgado (2008) on the scaling-up of the production of some specific livestock products among small-scale producers in Brazil, India, the Philippines and Thailand, has focused on



Livestock Production Systems: their functions and relationships to capital

Clean pigs

The rather panicky reaction to the swine flu in Egypt last year shows how important it is to keep looking at the different functions and dimensions of livestock. The Egyptian government announced a ban on pig rearing in Egypt, which has led to streets being littered with rotting food piles. What started out as an impulsive response to the swine flu threat, turned into a social, environmental and political problem for the most populous nation in the Arab world. For more than half a century, the waste collectors in Cairo were the Zabaleen, a community of Egyptian Christians who live on the cliffs on the eastern edge of the city. They collected the trash, sold whatever recyclables they found and fed the organic waste to their pigs, which they kept for consumption. Cairo's garbage collection therefore belonged to the informal sector. The government has now hired multinational companies to collect the trash, which have decided to place bins around the city. They failed to understand the ethos of the community, as people do not take their garbage out. Rather, they are accustomed to having someone collect it at the door. The result is that the streets are now littered and a large community is without work and income. Pigs are not just pigs, but form an important aspect in the livelihood strategies of distinct communities, and even contribute to the well-being of more affluent groups in society.

the impact of increasing the average farm size and annual livestock sales. There are some interesting conclusions regarding family farming that can be noted. Independent small farms in India and the Philippines typically have higher profits per unit than do independent large farms. Small farms with pigs and poultry also have a lower negative impact on the environment than large farms. Hence, environmental concerns are compatible with promoting small-scale livestock production. Climate-smart farming is the future, as Camilla Toulmin, director of the International Institute for Environment and Development (IIED) stated at the ILEIA conference on the Future of Family Farming in The Hague in December 2009.

In this issue of Farming Matters, you will find a number of good practices and research findings that are in line with the thoughts expressed in this theme overview. They show alternative pathways to the rather linear value-chain approach, which tends to focus on the output function while giving little attention to other functions, nor having much consideration for the social, ecological and cultural capital that livestock offer. The competitiveness of smallholders is largely determined by low-cost family labour, but in order to improve the situation for farmers, some farm-specific barriers, such as credit



Attention for environmental concerns go hand in hand with better livelihoods. Photo: Heifer NL

and market information, should be addressed. Farmers also need quality animal and human health services (see box Zoonoses), as well as extension services and other pro-poor livestock interventions. Only then will climate-smart rural development pay off for small-scale farmers. ■

Lucy Maarse (lucy.maarse@gmail.com) is an independent advisor (Livestock & Livelihood) specialised in tropical animal production and extension, currently working from the Netherlands.

Neglected zoonoses

Zoonotic diseases are transmitted from vertebrate animals to people and thus can compromise people's health and endanger their livelihoods. Many of these diseases are prevalent in the developing world and affect the poorest segments of the human population. Neglected zoonoses, such as anthrax, rabies, brucellosis, bovine tuberculosis, zoonotic trypanosomiasis, echinococcosis, cysticercosis and leishmaniasis, are major causes of ill health in people in Africa, Asia and Latin America. The burden of these diseases on affected communities is compounded by the adverse effects on the productivity of livestock and hence on the livelihoods of the poor. Only recently have Western companies and research institutes taken more interest in these diseases. Previously, money and time has mostly been devoted to animal diseases affecting industrial livestock production, such as swine flu and Q fever. It is important to understand that one can jointly approach human and animal health.

For more information visit: www.galvmed.org or www.iconzafrica.org.

References

- Delgado, C., 2008. *Determinants and implications of the growing scale of livestock farms in four fast-growing developing countries*. Research report 157, IFPRI, Washington, DC, U.S.A.
- Delgado C., M. Rosegrant, H. Steinfeld, S. Ehui and C. Courboi, 1999. *Livestock to 2020, the next food revolution: Food, agriculture and the environment*. Discussion Paper 28, IFPRI, Washington, DC, U.S.A.
- Van der Ploeg, J.D., 2009. *The new peasantries: Struggles for autonomy and sustainability in an era of empire and globalization*. Earthscan, London, U.K.
- Pica-Ciamarra, U. and J. Otte, 2009. *The livestock revolution: Rhetoric and reality*. Research report 09-05, Pro-Poor Livestock Policy Initiative, FAO, Rome, Italy.
- Rangnekar D., 2006. *Livestock in the livelihoods of the underprivileged communities in India: A review*. ILRI, Nairobi, Kenya.
- Steinfeld, H., P. Gerber, T. Wassenaar, V. Castel, M. Rosales and C. de Haan, 2006. *Livestock's long shadow: Environmental issues and options*. Animal Production and Health Division, FAO, Rome, Italy.
- Sere, C., 2009. *It's time for climate negotiators to put meat on the bones of the next climate agreement*. Blog posted at ILRI's website, available at www.ilri.org/ilrinews/index.php/archives/1006/comment-page-1#comment-50.

It is not surprising that the global community of climate change experts sometimes seems to put much greater confidence in unconfirmed hypotheses of colleague experts than in grounded knowledge from local communities living on the edge in marginal environments...

Recent controversy surrounding the IPCC report has brought out this bias among scientists once again. They should have noticed the ringed seals surfacing briefly with heads upwards: that means upcoming storms! Traditional Inupiaq hunters from Alaska have survived for ages because of such indicators. In Africa, when the malaria-carrying mosquito can survive at higher latitudes, local communities are caught unawares. In the absence of immunity they may fall victim to malaria more often. They have to search for new ways of treating the disease. Their laboratory of life is filled with new ideas, experiments and explorations, knowing that the cost of failure is very high.

The behaviour of birds, snakes, animals, insects and plants teaches us a lot. It can continue to do so provided we build a database of all such insights, collected through a worldwide grassroots campaign to report and distill societal wisdom. For example, Fan Sheng-Chih's Chinese Encyclopedia was written in the first century BC and it reports that melted snow improves retention of moisture in soil and kills insects. Treatment of seeds with melted snow gives drought tolerance to plants and yields better.

Should we not urgently take up research on the quality of water of different glaciers and their potential in enabling local communities to deal with increased vulnerability to such problems? We must recognise that the future leaders of the fight against climate change will be the unsung heroes currently surviving in flood-prone villages and communities in the Arctic region, in deserts and on the coasts. They are the ones who still have insights about coping with long and short-term changes in climate. They have in-depth knowledge about local survival and support systems. But where is the sense of urgency to learn from centenarians around the world? Let us be humble and resolve to sit at the feet of such old people and their local communities. We should try to understand which knowledge from their cultural and institutional memory is of current relevance and which is not. That itself will convince us about the reality of climate change, even if scientists continue to falter.

Professor Anil Gupta teaches innovation management at the Indian Institute of Management in Ahmedabad. He is the founder of the Honey Bee Network (www.sristi.org), which collects and disseminates traditional knowledge and helps facilitate grassroots innovation.



Unsung heroes

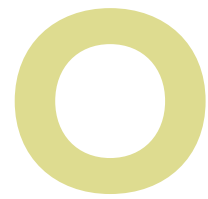


FOOD

is a universal right

Olivier De Schutter is the United Nations special rapporteur on the right to food. He aims to inform people at the highest political levels about the role that smallholders play in the world's food production systems. He hopes that this will make decision-makers more sensitive to their needs and rights.

Interview Mireille Vermeulen. Photo Folkert Rinkema



livier De Schutter's efforts to promote the full realisation of the right to food and the implementation of national food security measures, may have contributed to the fact that agriculture is back on the political agenda after some 30 years of neglect.

Politicians and policy-makers now frequently discuss the crucial role of agriculture in development. What will be the future of agriculture? There are contrasting views about precisely what needs to be done, and the question is complex because many policy-makers seem to think that today, there is a trade-off between the various objectives that any agricultural policy must combine: improving levels of production and raising the revenues of small producers, while respecting the environment. There is also a clear schizophrenia within governments: while more market liberalisation is sometimes seen as a solution to encourage production, many realize on the other hand that this squeezes out the smallest and least competitive production units, which is exactly not what we want to achieve, as this increases inequality and poverty, and therefore hunger. In this context, a serious ideological battle is being fought. The problem, as I see it, is that large agribusiness corporations exercise a disproportionate influence on governments, while small farmers are not involved in most processes.

Then what is the relevance of all your high-level meetings for the lives of small farmers in Africa and Asia? There is often a serious disconnection between the high-level officials I meet and the poor farmers, living in the most marginal areas. I see my role as trying to understand the needs of the most vulnerable, and ensuring that policy-makers are made sensitive to those needs and are more accountable. The right to food is about raising accountability. It's based on the idea that you cannot work for the poor without the poor.

But what is the impact of high-level declarations to global developments in agriculture? Will they really convince governments to implement better policies? There are important vested interests in the existing system, despite its failures: it has succeeded relatively well in raising production, but failed in addressing the root causes of hunger. Things can change, however. Two levers are important. First, through international meetings and the preparation of declarations, we can change the perception of

governments about what needs to be done, and gradually arrive at a common diagnosis. Second, through improving accountability at the domestic level, particularly by encouraging countries to set up national strategies by participatory means and to establish consultative bodies, we can increase pressure on governments, and ensure that their efforts will be appropriately targeted to the needs of the most vulnerable. These tools should not be underestimated. Together, they can lead to real change.

During the last world summit on food security in November 2009 in Rome, the UN have called for a reform of the Committee on Food Security (CFS). What real impact can this reformed committee have for small farmers in the world? It will be important to see how the Committee on World Food Security (CFS) will function, under its new composition and with its new role. During a second phase of its work, the CFS should adopt a global strategic framework – a plan of action at global level, identifying measures that governments and international agencies should take. It should set priorities and guide the work of development co-operation and investment in agriculture. This has the potential to improve the understanding of governments about what needs to be done to eradicate hunger and malnutrition, and of raising the accountability of all actors – donor governments, their partners in developing countries, and international agencies. It also has the potential to improve co-ordination across different international agencies. For it is bizarre, to say the least, that within the World Trade Organisation,



Olivier De Schutter. Photo: UN

countries are pressured to relax the measures that protect their agricultural sector in the face of foreign competition, while at the same time they are told to support smallholders and to diminish their dependency on international markets to feed their populations. The CFS should ensure that these inconsistencies do not persist. All governments and international agencies (both from within the UN system as well as outside it, such as the World Bank, IMF and WTO) and also civil society and the private sector will have to justify their choices in the face of a shared diagnosis of the priorities. This can be significant. But whether or not real change will result, will depend on whether they in fact agree to subject themselves to this collective evaluation. Will they act co-operatively? Or will they continue to prioritise their national interests and ideological agendas? This is the real test for the future.

What should small farmers do to get their voices heard? They must organise themselves! I am encouraged to see, for instance, how fast co-operatives of small farmers are developing. This means that small farmers improve their bargaining position and can improve their access to infrastructure or to public goods such as storage facilities, information about prices, or transport. It also means that they will find it easier to be heard at all levels, from the domestic to the international level. I am convinced that we would not have seen the mistakes of the past if small farmers' organisations had been better involved in decision-making. I refer for instance to marketing boards that bought crops from farmers at very low prices either for export or to ensure low-priced food for the urban populations. But also the insistence on export-led agriculture in general, which has increased inequalities between larger, better-off producers and small farmers living on the most marginal lands. Farmers' voices need to counterbalance the corporate sector in setting the agenda for agricultural and rural development.

Agriculture is affected by climate change, but also contributes to it. Livestock production has a big influence on the emission of greenhouse gases. Is this not a

dilemma in promoting farming? The increase in livestock production, in response to a growing demand for meat, tightens the competition for land between its various uses. Together, grazing land and cropland dedicated to the production of feed-crops and fodder already account for 70 percent of all agricultural land, or about 30 percent of the land surface of the planet. And in certain regions it is a major cause of deforestation or soil degradation, as a result of overgrazing. In a 2006 study called *Livestock's long shadow*, the FAO noted that if we take into account deforestation as a result of the creation of pastures and production of crops for feed, livestock is responsible for 18 percent of the total greenhouse gas emissions, almost double the share of transport.

Yet, at the same time, we must recognise that no two kilogrammes of meat are the same. Farm animals raised in industrialised countries consume more than five calories in feedstock for each calorie of meat or dairy food produced, and some estimates put that figure much higher, establishing a relationship of up to 17 units to one. But these figures represent the production of meat in rich countries, which is heavily industrialised, and it relates to animals fed on grains. In India, the ratio is a less than 1.5 to one. In Kenya, where animals are not fed grain but live off grass or agricultural by-products which humans cannot eat, livestock actually yield more calories than they consume. And it is equally important to acknowledge that livestock rearing represents a source of income for perhaps up to one billion people, representing one third of the poor in the rural areas.

In 2008, the IAASTD report on the world's agriculture was published. You often urge governments to take this report more seriously, but even the extensive summary is difficult to read. Can we expect governments to use this report as an input in their agricultural policies? The IAASTD is the result of a considerable amount of work, by some of the most renowned experts in the world. The obstacle its reception faces is that it calls for a paradigm shift in the way we conceive agricultural development and innovation, with a focus on the needs of the most vulnerable and on

“Large agribusiness corporations exercise a disproportionate influence on governments”

sustainable agriculture, away from the technological approaches of the past. We may need to break down the conclusions of IAASTD into parts, and treat separately those that relate to trade, those that relate to seeds and genetic resources, and those that relate to rural development, for example. Of course, all these issues are linked. But the task seems insuperable unless we cut it down in separate chunks.

China as a growing economy is becoming a more and more important player in the global political and economic system. China supports Africa with money and advisors. Their relationship with developing countries is very different from that of the EU or the UN. What does this mean for small farmers in Africa? China has to feed approximately 20 percent of the world's population with about seven percent of the world's arable land. Its population is still increasing, and its capacity to

employment. These risks cannot be underestimated, and it is therefore vital that investment in agriculture be carefully guided, and that local communities be involved in negotiations that are conducted with such investors.

Some people plead for a clearer dichotomy between big and small farmers in the West: on the one hand, industrialised farms competing on international markets and on the other hand, more ecological farmers, near to markets and consumers. Would that be a strategy for the whole world or should all efforts go to small farmers on a global level? This is still an open question, in my view. The coexistence of very large, agro-industrial farms, and small-scale, sustainable farming, is something a country such as Brazil is trying to achieve. At a minimum, it requires strong support of family farming by the state. Smaller farms, while very productive



If governments do not protect small farms, they won't be able to survive in increasingly competitive markets.

Photos: Folkert Rinkema, Willem van Weperen

expand agricultural acreage is limited. They are in fact facing a rapid loss of arable land and a large amount of soil erosion, and their access to water is precarious. The melting of the great glaciers of the Himalayas will make their position less and less tenable in the future. It should therefore come as no surprise if they seek to invest in agriculture abroad, particularly in sub-Saharan Africa where land is available and where labour is relatively inexpensive. For the local communities, the arrival of investors often means that their access to land, and therefore their livelihoods, will be affected. Some small farmers will be moved to more marginal, less fertile land. Others may be offered waged employment on the large-scale plantations that investors will develop. Others still will have no alternative but to migrate to the cities, with little prospect of decent

per hectare, are more labour intensive and thus produce at higher costs. Therefore they must be supported, or they will be wiped out in increasingly competitive markets. Governments can support family farms by providing loans at lower-than-market rates, by adequate public procurement policies, by supporting farmers' organisations, by providing access to credit and insurance against weather-related events or crop losses, and by supply management policies or buying policies to establish public stocks that can ensure stable revenues. I don't think we should place too many hopes on the attitudes of individual consumers. Although these attitudes are changing (consumers pay greater attention to where food comes from and how it was produced), price remains a determining factor for them. ■



**3RD CONFERENCE
ON SUSTAINABLE
AGRICULTURE
'THE ART OF FARMING'
11/12 MAY 2010
THE SQUARE
BRUSSELS**

T +31 (0)20 589 32 32
info@sustainable-ag.org
www.sustainable-ag.org

**FEEDING
THE WORLD,
CARING FOR THE EARTH**

2009-2010 CAMPAIGN
International Year
of Family
Farming



www.familyfarmingcampaign.net



IAALD XIIIth World Congress

organized by Agropolis International
26-29 April 2010, Montpellier, France

Scientific and Technical Information and Rural Development

Highlights of Innovative Practices

The 13th world congress of the International Association of Agricultural Information Specialists (IAALD) shares and discusses the ways in which scientific and technical information can help address issues of rural and agricultural development.

About 100 papers will be presented covering five themes:

- Innovative learning processes
- Targeted information products and services
- Communication and information exchange
- Integrated information systems
- Information as public policy enabler

**We expect around 250 participants,
coming from the most important rural
and agricultural organizations.**

Join us!

More information: <http://iaald2010.agropolis.fr> Contact: iaald2010@agropolis.fr.



Photo: Ellen Geerlings

free or free?

Livestock services to family farmers:

In the 1990s, when privatisation was the buzzword, many countries commercialised the provision of livestock services, such as vaccinations, advice and training. Has privatisation helped farmers? Or should governments remain responsible for livestock services in order to benefit society as a whole, and the poor in particular? Join the debate on www.ileia.org > debate > who ensures livestock services?



Private providers serve farmers best



Vinod Ahuja, Livestock Policy Officer, FAO Regional Office for Asia and the Pacific, India.

Economic theory argues that private markets serve people's individual needs best. For livestock services, this means that private providers are most efficient at delivering services such as artificial insemination and clinical veterinary care, ("private good" services). The government should manage areas such as surveillance of contagious diseases, food safety and overall policy development ("public good" services).

Some governments continue to provide clinical care, because they argue that poor farmers cannot pay for such services. Recent evidence suggests that the poor do not necessarily benefit from subsidised services. The studies have also found that poor people are even willing to pay for good clinical care or artificial insemination for their dairy cattle. The evidence seems to suggest that commercialised private practice reaches more farmers, more equally, and at lower cost. Yet, privatisation of veterinary services in different countries shows varying results, so is economic theory really a sufficient guide for policy reform? Why should private providers not deliver good quality services? Firstly, many services may

require high investments for private parties. Next, given the generally low education of poor livestock producers in developing countries, public veterinary authorities often make the point that private veterinarians are likely to resort to exploitative practices. Although this does not justify public provision of clinical veterinary services, it does illustrate the importance of strong institutions in regulating behaviour, enforcing ethics, disseminating information and providing an effective regulatory and legal framework.

In poor, marginal areas, the demand is too low to sustain profitable private services. Possible alternative models are the use of membership organisations, self-help groups, civil society organisations, para-professionals or community-based delivery systems. These tend to be far more responsive to local requirements than are

government services. Thus, the recommendation to governments to privatise livestock services is too simple. The situation differs from country to country: what are the available technology and skills, is there a vibrant private sector, how are corruption and transparency? In conclusion, there is a need for task sharing between the private and public sectors. A strong and accountable state can be responsible for policy development, pay for "public good" services, and regulate the delivery of "private good" services by the private sector. The debate on livestock service delivery is therefore embedded in the larger debate on institutional development and political economy, that are part of larger economic reform agendas. **This piece represents the personal view of the author and does not necessarily reflect the opinion of FAO. Vinod Ahuja can be reached at vinod.ahuja@fao.org.**

“Commercialised practice reaches more farmers at a lower cost”



Sagari R. Ramdas, co-director of ANTHRA, India, an organisation of women veterinary scientists.

Not private, but democratic Veterinary Health Services!

During the past two decades, global financial institutions such as the IMF and World Bank have imposed neo-liberal economic reforms upon developing countries, which has meant a uniform “development prescription” to privatise and dismantle vital public services (healthcare, education, sanitation, water, and energy), including animal services. The economists argue that health is a “private good” and that service demand is most effectively met by end-users purchasing their needs on the market. International institutions such as FAO and IFPRI advocate so-called “pro-poor” reforms for veterinary health care by creating private, self-supported community animal health workers. They are to deliver services on the doorstep at *cost-recovery rates* from farmers and charge *user fees* for veterinary services offered at government hospitals, while encouraging government veterinarians to become *private practitioners*. “Pro-poor” reforms place the responsibility for health services on the individual’s capacity to buy and sell these

services. He is supposed to enter the “business” of healthcare. Pushing veterinarians into privatisation leads to less accountability and not more, because they are forced to practice “health for profit” and not “health for all”. The oft-used argument that the “poor can pay” is flawed. Often, poor households go into debt in order to avoid losing a cow: what is then the impact of the debt on the household economy? What food do they have to miss? What unjust survival choices are they forced to make? If the poor could pay, they would not be poor! The impact of privatisation in India is illustrative. Despite livestock and dairy contributing 6 percent to India’s current GDP, government development budgetary allocations to animal husbandry and dairying has decreased from 1.2 percent in the 1950s, to a pathetic 0.2 percent in 2010. The same period of economic reforms has witnessed a sharp decline in livestock ownership amongst the landless from 16 per 100 households in 1971-72 to just 1 in 2002-03, and the portion of the rural population unable to obtain

the official nutrition norm of 2,400 kilo calories per day rose from 75 percent in 1993-94 to a high of 87 percent by 2004-05. In the same period, the average number of livestock increased only amongst the households owning more than 10 hectares of land.

Such figures show that the poor have been pushed out of livestock rearing, and profits have flown to the pharmaceutical and insurance companies. The nexus of government and private interests makes the former accountable to corporations rather than to its citizens.

The existing public veterinary health care system is far from perfect. Democratising the services would involve decentralised governance, appropriate extension work, prevention, accountability and transparency to farming communities. This demands *greater* public investment and not less, to enable a more effective and farmer-owned “free” service. Industrial agriculture is subsidised worldwide by a billion dollars a day without much ado. Why is the smallest subsidy on an essential service such as veterinary health, which is vital for the livelihoods of small peasants, argued away as economic inefficiency?

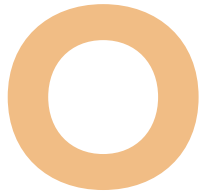
Sagari R. Ramdas can be reached at anthra.hydr@gmail.com.

“Do we want to practise ‘health for profit’ or ‘health for all’?”

Recent evidence from India suggests that rearing indigenous poultry rather than focusing on commercial breeds that give a higher yield can significantly contribute to the self-sufficiency and cultural wealth of rural communities – as well as boosting their income.

Text Mamta Dhawan, Lucy Maarse and Ugo Pica-Ciamarra

Unpacking a poultry myth



Over the last decade, high demand has caused the poultry sector to expand, globalise and consolidate, turning it into possibly the fastest growing of all livestock sectors.

In India it grew by nearly 10 percent between 1997 and 2002 and broiler meat is currently sold for half the price of lentils, traditionally considered the poor's main source of protein. In recent years, however, NGOs and governments have supported the introduction of "improved" poultry breeds in rural areas (commercial hybrids produced from two or more different strains). If these are reared under the right conditions, they give a higher yield in terms of both eggs and meat than indigenous breeds. But is that necessarily always the right way to go?

Indigenous breeds: the benefits

Traditionally, farmers in rural areas tend to prefer indigenous birds to these commercial hybrids. Indigenous breeds are self-propagating; they contribute to poultry diversity and cultural heritage and produce tasty meat and eggs. They are also well adapted to the local climate and can survive, produce and reproduce through scavenging. Because of their local origin they are less prone to disease or predator attacks, and their cultural and sporting values secure additional income. Even their coloured feathers can bring in additional cash. But since commercial strains have become popular and heavily supported by state and NGOs, the percentage of indigenous birds reared in India has dropped to just 10 percent of the total over the last 30 years (absolute numbers have remained relatively stable). Yet, meat and eggs of indigenous birds can meet the demand in a growing niche market.

High expectations So why have governments and NGOs supported the introduction of improved poultry breeds in rural areas? For the masses of deprived, marginal and landless farmers in these areas, poultry serves as both a safety net and a means to acquire assets and move out of poverty. If hybrids are reared under the right husbandry conditions, they give a higher yield in terms of both eggs and meat than indigenous breeds, but they do not hatch chicks. Experience has shown, however, that without the adequate infrastructure it is rarely cost-effective for small-scale farmers to raise improved birds. Two practices in rural India show how the introduction of simple, low-cost methods can easily enhance the contributions that indigenous birds make to farmers' livelihoods, without having to invest in costly new institutional and market frameworks.

Reviving the Aseel breed

The Aseel is one of the most widespread indigenous chicken breeds in Andhra Pradesh, India, and has an ancestry steeped in antiquity. Traditionally, they are kept for their cock-fighting abilities and their relevance in social and religious functions – and that's in addition to the superior taste and texture of their meat. They are usually kept by women and sell at prices 50 to 100 percent higher per kg/live weight than broilers. However, in the early 1990s infectious diseases like Newcastle disease (a highly contagious viral disease, affects poultry of all ages and can severely threaten farmers' livelihoods) became widespread among the breed and started to threaten its gene pool. State policies to introduce non-local breeds failed and in 1994 a consortium of NGOs led by the Indian organisation Anthra looked into ways of promoting the on-site conservation of Aseel poultry. They studied backyard production methods employed by some 2,000 households in 24 villages in East Godavari and developed improvements based on traditional technologies and institutions that were already in place. These included training local animal-health workers to provide basic, yet critical services to poultry farmers, and revitalising the traditional *vaata* sharing system (see box) to increase poultry ownership. The female poultry farmers found that reverting to growing pulses and traditional staples such as millet and paddy instead of cash crops not only increased household food security, but also offered a rich scavenging base for the poultry, with a positive effect on their income. This change in cropping enabled each household to maintain a flock of up to 25 birds.

The Aseel revival: the *vaata* sharing system

In 2000, ten women in Noogamamidi, Andhra Pradesh, were each given two Aseel hens, the rest of the group were given two Aseel cocks. They collectively returned 25 five-month-old chicks, which were then passed on to other women in the village who did not have any poultry. A year later 55 chicks had been produced, and, since there were no further takers in the village, the group decided to sell the birds, for which they received 2,890 rupees (US\$ 75). In 2003, eight birds were passed on to eight women in another village, and three years later more birds were given to women in two other villages. Over the past eight years, 74 women in six villages have benefited from the scheme.

And, as the women's groups grew in numbers and strength, they managed to get the government's Animal Husbandry Department to vaccinate their birds free of charge. As a result of these local efforts, mortality rates in the Aseel population shrank from 70 percent to 25 percent between 1996 and 2008 and, over the same period, the net income from one bird, including the value of both eggs and offspring, rose from 1,800 to 5,750 rupees (US\$ 40 to US\$ 130).

Re-inventing the Kadaknath

Similarly, efforts focused on the Kadaknath – another indigenous breed of chicken found largely in the Jhabua district of Madhya Pradesh – have paid off. The dark-coloured meat of the Kadaknath bird is considered a delicacy and consumers are willing to pay a premium for it. However, excessive consumption combined with the introduction of improved breeds such as the Rhode Island Red and recurrent outbreaks of Newcastle disease were diluting the Kadaknath gene pool and numbers plummeted in the late 1990s. Since 2003 a government programme has been running in tribal areas of Madhya Pradesh to enhance livelihoods of village communities. Prompted by a suggestion by local farmers, the Madhya Pradesh Rural Livelihoods Project (MPRLP) introduced the Kadaknath birds in new areas to support and strengthen local livelihoods. The MPRLP, in conjunction with village assemblies and BAIF, a local NGO, has facilitated the distribution of batches of 100 Kadaknath chicks, bought from the government hatchery involved in conserving this poultry stock. The carefully selected beneficiaries have received poultry farming training and obtained access to a variety of government programmes to finance the inputs. This led to unnecessary high initial investment on sophisticated poultry houses, special equipment and compound feed, as per experts' ill-founded advice. But through experience it was learnt that the breed has a high feed conversion rate and thrives well under (semi)scavenging conditions. In addition, vaccination, de-worming and first aid were provided by animal-health workers linked to BAIF. And while Kadaknath hens are sold in local markets, the popular birds are often purchased directly from the farm, reducing transaction costs for farmers. Rearing the indigenous Kadaknaths has increased annual net income from both eggs and offspring to an estimated 5,300 rupees (US\$ 120) per bird, compared to less than 1,200 rupees (US\$ 28) for other, ordinary native species. Currently, households have also taken up rearing Kadaknaths in scavenging systems themselves, typically in conjunction with few local hens that are good brooders, which Kadaknath hens aren't. Another plus for the Kadaknath is that they are vital in certain religious ceremonies.

Affordable healthcare is crucial

The two cases show that only small interventions are needed to revive and strengthen self-sustainable smallholder poultry practices that use indigenous breeds. There is no need to revolutionise prevailing husbandry practices or to make use of costly housing and equipment or to introduce day-old chicks or buy special feed. What *is* critical however is the provision of affordable animal health services for farmers, including the timely vaccination of chicks. Another important aspect concerns the diversity of the farming system; the more diverse the farm, the better the scavenging material. The Aseel case shows that female farmers can easily modify their own traditional farming and poultry distribution system. In the case of the Kadaknath birds, it was necessary to "learn by doing" before realising that these birds could best be kept in the way tradition had taught. Both cases show that governments would do well to stop distributing commercial hybrids, albeit for free, and focus on the provision of public services such as the prevention and control of (zoonotic) diseases. Communities themselves, and the private sector (or a public/private partnership), can be relied on to supply, for example, day-old chicks. Indeed, two pioneering companies in India are doing well out of selling two other indigenous species, the Kuroiler and Sadpuda, that are well adapted to the often harsh living conditions that exist in poor, rural communities. In their business strategies, both companies successfully targeted poor households.

A gift for society at large

This evidence from India suggests that indigenous poultry, normally handled by women, can significantly contribute to farmers' livelihoods through increased food security and cash income. While the returns from rearing just a few indigenous birds may not be sufficient to fully sustain a family, they will serve to generate highly nutritious food at minimal cost. In addition, these practices bestow dignity and respect on the family, which can offer an egg or the slaughter of a bird for its guests. The contribution that such practices make to heritage and cultural conservation can be regarded as a gift for society at large. ■

Mamta Dhawan (mamta@sapppp.org) is senior veterinary officer at the South Asia Pro-Poor Livestock Policy Programme in New Delhi, India. Lucy Maarse (lucy.maarse@gmail.com) is an independent advisor (Livestock & Livelihood) specialised in tropical animal production and extension, currently working from the Netherlands. Ugo Pica-Ciamarra (piciaciamarra@fao.org) works at the Animal Production and Health Division of FAO, in Rome, Italy, focusing on livestock sector policies and institutional changes for poverty reduction.

One way for “dollar-poor” small-scale farmers to increase their income per hectare is to switch to higher value agricultural products, such as meat, milk or eggs. Stronger engagement in livestock production, however, exposes smallholders to additional risks, such as losing their animals through theft, predation or disease. While farmers’ management practices provide some resilience to common diseases, public interventions are needed to help cope with epidemics.

The ongoing bird flu epidemics have demonstrated the vulnerability of smallholder livestock keepers to epidemic animal diseases. They have also highlighted farmers’ normal strategies for managing disease risks and coping with “production shocks”. First, poorer livestock keepers tend to invest in lower value livestock species, such as poultry, pigs, and small ruminants. These have higher reproductive potential than cattle or buffalo and allow relatively rapid restocking after animal losses. Second, smallholders tend to keep locally adapted varieties, with an innate or acquired resistance to endemic disease agents. These varieties are not only stronger, but also fetch higher prices on local markets due to the taste and texture of their products. Third, inputs into livestock production, such as concentrate feed, mineral supplements, vaccines or other prophylactics are kept to a minimum. The farmer will only use such inputs if he has personal experience of the benefits outweighing the costs (for example, few farmers vaccinate their poultry against Newcastle disease, even when the vaccine is available). These management practices ensure that the smallholder livestock “enterprise” is relatively resilient against commonly occurring, endemic diseases. When catastrophic stock losses appear, informal safety nets within the community will normally provide seed stock for the unfortunate livestock keeper to restock.

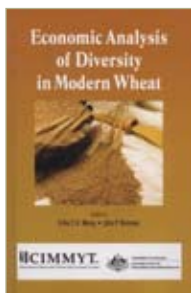
But these strategies fail in the face of epidemic diseases, to which local livestock breeds have not been previously exposed and to which they are just as vulnerable as high potential exotic breeds. In the case of epidemics, the livestock pool of an entire community may be depleted and thus intra-community safety nets fail. Of particular danger in this situation are distress sales, through which disease is easily spread to neighbouring communities. This combination of production shock and negative externality is unique to highly contagious animal diseases and needs to be addressed by public interventions that combine prevention, insurance and compensation for negative impacts of disease control activities.

Joachim Otte is co-ordinator at Pro-Poor Livestock Policy Initiative at the Food and Agriculture Organization of the United Nations (FAO), Rome.



Dealing with animal disease

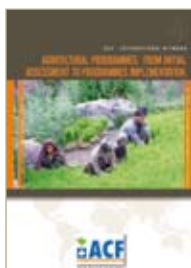
MIND! > NEW IN PRINT



Economic analysis of diversity in modern wheat

Erika C.H. Meng and John P. Brennan (eds.), 2009. CIMMYT / ACIAR, 192 pages.

What is diversity worth? This is a valid question if we think that the majority of the world's food comes from only a few crops, and from a limited number of varieties. Wheat is one of these crops. Our reliance on "improved varieties" has narrowed plant genetic diversity, in a process that seems to become ever more serious. Looking in detail at the production of wheat in China and Australia, the different chapters of this book consider aspects such as the geographical context or local preferences, and the apparent conflict between diversity and productivity. This broad analysis also takes into account the existing policies, presenting the implications this conflict has for policy development.



Agricultural programmes: From initial assessment to programme implementation

ACF International Network / Action Contre la Faim, 2009, 144 pages.

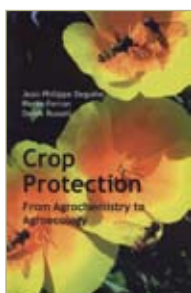
The fact that the number of hungry people in the world exceeds one billion shows the daunting challenges we face in terms of food production and distribution. For ACF, one of the ways to tackle this deficit is through "agricultural rehabilitation programmes" – programmes which aim to allow people to produce their own food or obtain it via exchange. This book looks at how to implement such programmes, starting with a set of logical principles to be followed (such as, first, do no harm). The authors complement the theoretical descriptions with examples from many countries, focusing on small-scale farming. Although aimed at the humanitarian community, the information provided is interesting in all sorts of transition contexts.



Agriculture at a crossroads: Food for survival

Greenpeace International, 2009, 64 pages.

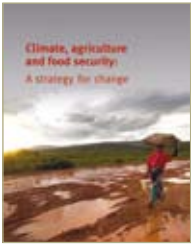
The fact that the main conclusion of the IAASTD team has been repeated often doesn't make it any less important: in terms of agriculture, "business as usual is not an option". Building on the IAASTD report itself, this document shows the main problems which the world faces as a result of industrial agriculture, focusing on its contribution to climate change and the fact that it does not solve the problems of hunger and malnutrition. With sharp arguments, it shows the advantages of agroecology and organic agriculture, ending with a list of simple – but effective – steps to take. Clearly written, this is essential reading for all involved in sustainable agriculture, and is available for free.



Crop protection From agrochemistry to agroecology

Jean Philippe Deguine, Pierre Ferron and Derek Russell, 2009. Science Publishers, 190 pages.

During the last 50 years, the need to avoid crop losses has become a billion dollar industry, and at the same time has resulted in increasing problems of toxicity and pollution, or of resistance to the same products that were expected to help. Describing the evolution seen in the methods to control pests in cotton (for long the "most sprayed crop"), the authors show the benefits of planning and preventative actions – mostly when compared to curative interventions. Especially interesting is what they call "habitat management", as an approach that combines crop protection, the protection of nature and sustainable development.



Climate, agriculture and food security: A strategy for change

Anne Moorehead (ed.), 2009. Alliance of the CGIAR Centers, 56 pages.

Prepared for the Copenhagen conference which took place in December 2009, this document shows the relationship between agriculture and climate change in a very clear way. Agriculture is behind much of the world's emission of greenhouse gases, while millions of farmers are already suffering the effects of climate change. Recognising that yields are going down, the CGIAR centres present ways to adapt to change, both now and in the future (focusing on water use, crop breeding, and soil management, among others). Attention is also given to the synergy needed between adaptation and mitigation. Even if this section could be expanded further, the recommendations given show the important role that small-scale agriculture plays in mitigating the negative effects of climate change.



A question of governance: To protect agribusiness profits or the right to food?

Molly D. Anderson, 2009. Agribusiness Action Initiatives, 22 pages.

Presented at the time of the World Food Summit held in Rome in November, this short briefing paper argues against the common recipes given to solve the world's food crisis. Raising production levels is not enough if this food does not reach those who need it most. Linking small-scale farmers to value chains can be very risky if issues related to power and control are not considered. With interesting figures, the author shows how, while the number of hungry people increased significantly during the previous twelve months, the profits of many agribusinesses were also the highest in history. Considering the IAASTD conclusions, she recommends looking at the entire food system and not just at production, while implementing programmes on the basis of rights-based principles.

Reading up on livestock

One of the most interesting publications available on the internet is "Livestock's long shadow" (Henning Steinfeld et al., 2006). This is a very detailed analysis of the relationship between livestock rearing and the environment. Another excellent publication is IFAD's "Livestock services for the poor" (2006). Considering that livestock keepers can benefit from the world's demand for animal products, the authors focus on the need of having "pro-poor services" which will not only support production, but also help empower producers. These are complemented by some very recent publications:

"Modern and mobile" (IIED and SOS Sahel, 2010) highlights the very important role that pastoralism plays in African economies, but also the need for new ideas and policies so that the benefits of pastoralism help reduce poverty. Also published this year, FAO's "State of food and agriculture 2009" looks at the recent growth of the world's livestock sector, and at the urgent need for stronger policies and regulations. With a special section focusing on small-scale producers, "Minding the stock" (World Bank, 2009) looks at the importance of policies when aiming at development. Equally interesting is the chapter written



by Czech Conroy in "Agricultural systems" (edited by S. Snapp and B. Pound, 2008). From an agroecological perspective, it shows the importance of animal production as part of a farming system, and of innovations at the local level. Finally, Readers of the old LEISA Magazine may remember vol. 18.1, entitled "Livestock: which way?", and also vol. 21.3, where we looked at the importance of small animals. Both issues are available online.



Re-assessing the fodder problem

Maintaining the availability of adequate feed for livestock is crucial to smallholders who depend on their animals for their livelihood. Traditionally, efforts to improve the quality and availability of fodder have focused on technology, but the Fodder Innovation Project is revealing that strengthening interactions among the various actors involved books even better results.

Text Mona Dhamankar. Photo Foundation for Ecological Security

Fodder makes up 70 percent of livestock inputs and is crucial to the livelihood of poor livestock-keepers in most developing countries. However, several factors continue to threaten its supply. Most livestock-keepers depend on

agricultural crop residues and grass provided by the grazing of common or fallow land supplemented by cultivated grasses. But most crops are rain-fed and can't be relied on. In addition, shifts in crop type and variety tend to reduce the availability of feed, as does encroachment from other land uses. Over-grazing often leads to the degradation of grazing ground, and to make matters worse, a consistent push to develop crossbred animals that are more productive but input-intensive, has accelerated the problem.

Shifts in perspective The traditional solution to these challenges has always been to promote the cultivation of fodder that is nutritionally beneficial, thus increasing yields. Governments have supported this approach by stimulating the use of high-quality seed varieties and developing new technologies. While this might work for large-scale operators, small-scale and landless farmers don't have the resources to take these new technologies on board. Fortunately, the International Livestock Research Institute (ILRI) decided to look at the issue from their point of view and discovered that the problems related to fodder availability have just as much to do with access to knowledge as with access to appropriate technology. As a result, the UK Department for International Development (DFID) funded a project that was implemented in India and Nigeria. Under the banner title of the Fodder Innovation Project (FIP) its findings keenly illustrate this shift in understanding.

Field-based trials in India and Nigeria The first phase of the project, which kicked off in 2003, identified new varieties of fodder and dual-purpose food/feed crops, passing on information to its partners (government research organisations and NGOs) with a view to increasing production. Each partner organisation implemented the project within some general parameters, but according to its own mandate and the context in which it worked. In both India and Nigeria it became apparent that issues related to seed production, supply and low survival of the plantations must be addressed before appropriate technologies could be employed. It also showed that while participatory research is useful, innovations need to be introduced in the institutional and policy arenas too. The effective development of technology demands concurrent investment in new local networks; programmes, processes and policies must all be open to innovation.



Photo: SAPPLP

Enabling effective innovation

The second phase of the project, which got underway in 2006, centred on how best to realise this call for innovation. Five partner organisations were identified through countrywide landscaping exercises in India and Nigeria and became the project's Key Partner Organisations*. They included governmental, semi-governmental and non-governmental organisations and were all running livestock-related programmes. To facilitate the process it was decided to select a context-specific innovation theme for each location. For example, one NGO in India, the Foundation for Ecological Security focussed on increasing the marketable surplus of milk on select routes, while a Nigerian NGO, the Justice, Development and Peace

Forests of fodder

In the Indian village of Wankute, in the area covered by one of the project's participating organisations, the Watershed Organization Trust (WOTR), the grass *Stylosanthes hamata* was identified as suitable for cultivation on communal lands as fodder. Representatives from WOTR, the Department of Forestry, Mahatma Phule Agriculture University, the village development committee and the Joint Forest Management Committee (JFM) divided up tasks that included providing the seed and passing on information on its features. The Forest Department worked alongside JFM to create a mechanism that would give farmers access to forest lands for fodder production. Landless farmers would have first access to the forages from the forest, followed by those who did not own enough land for fodder cultivation. It was exceptional for the Forest Department to take an interest in fodder issues and to allow farmers access to forest land for reseedling.

“Small-scale farmers don’t always have the resources to take new technologies on board”

Scaling up goat-rearing in Ikire

In the Ikire area of southern Nigeria, farmers kept goats mostly as a saving and/or insurance against crises. While rearing goats at a subsistence level, fodder was a non-issue. They were mostly being managed by women alongside their domestic chores who preferred to let them browse freely on available feeding resources, irrespective of the season. Traditionally goat farmers do not access markets directly – they depend upon middlemen (who work independently within pre-determined boundaries) who tend to be exploitative. In discussions with farmers, it was found that the farmers recognise the potential of goat rearing as a supplementary livelihood option, as a chance to make extra money during festivals. However, as the right network was not in place, they never took scaling up of the activity seriously. Continued discussions revealed that farmers who were keen to move from subsistence to more systematic rearing of goats (on a commercial scale) would require not only an assured, adequate and year-round supply of the right kind of fodder, but would also have to confine their animals, and build appropriate networks. In turn, each of these factors would require a combination of technology-related and institutional interventions to be carried out by relevant individuals and/or organisations.

Commission looked at raising goat-rearing from its largely subsistence status to a semi-commercial level (see box on this page). What came out of these joint endeavours was that if interactions between the wide range of organisations that have knowledge relating to fodder and livestock were strengthened, this would lead to the institutional and policy changes necessary to improving the way information is created, distributed, shared and used.

Providing pauses for reflection

The networks that were put in place all included representatives from public, private and civil-society organisations, and the livestock-keepers themselves. Joint action plans had different entry point activities such as seeding forests with fodder strains (see box on previous page) and organising animal vaccination camps. Periodic reviews, followed by mentoring and reflection on the network processes by all members proved to be important components of the project. Studies were carried out to find out how best to link the research to the policy-makers and the organisations involved, and a Fodder Innovation Policy Working Group was created at national level in both countries to facilitate this. These Working Groups comprised senior government representatives from the departments of animal husbandry, dairy and rural development; heads of NGOs; managing directors of co-operative milk unions, and scientists from agriculture and fodder research organisations.

The way forward The FIP contends that building networks and putting institutional arrangements in place to enable innovation is a better way of addressing the fodder shortage problem along with the conventional technology transfer approach. A socio-economic baseline survey was conducted at the beginning of the project; the repeat survey to assess impact is yet to be carried out.

While it’s too early to say if the innovation approach goes far enough to solving the problem, the project has shown those involved how to build and nurture networking processes that benefit livestock-dependent farmers. It also showed that the constraint is not limited to the availability of fodder, but it has to be put into context with other issues at the level of crop-livestock value chains, like markets or access to services.

Learning laboratories As an action-research project, the Fodder Innovation Project was successful in setting up networks and turning



Photo: SAPPLP

them into effective learning laboratories, but further improvements can still be made. Innovation platforms could be created around crop-livestock value chains and strategies put in place to ensure that innovations are pro-women and pro-poor. The lessons must be sustained and expanded before they have currency in policy debates, but the fact that an apex organisation like India's National Dairy Development Board agreed to host the Fodder Innovation Policy Working Group is encouraging. The shift in perspective from a technology-driven to an innovation-focused approach is well underway, but we need to gather more evidence before policy-makers take it on board wholeheartedly. ■

Mona Dhamankar (mona.dhamankar@gmail.com) is an independent development consultant working on livestock-based livelihood programmes and a PhD student at Wageningen University in the Netherlands.

* The Justice Development and Peace Center (JDPC), Ibadan, Nigeria. Sasakawa Global 2000 (SG2000), Kano, Nigeria. Rajiv Gandhi College of Veterinary Sciences (Ragacovas), Puducherry, India. The Watershed Organisation Trust (WOTR), Ahmednagar, Maharashtra, India. The Foundation for Ecological Security (FES), Bhilwara, Rajasthan, India.



A more systematic rearing of goats requires a year-round supply of fodder. Photo: Jonathan Davies

The Fodder Innovation Project – the story so far

The innovation-focused approach of the Fodder Innovation Project led to some very interesting results. These are some of the outcomes:

- In India, village dairy co-operatives that had gone out of business were revived when surplus milk became available. Some farmers collaborated with these co-operatives for fodder supply and payment recovery.
- New and unusual partnerships emerged in both India and Nigeria. In Ikire, Nigeria, representatives of the Goat Sellers Association gave tips on feeding and rearing to goat farmers. The Justice Development and Peace Commission collaborated with the Nigerian Veterinary Research Institute to provide training to local service-providers and vaccination services to goat farmers.
- Community-based organisations took the initiative of organising health camps in collaboration with the government to extend vaccination coverage.
- A demand emerged for research into improved goat breeds suitable for Southern Nigeria – an example of farmers helping to set research agenda.
- Closer and more efficient networks were set up in Rogo, Nigeria.
- In India, new fodder production initiatives emerged, bringing together governmental departments and academics.
- New responsibilities were shouldered at the level of policy-making, from organising trainings to liaising and co-ordinating on many fodder-related issues.
- India's Foundation for Ecological Security was so impressed with the project results that it extended the use of networking and the creation of multi-stakeholder platforms to all its other programmes.
- On learning of the project, India's Planning Commission invited a representative to take part in national livestock planning discussions.

Pastoralism: shifts in policy making

Pastoralism provides a living for between 100 and 200 million households, from the Asian steppes to the Andes. But misguided policies are undermining its sustainability. *Farming Matters* looked at how governments can best strengthen the governance of pastoral systems and find more equitable ways to include pastoralists in policy making. Land tenure and joint management prove crucial to the answer.

Text: Jonathan Davies and Guyo M. Roba

Pastoralism, the extensive production of livestock in rangelands, is carried out in climatically extreme environments, where other forms of food production are unviable. Providing a livelihood for between 100 and 200 million households, it is practiced from the Asian steppes to the Andes and from the mountainous regions of Western Europe to the African savannah. In total, its activities cover a quarter of the earth's land surface. As well as generating food and incomes, these rangelands provide many vital, and valuable, ecosystem services such as water supply and carbon sequestration: services that are being degraded through misguided

rangeland investments and policies.

Although some countries now officially recognise the value of pastoralism, negative perceptions still pervade. Pastoral policies are either non-existent or, where they do exist, are barely enforced. Establishing communal land tenure is crucial because it creates pastoral rights of access, provides opportunities for individuals to seek optimal ways of exploiting available resources, and facilitates changes in resource equity. However, the common property regime, which allows pastoralists to sustainably manage vast areas of land, is undermined by laws and policies that promote the individualisation of land tenure. As a result, dry-season grazing reserves have been lost,

livestock mobility has been restricted, land tenure has been rendered insecure and land degradation has increased, undermining the sustainability of the pastoral livelihood system.

Securing land tenure in Garba Tula

This past decade, however, has seen a promising shift by several governments to recognise and regulate access and tenure rights over pastoral resources. Improvements have been made in Niger (1993), Mali (2001) and Burkina Faso (2002). Mongolian government policy now supports communal land tenure through placing greater control of natural resources in the hands of customary institutions (see box). Benefits have impacted both pastoral livelihoods and the conservation of herders' rangeland environments. Against this backdrop, it is important to identify and support processes that can help strengthen the governance of pastoral systems, as well as local land use and the environment. Pastoral societies also need to find more equitable ways of including pastoralists in the policy-making processes, as well as in the design of technologies and the make-up of the customary institutions that shape livestock production systems and environmental governance. In Garba Tula, in northern Kenya, weak land tenure

and 2008, a Community Based Natural Resource Management (CBNRM) approach was set up to strengthen tenure. Spearheaded by a Community Task Force and strengthened by expert-facilitated consultations, the community arrived at a common understanding of CBNRM as "a way to bring local people together to protect, conserve and manage their land, water, animals and plants so that they can use these natural resources to improve their lives, the lives of their children and that of their grand children". The strategy should improve the quality of people's lives "economically, culturally and spiritually". Land in Garba Tula is held in trust by the County Council, but county councils generally exercise strict control over the allocation of land and are poorly accountable to local communities, who in turn are poorly informed of their rights. Contrary to popular perception, trust land is not government land, and it can provide a strong form of tenure if the community understands both its rights and the legal mechanisms to assert them. Garba Tula residents now document their customary laws and are encouraging the County Council to adopt them as by-laws. This will also provide a foundation for developing a range of investments that are compatible with pastoralism, such as mapping wildlife dispersal routes; residents



Pastoralism is frequently the best way to manage vast areas of land in a sustainable way. Photos: Jonathan Davies, IUCN, and Sue Cavanna, IIED

was identified as one of the key obstacles in the bid to improve the livelihoods of the region's 40,000 predominantly Boran pastoralists. Garba Tula, an area extending over around 10,000 km², has extraordinary biodiversity, but the full potential to conserve it was not being met, and people and their livelihoods were threatened by wildlife. In an initiative that emerged from meetings held by community elders in 2007

are also interested in ecotourism. The Community Task Force is setting up a local trust to manage the process and the painstaking procedure of ensuring community and local government buy-in is supported by a number of development, conservation and wildlife agencies as well as government. Since the vast majority of Kenya's drylands are legally trust land, the Garba



Photo: H.Ykhanbai

Innovative solutions in Mongolia

Nomadic livestock producers form the backbone of Mongolia's economy, where herding is a way of life. In recent years, grasslands in Mongolia have become overgrazed, affected by prolonged drought and poor management by the state. Mongolians recognised that innovative solutions were needed to tackle these issues and are trying out what is commonly known as the "co-management approach". This approach involves collaborative arrangements in which local resource users, such as herders, share responsibility and authority with governments for managing natural resources. The approach draws on the experience and expertise of all the players involved. Local users contribute their knowledge of the resource and past customary practices, while governments provide an enabling environment, including supportive policies and technical advice. The co-management approach is being tested by a project team that has created two groups: community herder groups and district level co-management teams that include community members, local government and civil society members. Together they have formulated agreements on how to manage grasslands and related resources. Local communities now have secure access to the resources they need and are developing institutions and methods to ensure they continue to have a voice. Co-management has resulted in productive pastureland, healthier herds, and increased incomes at the pilot sites. It is now being expanded into other areas and has led to legal and policy changes. Hopes are high for the future of Mongolia's herders and grasslands. For more information, see www.idrc.ca.

Tula experience could set a precedent for securing land tenure in other areas.

Encouraging community engagement

Policies and institutions must empower pastoralists to take part in policy-making that affects their livelihoods. This will also promote equitable access to resources, facilities and services, and guarantee sustainable land use and environmental management. In addition to addressing issues related to livestock production, health and marketing, pastoral policies should also tackle critical issues such as healthcare, education, land rights and women's rights as well as governance, ethnicity and religion. An important lesson from Garba Tula is that the policy environment may be more supportive than imagined, and what is missing might not be the policies so much as the capacity for taking advantage of them.

Published research on African pastoral systems has steadily overturned many of the misconceptions about pastoral systems, highlighting the importance of appropriate strategies to manage the variability of the climate in dryland environments. Effective management strategies will allow for diverse herds of variable size and keep them mobile. There are increasing opportunities for pastoralists to capitalise on environmental services such as the maintenance of pasture diversity, vegetation cover and biodiversity through ecotourism or through Payments for Environmental Services. The Kenyan example shows that even in Africa, where competition over public funds is tough and such schemes are poorly supported, the situation can be changed through community empowerment and government accountability. ■

Jonathan Davies (jonathan.davies@iucn.org) and Guyo M. Roba (guyo.roba@iucn.org) work in Nairobi, Kenya, for the International Union for Conservation of Nature (IUCN). Davies is Regional Drylands Coordinator, Roba is Programme Officer Drylands.



Photo: Jonathan Davies

Making education work for pastoralists



Around the world, pastoralists are asking for better education programmes. “We need to move beyond thinking about schools as buildings, and find creative ways to bring education to nomadic peoples!” So states Caroline Dyer, lecturer at Leeds University, just back from Kenya, where a new education strategy to reach mobile pastoralists has been launched. Text: Mundie Salm

Exactly how many pastoralists there are is unknown. Estimates range between 100 to 200 million households around the world (see the article on page 32). Mobility is central to pastoralism, and children need to stay with their families to learn different production tasks. These demands make it difficult for them to use the education and other services that are designed for sedentary people. Current models of formal education depend on getting teachers and materials to scattered populations in remote areas. This is logistically difficult to organise, expensive, and usually not very successful.

In meetings with pastoralists in South Asia and Africa, Caroline Dyer, researcher on mobile education, finds the same message everywhere: “Contrary to what people assume about nomads, they do want an education – they want to know what is going on in their countries and elsewhere. And it is their right – they should not be deprived of an education just because they are mobile.”

Radio broadcasts for learning

The new Open and Distance Learning strategy is a joint initiative between the Ministry of Education and the Ministry for the Development of Northern Kenya, supported by IIED. It offers innovative combinations of flexible teaching methods - a combination of radio programmes, face-to-face teaching and printed materials. Dyer explains that “the fundamental thing is to find a way to deal with mobility. We need to be realistic about what is available and see what technology can serve the needs best.”

About the curriculum, Dyer says plainly: “They don’t want a second-best education”. In the past, educational programmes have not offered material relevant to nomadic people’s way of life. It is difficult for pastoralist students to relate to a topic such as animal husbandry, for example, when it is based on the viewpoint of sedentary farmers, rather than techniques of drylands pastoralism. The ODL strategy will localise subjects such as literacy, math and sciences to reflect pastoralists’ daily reality and knowledge. This curriculum must be nationally recognised to ensure high quality.

The ODL strategy reduces dependence on teachers, but some face-to-face teaching is necessary. Attracting good teachers to remote and isolated “mobile schools” is challenging, and they tend to be poorly paid, have low credentials and often do not speak the pastoralists’ language. Says Dyer: “We need to think differently about teachers and how to recruit them.” Having pastoralist learning facilitators in the populations is the long term aim. Until then, teachers from outside need training programmes to get an understanding of pastoralist livelihoods. ■

Learning AgriCultures update

Interim versions of Modules 1 (Sustainable small-scale farming) and 2 (Soil and water systems) are ready. The modules can be downloaded through the “learning” button on ileia’s website. Mail us at educators@ileia.org with your feedback.

Crops and animals in Tajikistan



back on

When I first travelled the winding road from Dushanbe to Kulyab, in southern Tajikistan, I was stunned by the beautiful scenery but shocked by the barren hills that lined the road. There used to be rich forests in this area, and arable land where farmers kept cattle, sheep and goats. Today, the only trees that grow are in and around the settlements, and overgrazing has razed the landscape.

Before the break up of the Soviet Union, farming practices were more sustainable – large farms practised crop rotation and grew fodder crops such as *luzerne* and *esparcet*. Farmers also collected manure, storing it and using it as organic fertilizer; now, with deforestation depleting firewood supplies, they are forced to use manure for fuel. As a consequence, soil fertility is decreasing and farmers are having to depend more and more on expensive, and often scarce, artificial fertilizers. According to the German Welthungerhilfe, as much as two to eight tons of manure each year is used by a single household for cooking purposes. In parts of the Khatlon region, this represents 90 percent of all available manure. Crop yields are falling and Tajikistan badly needs solutions to curb this growing trend.

From state-funded to private initiatives

Some of the agricultural measures that might offer a way out include crop rotation, cultivating leguminous plants and fodder crops for livestock, and more intensive livestock farming. Also, keeping manure under cover would improve its quality, thus reducing the number of applications needed, saving money and reducing the need for artificial fertilizer. NGOs were keen to start activities to promote and develop such technologies together with the farmers. While awareness about the advantages of using manure is evident, Tajikistan lacks the necessary knowledge to implement it. In 2005, the Agriculture Training and Advisory Centre (ATAC) was set up in Kulyab, in the Khatlon region, to promote such knowledge. As in many other transition countries, governmental extension services are becoming less prevalent. Private extension initiatives (around 25 NGOs) are emerging and taking over this function.





Since the break up of the Soviet Union, small livestock keepers in Tajikistan have witnessed a worrying trend: using manure for fuel has negatively impacted soil fertility, resulting in a dramatic reduction in crop yield, and a matching drop in farmers' livelihoods. More intensive livestock keeping could help curb this trend.

Text and photos Willem van Weperen

The ATAC coaches individual farmers and train farmer groups. They use the Farmer Field School approach, both for crops and livestock. More recently they also started to develop value chains by connecting farmers with producers. In 2009, ATAC started a process of developing new advisory products, working closely with farmers and extension staff. Several factors emerged as possible solutions to the farmers' problems; as well as intensive livestock keeping, these included minimum tillage and the growing of apples and early vegetables. Cultivating commercial crops such as tomatoes and cucumbers also proved a viable enterprise since commercial crop

farmers are willing to pay a good price for manure. There are plans to establish experimental crop plots and to test livestock-keeping systems using the Participatory Technology Development extension method – activities that should yield materials for use by other private extension agents in Tajikistan, benefiting farmers outside the Khatlon area. ATAC also plans to develop commercial bull fattening, small-scale egg production and to provide a first-aid manual for farmers. ■

For more information please contact Willem van Weperen (willem.van.weperen@gmail.com), Agriculture Extension Advisor, Kulyab, Tajikistan.

Agricultural Tajikistan

Over 60 percent of Tajikistan's population works in the agriculture sector and it accounts for 30 percent of the GDP. A typical farmer cultivates around 3 hectares and keeps livestock. Land reforms are still underway, so land ownership is complicated. Most large state farms and co-operative farms have been subdivided. Some smallholders have formed collectives, since these have easier access to credit, inputs and machines.

Farmers earn a meagre income, so a large proportion of the labour force, mainly young men, has migrated to Russia. Between 1991 and 1997, agricultural output dropped by 55 percent, but since 1997 it's on the rise again. Cotton and wheat are the country's two main cash crops, accounting for 70 percent of arable land. Until recently, farmers were forced by law to grow cotton, but now they enjoy the freedom to grow the crops they choose.

All over the world, farmers, and the organisations they work with, are showing the many benefits which livestock brings, and are also showing ways to increase these benefits. These are only a few examples of the many interesting ideas and practices seen in the field.

Albania

Feeding our cows: dairy farm development

Farmers wishing to earn money from livestock production in Albania face a number of difficulties. Those working with Heifer Netherlands in Lushnje, in the western part of the country, decided that the two main things in need



of improvement were their stables and their livestock feeding regimes. First, they made sure their stables were ventilated, with proper lighting, pens, water and troughs. But the main

change was in animal feeding. They decided to grow alfalfa, maize and ryegrass, as this would provide high quality hay, fresh grass, silage and concentrate. Each farmer calculated the amount of feed they needed for the whole year, and some rented land. Water pumps were provided to guarantee water supply. As a group, they learned how to make hay and silage, and were able to considerably improve their animals' diets. The results of these changes were evident. Milk yield per cow increased, and so did profits. Farmers are healthier and their incomes are increasing; they now want more animals on their farms. One of farmers, Mariana Kristo, described how "seven years ago we had one cow, barely providing for our family of six. Today I have 12 Holstein cows, producing an average of 5,800 litres per cow. This is mainly due to the way we feed them."

Want to know more? Write to Neeltje Suikerbuijk of Heifer Netherlands: neeltje@heifer.nl

Colombia

Local options for land use planning

The uncertainties resulting from climate change have convinced many people about the importance of building water reservoirs.

Large scale dams can also provide electricity, making them even more appealing. But these projects may also lead to unwanted changes for the local communities, especially in terms of land use. The work of ASOGADI, the organisation of small scale livestock producers of Ituango, in the Colombian province of Antioquia, shows that drastic changes in existing land use patterns are not always necessary when trying to improve local livelihoods. Building on local traditions, this group has been able to increase the number of animals each household can support (from an average of 1.3 to 6), and thus increase the

overall yields and incomes. Local production of biogas has helped reduce firewood consumption by 80 percent. And at least 78 hectares of forest are now carefully protected. These are the main arguments they are presenting in protest against the government's decision of building a large hydroelectric site in Ituango. ASOGADI favours infrastructure, energy and water availability, but as a complement to local production – not as a replacement.

Want to know more? Write to Nubia Ciro: nubici@yahoo.com



Mexico

More benefits with trees

Livestock production is considered to be a serious contributor to climate change. At the same time, animal rearing in countries like Mexico is being seriously affected by: irregular rainfall and temperatures are already having an effect on the availability of water and forage. The establishment of silvopastoral systems (or systems

that combine forests and animals) has proved to be beneficial, contributing to a farm's resilience and even helping raise production levels. These results are even better if the systems are designed by the farmers themselves, on the basis of their own resources, needs and interests. This is the main objective of a project known as 'Scolel-te' (the Maya word for "growing trees"), implemented in the southern Mexican states of Chiapas, Oaxaca and Tabasco. Ambio, a local organisation, has been supporting farmers in these states with a series of projects, all of them focusing on building local capacities and developing local plans. Adding trees to pastures has helped improve the quality of the soil, and thus improve the quality and quantity of the forage produced. Trees have also become an additional source of income – farmers are able to use and sell wood, and even secure an income from the voluntary carbon markets.

Want to know more? Write to Guillermo Jimenez Ferrer: gjimenez@ecosur.mx



Cameroon

Meeting the demand for protein

One of the many different advantages of rearing animals is that they are a supply of protein for local diets. Improving local nutrition levels, while at the same time improving local incomes, was the main objective of Link-Up Afric, an organisation made up of youngsters living near Buea, in the South-West region of Cameroon. With two hundred birds and a locally-made incubator, they started a "quail development project", where they have been breeding these small birds, producing eggs, and promoting the consumption of both the meat and eggs. In less than ten months they have sold more than 1,700 eggs, meeting a demand that recognises their nutritional and medicinal properties. Meat demand is not as high, as many villagers are not willing to pay a relatively high price. But they are willing to rear the birds themselves, so they buy fertilized eggs. Both the Ministry of Livestock and Animal

Industries, and local NGOs, are producing training manuals and organising courses, and thus supporting these initiatives. Link-Up Afric has shown that low production costs and high outputs make quail rearing a very interesting option.

Want to know more? Write to INAPA, the Institute for Agro Pastoral Activities: awudungutte@yahoo.com



CALL FOR CONTRIBUTIONS

The water issue

Water is a scarce resource, and one which is unevenly distributed. Estimates say that only one percent of the world's water resources are fresh and renewable, and thus available for man's many uses. Agriculture uses 70 percent of this, and much more water is required if we are to increase production. Population growth, deforestation, urbanisation, industrialisation, and certainly climate change, all point to a worsening situation. How are small-scale farmers, and the institutions that support them, getting ready to tackle this situation?

Can we be more efficient?

At least 60 percent of the world's food is produced under rainfed conditions. For the millions of farmers who do not have access to irrigation, an uneven distribution of water means much lower yields, and therefore less production. Providing irrigation water is expensive, and irrigated areas also face difficulties. The overexploitation of groundwater has dramatically reduced its availability, while many canal-irrigated fields have become salinised – with the Aral Sea, in the old Soviet Union, as the best example of a man-made disaster.



Photo: Theib Oweis

If water is an increasingly scarce resource, how do we ensure its availability for agriculture, and also for sanitation and all our other needs? What steps are being taken in order to diminish uncertainty, or in order to make the best decisions? What rights, and what possibilities, do small-scale farmers have in order to increase yields, and improve their livelihoods? In this coming issue of Farming Matters we want to explore how groups of farmers, communities, or various stakeholders are working together, look at the co-ordinated steps which are needed at a watershed level, and at the possibilities for improving our overall efficiency.

Send us an e-mail!

The AgriCultures Network welcomes your contributions for our September issues. Featuring practical experiences from the field, our regional editions will look at micro-irrigation techniques, storing water, or at local level co-ordination approaches. Our global edition, Farming Matters, will complement the regional editions, addressing water management from a broader perspective. How can policies support small-scale farmers in improving their access to water? How can good governance ensure a more prudent, less wasteful use of water, and promote the production and consumption of water efficient crops? How can urban planners create space for urban agriculture that uses recycled wastewater? And finally, how can we, as a global movement for sustainable family

farming, argue the case for low carbon agriculture as it implies better water management and greater resilience against drought and floods?

Send us your suggestions for articles, the articles themselves, photographs, names of people you feel we should talk to, ideas for topics you feel we must definitely address, your opinion, or just information about the issues mentioned above. As we are a global network, your contribution is bound to be useful to one of the editions.

You can send your ideas to Jorge Chavez-Tafur, editor, at j.chavez-tafur@ileia.nl before May 15th, 2010. For more information on the AgriCultures Network, see www.agriculturesnetwork.org.



Guinea pigs, and more



Photo: Teresa Gianella

For more than ten years, HECOSAN has been producing guinea pigs, and making a nice profit by selling them in the urban market every month. But aiming at a biodiversity-rich farming system, they also produce their own forage in their 3.8 hectare plot, together with different fruit species such as avocado and *lucuma*. Even if in small quantities, crops also include maize, peas and cowpeas. This integrated system, however, is surrounded by conventional cotton producers, all of whom rely on a never-ending quantity of pesticides.

Five years later The different benefits of their integrated approach were presented by Luis Gomero in volume 21.3 of LEISA Magazine. Five years ago, there was already a clear advantage in economic terms when HECOSAN was compared to its conventional neighbours. At the same time, the different crops and species were already helping improve the quality of the soil, helping reduce the attack of pests and diseases, and even providing fruit for self consumption.

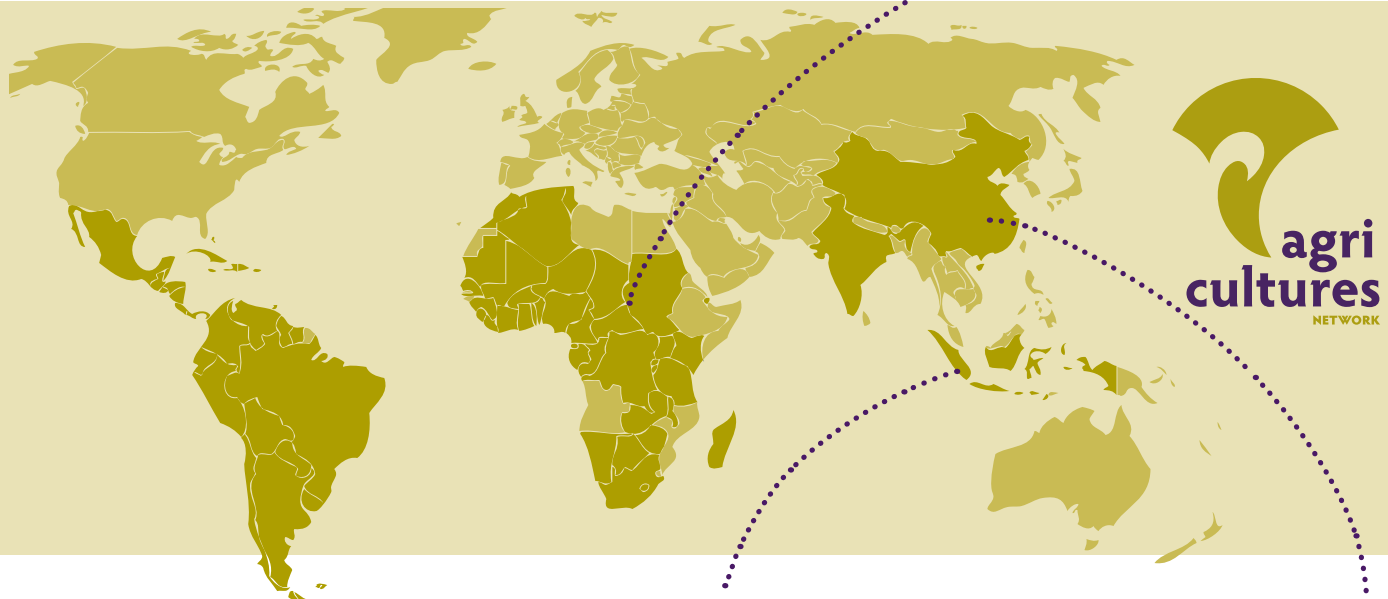
The basic principles are still the same, even if there have been changes in some of the components of the farm. Perhaps the biggest changes have been in the types of crops grown. Although rearing guinea pigs is still their main activity, Luis Gomero and his colleagues are now also growing strawberries for the local market, and herbs (like basil and thyme) for

Being the odd-one-out can be difficult, not least in agricultural production. This is why we were interested in hearing more about the state of HECOSAN, an ecologically managed farm found on the outskirts of Lima, in Peru, surrounded by conventional cotton farms.

export. This means that more labour is required, but the results in terms of income are significant. “We have an even more diverse farm, and the income we get does not only come from the guinea pigs.” In addition, since 2009, HECOSAN has been certified organic, so its products can also be sold in the organic market which is held every week in Lima.

Dealing with difficulties Being surrounded by conventional producers means having to take extra care, especially as guinea pigs are sensitive animals. Elephant grass is now also used as part of a live fence (while complementing the production of alfalfa), but special attention must be given to the irrigation water. The presence of animal diseases is always serious: this is one of the reasons why they decided to stop rearing hens and chickens, and why they opted for a different housing system for the guinea pigs themselves. Keeping up the quality of the soil is also a must, for which extra attention is now given to the in-house production of compost and vermiculture (composting through worms). It’s all hard work. But if the benefits of all these efforts were clear five years ago, they are much clearer now. (JCT)

The original article can be found on our website. Additional information is also found online, at www.raaa.org.pe/hecosan. Luis Gomero can be contacted at lgomero@raaa.org.



How do people in various regions in the world look at the talks held in Copenhagen? And what do they think is the best plan of action for the future? Our partners from Indonesia, China and East Africa report.

Indonesia: Grassroots movements can make a big impact

“The mainstream media in Indonesia covered the Copenhagen conference quite well, but mostly from an environmental point of view, not so much from an agriculture point of view. For climate negotiations to make a real difference, it is better to support the growth of grassroots level initiatives rather than waiting for full support from government. Grassroots movements, such as the Klimaforum 2009 – a group of social movements coming together from all over the world to discuss climate change solutions – have the potential to make a lot of impact. They are more likely to be sustainable in the long run (after funding has run out) and really answer the local people needs (instead of serving the interests of government or donors). Klimaforum emphasised the importance of family-based sustainable agriculture. Furthermore, it is important to raise awareness among the youth about the devastating effects of climate change, because it is their future that will be affected. Grassroots movements, awareness raising and including the youth can form a new force to make the Indonesian

government act more seriously to prevent the effects of climate change.”

Shintia D. Arwida, editor *Majalah Petani*. **Aliansi Organisa Indonesia**.
E-mail: majalahpetani@gmail.com

China: Difficult to see there is still disagreement

“Up till recently, many people in China believed climate change would not affect them. In recent years, however, unpredictable rains, prolonged droughts and crop failures have been some of the signs of global warming which have begun to affect the lives of Chinese people, especially farmers. People no longer consider that climate change is a distant threat. Therefore, China paid a lot of attention to the Copenhagen conference. Many people hoped for a final document that would reflect the common political will of

Photo: Adam Short, Oxfam



Photo: Tang Kong Fai, Oxfam Hong Kong



the international community, and the efforts every country has made in coping with climate change. Such a document would inject new momentum for future international co-operation.

At the national and local levels, Chinese farmers have tried to be active in raising awareness about the root causes of the threats, and also in determining what actions are needed. For example, in Deqin county, one of CBIK's project sites, villagers suffer from frequent strong winds. The traditional variety of maize could not bear the wind, so a new hybrid short-stalked variety was introduced. But the cows and yaks did not like this at all. Even if they did eat the hybrid maize, the animals did not grow as well as before and the quality of milk declined. Even if we ignore the disputes among different lobbies who attended the Copenhagen conference, climate change is never a simple issue. It is not about how humans react to the changes in nature, but about how we accompany nature during this tough 'man-made' period. No one can be sure what we could achieve by joint efforts, yet it is difficult to see how some people are still in disagreement."

Ren Jian, editor LEISA China, CBIK, China. E-mail: renjian172@126.com

Kenya: A dim beacon for the way forward

"Climate change is already devastating poor peoples' lives. The recent prolonged drought in Eastern Africa had a big impact on vulnerable communities, with livestock deaths, famine and insufficient water for both humans and livestock. Having seen this first-hand, I attended the first week of the COP 15 conference in Copenhagen, last December.

ALIN's participation at this global conference was through a partnership with Practical Action, who had an exhibition stand. ALIN exhibited material aiming to raise awareness regarding climate change, including T-shirts with climate change messages, posters and newsletters. The conference had many exhibitions mostly focusing on what organisations and governments are doing on various climate change issues.

World leaders were supposed to negotiate the reduction of global greenhouse gas emissions, but this objective was not achieved. The talks ended with little more than an agreement to keep talking; offering a dim beacon for the way forward. The leaders of the major powers negotiated with their national interests in mind, rather than safeguarding our shared destiny.



Photo: ALIN

This was quite disappointing given that prior to the conference there was a lot of hope that a deal would be sealed, especially in supporting African countries to cope with the changing climate.

In my view, developing countries will continue to experience difficulties in trying to adapt to climate change. There is a need to review the negotiating process under the UNFCCC and call upon all parties to strengthen their work within the UN system to address climate change. It is my belief that all African institutions and all Africans have a role to play in addressing climate change, hence the need to solidify their efforts to ensure that the UNFCCC-COPI6 in Mexico delivers fair, adequate and legally binding outcomes."

Noah Lusaka, editor Kilimo, ALIN, Kenya. E-mail: nlusaka@alin.net

COLOPHON

Farming Matters

Small-scale agriculture for a sustainable society. Farming Matters is published quarterly by ileia



Centre for learning on sustainable agriculture

Address:
P.O. Box 2067, 3800 CB, Amersfoort, the Netherlands

Visitors address:
Zuidsingel 16,
3811 HA Amersfoort,
Tel: +31 (0)33 467 38 70,
Fax: +31 (0)33 463 24 10
E-mail: ileia@ileia.org

Editorial team
This issue has been compiled by: Jorge Chavez-Tafur, Karen Hampson, Lucy Maarse, Petra Rooijackers, Mundie Salm, Frank van Schoubroeck and Mireille Vermeulen.

Subscriptions
Subscription rate for one year (four issues): organisations

45 euro, individuals 25 euro. For local organisations in the South there is a reduced fee of 10 euro. Individuals in countries not covered by a regional edition, may receive the magazine free of charge on request. For an overview of the regional editions, see www.agriculturesnetwork.org.

The AgriCultures Network
ileia is a member of the AgriCultures Network; eight organisations that provide information on small-scale, sustainable agriculture worldwide, and that publish: LEISA Revista de Agroecología (Latin America), LEISA India (in English), Majalah

Petani (Indonesia), Agridape (West Africa, in French), Agriculturas, Experiências em Agroecologia (Brazil), 可持續农业 (China), and Kilimo Endelevu Africa (East Africa, in English).

Design & layout
Frivista, Amersfoort, the Netherlands

Printing
Koninklijke BDU Grafisch Bedrijf B.V., Barneveld, the Netherlands.

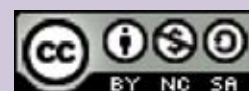
Funding
The ileia programme is funded by Sida and DGIS.

Cover photo
Folkert Rinkema

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

Volume 26.1
ISSN: 1569-8424

ileia uses the Attribution-Noncommercial-Share Alike 3.0 Unported Creative Commons Licence. For details please see www.creativecommons.org.



"ALL OF AFRICA'S CATTLE AND OTHER RUMINANTS CONTRIBUTE JUST THREE PERCENT OF GLOBAL LIVESTOCK METHANE EMISSIONS."

Carlos Seré, "No simple solutions to livestock and climate change", 2009, International Livestock Research Institute, Kenya.

"IF THE GATES AND ROCKEFELLER FOUNDATIONS WISH TO EXTEND THE HAND OF FELLOWSHIP TO THE AFRICAN CONTINENT, THEY SHOULD MOVE AWAY FROM STRATEGIES THAT FAVOR MONOCULTURE, LEAD TO LAND GRABS AND TIE LOCAL FARMERS TO THE SHOP DOORS OF BIOTECH SEED MONOPOLIES."

Raj Patel, Eric Holt-Gimenez and Annie Shattuck quote Nnimmo Bassey, director of Environmental Rights Action in Nigeria, in their article "Ending Africa's hunger", published in The Nation, September 2009.

"Conventional cattle raising is like mining. It's unsustainable, because you're just taking without putting anything back. But when you rotate cattle on grass, you change the equation. You put back more than you take."

Eliot Coleman, author of a book on organic farming called "The new organic grower", in the article "How cows (grass-fed only) could save the planet". Time, January 25, 2010.

"Worldwide, production of meat, milk and eggs is increasingly dominated by a small number of international breeds and, as a result, almost every month, another livestock breed becomes extinct."

New Agriculturalist,
www.new-ag.info/09/02/focuson/focuson1.php