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agriculture

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In this issue

Promoting organic farming in Bangladesh

Bangladesh has some of the most fertile agricultural land in the world. However, the move from subsistence to commercial farming has increased the use of chemical fertilisers and pesticides. Many non-governmental organisations have been supporting and training smallholder farmers in organic farming methods.

Many trained farmers realise the importance of ecological agriculture and have adopted this approach on their homestead (garden) land. However, they are not always able to use it on major farming land, which provides most of their livelihood security.

A report from the International Institute for Environment and Development in the UK examines 14 non-governmental organisations (NGOs) promoting ecological agriculture in Bangladesh. Most NGOs run programmes that encourage poor women to grow vegetables using organic fertilisers and pesticides on homestead land. This practice has been extended to larger farms, which are generally controlled by male landowners. Group members also receive environmental education and training along with financial and technical support.

Awareness of organic agriculture has risen significantly, particularly amongst women, who encourage people not in training programmes to use organic fertilisers

Training in organic agriculture has had significant impacts on homestead farming and commercial farming. Awareness of organic agriculture has risen significantly, particularly amongst women, who are using organic fertiliser and encouraging people not in the programmes to do the same. However, although many trained farmers realise the importance of organic agriculture, they are not always able to put the training into practice, especially on major farming land. Key barriers to the wider adoption of organic farming are:

- The availability of organic fertiliser in villages has not kept up with increases in farmed area and farming intensity. Homestead land gets priority for organic manure and little remains for big farms.
- Though the quality of organically grown crops and vegetables is much better, organic farming produces fewer crops per unit of land compared to modern farming.
- Media campaigns and untrained neighbours put pressure on trained farmers to use chemical fertilisers and pesticides for high yields, undermining the programme.
- High yield seeds, chemical fertilisers and pesticides are more easily available and farmers can use credit to purchase these.
- Landless and smallholder farmers depend on sharecropping, which forces them to maximise the short-term benefits from crop farming. Chemical fertilisers and pesticides are therefore more attractive, offering more immediate returns than organic farming.
- Farmers are confused by the contradictory messages and conflicting approaches to ecological agriculture promoted by different NGOs.

Some NGOs are pushing for national policy reforms to address these problems, but there is no sign yet of any success. If NGOs want their programmes to continue to be effective, they must:

- establish commercial units to produce organic fertilisers, as well as using other sources of compost
- introduce participatory training where farmers can learn by practising the skills they need
- extend programmes to more villages by making microcredit and social programmes more accessible, for example by including cultural activities
- improve coordination amongst NGOs to avoid duplication and confusion
- develop marketing for organically produced fruit and vegetables to secure higher prices
- improve the understanding of sustainable agriculture among the government and donors, to change policies that negatively affect the environment.

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www.id21.org

Lessons from the informal dairy sector in Kenya

The dairy industry is important for Kenya, which has more cattle than any other African country and the highest milk consumption of any developing country. More than 80 percent of milk is sold, unprocessed, by small-scale vendors who operate illegally in the informal sector.

The Smallholder Dairy Project (SDP) researched the importance of the sector and used its findings to influence policy for poor people. Analysis by two project partners, the Overseas Development Institute in the UK and the International Livestock Research Institute considered how policy change that helped small-scale farmers and vendors was achieved.

Liberalisation of Kenya's milk sector in the 1990s led to the collapse of the state owned dairy monopoly, Kenya Co-operative Creameries. Large numbers of small-scale milk vendors grew quickly to fill the gap. Demand for their produce, which was cheaper than the processed products sold by large private companies, was high.

Private companies saw informal vendors as unfair competition and used their influence with the regulator, the Kenya Dairy Board (KDB), to try to remove them. Vendors could not get licenses, were harassed by inspectors and were the subject of a media campaign led by large processing companies, which portrayed them as criminals and their milk as dangerous.

SDP research showed the importance of small-scale dairy farmers and vendors for pro-poor growth. The project therefore re-directed its efforts towards advocacy for policy change in favour of the informal sector. The project's activities resulted in changed behaviour in all sectors:

- Most importantly, the KDB now works with small-scale vendors to help them get licenses and their officers no longer harass vendors.
- The new Dairy Policy recognises the importance of the informal sector.
- The campaign against small vendors by private processors has ended. Some processors have begun to work with vendors to encourage them to process their products.
- Many vendors are organising into groups. A number have received training in milk-testing and licenses from the KDB.
- Small-scale farmers are more vocal about the importance of the vendors to their businesses. Donors are also more supportive of informal traders in the dairy sector.

The Smallholder Dairy Project was influential in bringing about these changes. ODI and ILRI identified a number of aspects of the project that were essential to making that happen:

- Strong collaboration between government, the private sector, informal traders and civil society organisations was essential. Partnership with organisations like ActionAid, who had experience and contacts for advocacy, was crucial.
- Good, credible research was key to successful advocacy because it provided evidence to back up calls for acceptance of the informal sector.
- Continuous communication through workshops, the media and meetings influenced the behaviour change in all groups.
- Support from well-placed individuals was critical. In this case the project manager was from the Ministry of Livestock and Fisheries Development.
- Politicians needed to understand they would gain politically through supporting the informal vendors.

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The private sector's role in agricultural innovation

Donors and governments have previously used public agencies to generate new agricultural technologies, but this is not always successful. They often failed to appreciate the importance of commercialised agriculture led by the private sector and their role in agricultural innovations.

Innovations are new knowledge and technologies in agricultural and food production, processing and marketing. With 15 million farms and 100,000 agricultural industries in Latin America, the agricultural sector urgently needs innovations. National agricultural research institutes have traditionally been responsible for generating innovations. In recent times, however, their importance has declined and producers cannot generate the innovations alone. Government and donor efforts to generate innovations in subsistence agriculture have also failed, or have not reached the right people.

Research from the International Food Policy Research Institute considers how the private sector can contribute to agricultural innovation. Governments and donors are often sceptical that profit-seeking companies will invest in generating pro-poor knowledge and technology. However, many companies provide important inputs: most innovations for fast-growing commercial crops have been developed or imported through companies that deal with seeds or agricultural inputs. Agricultural processing industries and buyers have also been actively involved in generating and spreading innovations to farmers as they search for better quality products.

Key findings include:

- Many private sector organisations are part of networks and partnerships involving agricultural groups: private and public research centres, universities, funding agencies, cooperatives and agricultural companies. Together, they develop innovations.
- Some private companies focus on importing knowledge and technology innovations from abroad, purchasing technologies and hiring technicians and international experts.
- Other companies prefer to generate innovations internally, either because they expect higher returns from exclusive knowledge or because they do not expect partnerships to bring rapid results.

Governments and donors should adopt an open approach to generating innovations in the agricultural sector. This requires them to consider the different needs of the many groups involved in agriculture. Private sector innovations can be more involved in policies that:

Governments and donors are often sceptical that private companies will generate pro-poor knowledge and technology. However, many companies provide important inputs

- encourage greater private sector investment in public institutions and the commercial sector, which can generate and expand technological innovations
- share information about knowledge, technology providers and clients
- strengthen funding for private agencies to access technological goods and services
- encourage links between technology users and providers
- stop government programmes that give away technological goods and services in a way that discourages small companies from investing in innovation
- help producers and their organisations identify what goods and services farmers need
- redirect national agricultural research organisations away from a focus only on 'public good presents', such as seeds for small farmers, to the production of technology and knowledge that encourages innovation.

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Agricultural Innovation: Understanding the Private Sector's Role in Latin America, Issue Brief 42, International Food Policy Research Institute: Washington DC, by Carlos Pomareda and Frank Hartwich, 2006 (PDF)
www.ifpri.org/pubs/ib/ib42.pdf

Keeping women involved in the seed economy in south India

Mundu women plant cucumber seeds in a field in Jharkhand, India. The Rural Development department of Tata Steel has sponsored a network of irrigation channels in rural communities, enabling people to cultivate various crops all year round.
Heldur Netocny
Panos Pictures

The management of seeds is crucial to farming and food production. This practice is often dependent on women's knowledge of seeds. However, in India's Deccan Plateau, seeds are becoming the 'property' of the private sector and big businesses. This deprives women of their traditional role, with serious consequences for their households and agricultural diversity.

Research from the International Institute for Environment and Development in the UK uses case studies from Andhra Pradesh, India, to determine the effects of seed commercialisation on women, local farming systems and agro-biodiversity.

In the dryland farming systems of the Deccan Plateau, women maintain seed and crop diversity. This enables rural families to cope with the region's many environmental demands. Agricultural biodiversity is particularly high for dryland crops such as sorghum, pearl millet, foxtail millet, pigeonpea, chickpea and greengram. Over two thirds of Indian farmers produce seeds from their own harvest.

This local seed economy, which has developed over thousands of years, is being threatened as the private sector takes over. Seed commercialisation begins with the introduction of hybrids. This could ultimately lead to the introduction of genetically engineered sterile seeds. It also involves regulations to prevent farmers reusing seeds. This forces them to buy seed from private companies, leading to a loss of local diversity. National agricultural policies in India have largely supported this trend.

This has serious implications for women as independent seed producers and farmers. There are many cases of poor people being forced to give up farming and move to cities as a result of the commercialisation of agriculture. Seed commercialisation in particular creates several problems:

- it degrades women's knowledge systems and ability to innovate
- it threatens the livelihoods of poor, landless farmers by making seeds too expensive or inappropriate for dryland crop farming
- it destroys the networks on which poor rural households rely for survival
- it undermines women's status and bargaining power within households
- it destroys localised seed economies: seed regulations hamper farmer-to-farmer seed exchanges that reinforce ecological sustainability and contribute to social harmony in rural communities.

Globally, supporting independent seed production requires a radical re-directing of public policies. This is necessary to support the small farms that provide a livelihood for over one quarter of the world's population. The Indian government should adopt new policies to alleviate poverty and conserve agro-biodiversity. The researchers suggest:

- strengthening farming systems in terms of ecological inputs, including ensuring farmers have access to livestock, biopesticides and dryland seeds, and supporting organic farming
- state support for decentralised seed systems, for instance through farmer-led participatory breeding and community seed banks
- changing policies so that new laws and technology support independent seed production, rather than undermine it: for example, intellectual property rights should be used to support small farmers.

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www.iied.org/pubs/pdf/full/14520IIED.pdf

case study

Genetically modified cotton benefits South African farmers

It is necessary for studies to consider the economic impacts of new genetically modified (GM) agricultural technology in developing countries. Potentially, there are benefits as well as costs.

In South Africa, many farmers have started to grow a Bt cotton variety developed by Delta Pineland as a cash crop, because it produces an insecticide that helps resist bollworm. Research from the University of Reading in the UK discusses the economic benefits of adopting this cotton in the Makhathini region of South Africa. Unlike previous studies, this study is large scale and relatively long term.

By 2002, an estimated 92 per cent of the small cotton growers in Makhathini had adopted the Bt variety. All farmers bought seeds and pesticides from the private company Vunisa Cotton and used credit to pay for these inputs. Vunisa Cotton also purchased the cotton produced: no other cotton supply or cotton marketing companies worked in the area during the study period.

The research shows:

- **Bt cotton produces higher yields and increased profits for farmers.**
- **Farmers do not need to spray so much pesticide on Bt cotton, meaning they have more time for other income generating activities.**
- **Using less pesticide is likely to have health and environmental benefits; hospital records show a decline in pesticide poisoning cases following the adoption of Bt cotton.**
- **Smaller producers benefited as much, if not more, than larger producers.**

Whether these benefits can be sustained, and repeated for other GM crops, is unclear. Makhathini may be a special case and there may be certain constraints and risks associated with adoption:

- **The widespread adoption of the Bt variety may lead to pest resistance, although this risk is also present in conventional breeding methods. Planting limited amounts of a more susceptible cotton variety in Bt fields may minimise this problem.**
- **A collapse in production would have serious consequences for farmers so dependent on credit.**
- **Vunisa Cotton's central role in providing and purchasing Bt cotton means farmers are dependent on one company. This presents a risk; farmers will be subject to the company's future pricing decisions.**
- **Farmers may save time on labour, but alternative sources of income are limited in Makhathini.**

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'The Economic Impact of Genetically Modified Cotton on South African Smallholders: Yield, Profit and Health Effects', *Journal of Development Studies*, 42, 4, pages 662-677, by Richard Bennett, Stephen Morse and Yousouf Ismael, 2006

Supporting livelihoods through agricultural rehabilitation

Food security interventions in countries emerging from conflict should move beyond conventional seeds and tools approaches. They need to address vulnerability and support the agricultural component of rural livelihoods.

Research from the Overseas Development Institute in the UK examines case studies from two countries emerging from conflict, Sierra Leone and Afghanistan. The paper explores, both conceptually and practically, how agricultural rehabilitation can contribute to linking humanitarian assistance, social protection and longer-term development through effective and principled approaches.

Agricultural production is surprisingly resilient in the face of conflict. External support should not focus solely on increasing production, but should also aim to improve consumption, markets and livelihoods. However, agricultural programmes in many post-conflict situations have persistent problems:

- External agencies use crisis-oriented, project-based approaches that are only marginally related to the needs and abilities of rural populations. In both case studies, problems existed long before the 'crisis' that triggered relief efforts.
- Efforts to promote self-sufficiency do not adequately understand local livelihoods and the causes of vulnerability. Consequently, they fail to connect local relief efforts with the regional or national institutions and policies needed to support them.
- Planners are beginning to consider how market-based approaches (such as cash, vouchers or support to agricultural input and output marketing) can help rural communities. However, this is a major challenge in unpredictable post-conflict situations.
- Civil society, the state and the private sector each has a role to play in delivering agricultural inputs and services, but it is not clear what these roles should be. For example, private sector development is often 'crowded out' by the supply of inputs and services from non-governmental organisations.
- Post-war public sector reform is often seen as necessary, but whether a crisis can really motivate effective change is questionable. The challenges involved in major reforms should not be underestimated.

Policymakers need a deeper understanding of how conflict affects agriculture. This includes the changes in the livelihood strategies of affected people and factors that determine market opportunities during and after conflict

Policymakers need a deeper understanding of how conflict affects agriculture. This includes the changes in the livelihood strategies of affected people, and the market factors that determine opportunities during and after conflict. The researchers recommend that agricultural support in post-conflict situations should help the transition from supply-led programmes to establishing a sustainable, market-led system for service provision. This should be developed within a framework of broad-based efforts to protect and promote rural livelihoods. This transition can be broken down into several measures:

- ensuring that vulnerable farmers have access to agricultural inputs and services
- increasing agricultural production through access to appropriate technology options
- increasing rural incomes by promoting agricultural product and labour markets
- establishing the capacity, structures and institutions necessary for the sustainable delivery of inputs and services
- addressing vulnerability and social inequality through social protection and promoting livelihoods
- promoting the reforms necessary to address the structural causes of vulnerability.

These interventions are already being implemented in many post-conflict situations. However, policymakers must regard these as part of a broader transition, with greater emphasis on addressing vulnerability and building institutions.

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www.odi.org.uk/HPG/papers/hpgreport22.pdf

useful websites

Debating GM crops - id21 insights 52
www.id21.org/insights/insights52/index.html

Future Agricultures
www.future-agricultures.org

International Centre for Genetic Engineering and Biotechnology
www.icgeb.trieste.it

Institute for Animal Health
www.iah.bbsrc.ac.uk

International Dairy Federation
www.fil-idf.org

International Federation of Organic Agriculture Movements
www.ifoam.org

International Livestock Research Institute
www.ilri.org

Kenya Agricultural Research Institute
www.kari.org

Organic Exchange
www.organicexchange.org

United Nations Food and Agriculture Organization
www.fao.org

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