Agricultural Research and Extension Network

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From the AgREN Coordinator

AgREN Special Issues

AgREN members are reminded that each January issue of AgREN papers will be devoted to a special theme. The theme for January 2002 is globalisation and its impact on the conduct of pro-poor agricultural research and extension. Earlier this year AgREN members were asked to submit proposals for papers to address this theme. The proposals for the globalisation issue have now been reviewed and we look forward to an excellent set of Network Papers. We are also pleased to announce that Jonathan Kydd, Professor of Agricultural Development Economics at Imperial College, London, has agreed to be the guest editor for the special issue. Professor Kydd brings a wealth of experience on agricultural development to this task. We will conduct an electronic discussion (through AgNET) of the issues raised by the globalisation papers in early 2002.

It is now time to begin thinking about a suitable theme for the special issue in January 2003. We will have to choose a theme by the end of this year in order to make a call for papers. What do AgREN members believe are the most crucial issues currently facing agricultural research, extension and rural development? What types of experience would you like to hear about from other network members? What do you believe would make the most useful focus for the special issue of AgREN papers in January 2003? Please send any thoughts or suggestions to the AgREN Coordinator, Robert Tripp (r.tripp@odi.org.uk), by the end of October.

Contributions from members

Socio-economic assessment of hybrid rice adoption by farmers in Bangladesh

The Research and Evaluation Division of BRAC, a rural development organisation in Bangladesh, and The Social Sciences Division of the International Rice Research Institute, Philippines conducted a joint study for making an early assessment of the adoption of hybrid rice by farmers in Bangladesh. The objectives of the study included investigating farm-level adoption patterns, differential performance, relative profitability and constraints to adoption of hybrid rice varieties introduced during 1998–9 boro (winter rice) season. Two hybrid rice varieties were considered – Alok 6201, imported from India and Sonor Bangla (CNSGC-6), imported from China. The comparative performance of high yielding varieties (HYVs) of rice was also investigated.

One hundred and seventy three farmers from six districts representing different agro-ecological regions were selected for the study. Of them, 108 were Alok producers and 65 were Sonar Bangla producers. All had also produced some HYVs. Findings showed that farm size had a negative effect but education had a positive effect on adoption rate of hybrid rice. Grain yields of hybrids were 14% higher than that of HYVs though Sonar Bangla did much better than Alok. Input costs of hybrids were 23% higher. Profitability of Sonar Bangla was higher, but that of Alok was lower than that of HYVs.

Constraints to hybrid rice adoption included external dependence and higher cost of seed, higher need for management skill, input intensity, higher incidence of pest and diseases, inadequate yield gain and lower head-rice recovery. Among special constraints of Alok were high rate of unfilled grain, grain shedding, crop lodging and poor keeping quality of cooked rice. Stickiness of cooked rice and relatively inferior quality in terms of taste were also considered as other constraints for both the varieties.

Some of the above problems could have been avoided if, instead of introducing rice hybrids in haste without a clear deployment strategy, they were introduced after scientific on-farm testing for 2–3 seasons/years across agro-ecological regions.

Since the study covered the first year of introduction of the two hybrid rice varieties considered, the results might be considered as tentative. Results imply that Alok is not likely to be sustained for adoption. Though Sonar Bangla was highly profitable, its inferior quality may also inhibit growth in its adoption in the long run. In the meantime, high quality local hybrids could be developed and domestic production of hybrid seeds could be expedited. Hybrids for rain-fed environments that are resistant to biotic stresses should be developed. Research infrastructure, scientific on-farm testing of new hybrids before release, integration of credit with extension services, better management practices and coordination between public sector and NGOs/private sector may also be strengthened.

Further information

A. M. Muazzam Husain is a Research Specialist with the Research and Evaluation Division of BRAC. He may be contacted at: Research and Evaluation Division, BRAC, 75 Mohakhali, Dhaka - 1212, Bangladesh.
Tel: 880-2-988 1265
Fax: 880-2-8823542, email: braacamr@bdmail.net
His colleagues in this study are Mahabub Hossain and Aldas Janalah of IRRI, Los Baños, Philippines.
The semi-arid tropics (SAT) are characterized by poor soils and low and erratic rainfall. In marginal rainfed areas, patchy plant stands often result from the failure of the crop to emerge quickly and uniformly. Yields of many crops are reduced because not enough seeds germinate and the plants that eventually emerge do so slowly and are susceptible to drought, pests and diseases.

Over the past five years, evidence has accumulated that many of the major crops grown in tropical and sub-tropical areas can benefit substantially from ‘on-farm’ seed priming. The priming process simply involves soaking the seeds overnight (for about 8–10 hours), surface drying them, and then sowing within the following day. This low-cost, low-risk technology is readily adopted by farmers, once they have tested it for themselves.

For instance, in hundreds of on-farm participatory trials in western India, conducted in collaboration with the Krishi Indo-British Rainfed Farming Project, seed priming increased yields of chickpea, maize, wheat and upland rice. Farmers reported that priming hastened germination, enhanced crop establishment, promoted seedling vigour and shortened the period to maturity. These results were confirmed elsewhere in India and in W. Africa for upland rice, for wheat in Pakistan, India and Nepal, for maize in Zimbabwe and for chickpea in Bangladesh.

The technology has been tested for other crops. Farmers in Zimbabwe reported in 1997–98 that seed priming improved the performance of sorghum as well as maize. Estimates of yield advantages due to priming in similar trials in 1998–99 were 22% for maize and 27% for sorghum and a survey of farmers during the 1999–2000 season suggested that most have continued to prime seeds of both crops. The performance of pearl millet, barley, sorghum and mungbean has been improved by priming in Pakistan and there are ongoing trials with pearl millet implemented by ICRISAT in India and in Zimbabwe. The response to priming of various legumes (mungbean, cowpea, lentil, groundnut, Bambara groundnut) is also the subject of ongoing trials in Pakistan, Nepal and Zimbabwe.

The greatest impact of priming has been achieved when participatory methods have been used. For example, large areas of India and Bangladesh are left fallow after the rainfed rice crop has been harvested because, although there is still plenty of water stored deep in the soil, the surface dries out too quickly to allow another crop to emerge and become established. ICRISAT in collaboration with DFID, BARI (Bangladesh Agricultural Research Institute) and PROVA (People’s Resources Oriented Voluntary Association), Bangladesh, has been promoting the use of chickpea in such an area in Bangladesh, called the Barind. Scientists have found that, even with modern high yielding varieties, yields are low, around 1.1 tonnes per hectare. However, in a recent set of 30 on-farm trials (implemented by farmers during the 1998–9 post-rainy season) priming of seed raised mean yields by almost 50% to 1.63 tonnes per hectare and risk of crop failure was reduced. The results were confirmed in 100 on-farm trials during the 1999-2000 post-rainy season. Sufficient evidence has accumulated in only two years to support seed priming as a recommended practice for chickpea in the Barind region. The participatory approach to technology development and uptake is ideally suited to NGOs because of their emphasis on working closely with farmers. On-farm seed priming is a widely applicable technology and its effects are generally independent of the crop variety used. This is important, because seed priming can be used to ‘add value’ to the benefits achieved by using improved, more appropriate, modern varieties – another area in which participatory approaches can have great impact. Further efforts are needed to demonstrate and promote widely this minimal input technology to other regions.

Further information
Dr D. Harris is an AgREN member based at the University of Wales. He may be contacted at:
Centre for Arid Zone Studies, University of Wales, Bangor, Gwynedd LL57 2UW, United Kingdom
Tel: +44 (0)1248 382922
Fax: +44 (0)1248 371533
email: D.Harris@Bangor.ac.uk.
A booklet is available on the subject of on-farm seed priming from Dr Harris at the above address. Further information may also be obtained from: www.seedpriming.org

His colleagues, J.V.D.K. Kumar Rao and J. Kumar are based at ICRISAT, Patancheru P.O., 502324, Andhra Pradesh, India.
ILEIA - Centre for Information on Low External Input and Sustainable Agriculture

For nearly two decades, ILEIA - Centre for Information on Low Input and Sustainable Agriculture - has been championing the cause of small and marginal farmers in the South, who are being pushed out of their livelihoods by mainstream agricultural development. It has done so by collating and disseminating information on the alternative strategies developed by farmers to increase agricultural productivity whilst regenerating the natural resource base and maintaining biodiversity.

Low external input and sustainable agriculture (LEISA) as promoted by ILEIA is about the technical and social options open to farmers who seek to improve productivity and income in an ecologically sound way. LEISA is about the optimal use of local resources and natural processes and, if necessary, the safe and efficient use of external inputs. It is about the empowerment of farmers and communities who seek to build their future on the basis of their own knowledge, skills, values, culture and institutions. LEISA is also about participatory methodologies to strengthen the capacity of farmers and other actors to improve agriculture and adapt it to changing needs and conditions. LEISA seeks to combine indigenous and scientific knowledge, and to influence policy formulation in creating an environment conducive for its further development. LEISA is a concept, an approach and a political message.

The LEISA Magazine, formerly the ILEIA Newsletter, is probably the best-known ILEIA publication and the only periodical on LEISA related issues for the South, with a global outreach. It is published four times a year on themes relevant to small farmers in the South. The two most recent issues dealt with: resilience in agriculture (looking at the way farmers cope with disaster, what measures they undertake to prevent disaster and how aid and rehabilitation can be made more sustainable); monocultures towards sustainability (examining the effects of monocropping and the alternatives used by farmers in moving towards more integrated farming). At present an issue on local alternatives to globalisation is being produced. Two regional editions of the LEISA magazine are available at present: LEISA Revista de Agroecologia in Spanish for Latin America and LEISA India in English for the Indian Sub-continent. The magazine reaches nearly 18000 subscribers worldwide with an estimated 3-5 times more readers.

Apart from the Magazine, ILEIA has a large collection of books, periodicals, reports, videos, ‘grey literature’ etc. on LEISA related topics in its documentation centre. This information on ILEIADOC, ILEIA’s electronic database, is accessible through the new ILEIA website launched recently. With its new website ILEIA hopes to further strengthen its role in the exchange of LEISA information, by attracting more subscribers and contributors who wish to support small farmers in their struggle for sustaining livelihoods. As an interactive platform, it will open up possibilities for creative and constructive discussions and a healthy exchange of views on LEISA related issues.

Having dissemination and exchange of information as a key strategy for advocating LEISA, ILEIA has produced more comprehensive publications. The four ILEIA readers published between 1990-7 - 'Joining farmers experiments', 'Let farmers judge', 'Linking with farmers' and 'Farmers research in practice' - reflect the concepts developed and elaborated by ILEIA. 'Farming for the future' is another widely known publication, considered by many as a very informative and useful resource book on the subject of LEISA. It is used in many teaching institutions and has been translated into several languages - Arabic, Bahasa Indonesia, Chinese, French, Spanish, Portugese and Thai. 'LEISA in perspective - 15 years of ILEIA' is not just a celebration of ILEIA’s many efforts and achievements, but of LEISA and of small farmers.

Building partnerships with like-minded individuals and organisations is central in ILEIA’s thinking. The many contacts established over the years have resulted in an informal network of LEISA practitioners and promoters who share the vision. Whilst pursuing such partnerships, ILEIA will also seek to establish links and support those working towards sustainable agriculture from entry points such as policy advocacy, campaigning, training etc.

Having contributed substantially in giving recognition to LEISA at the global level, ILEIA realises that there is yet a lot to be done before LEISA is brought into mainstream thinking as an alternative to prevalent agricultural practices. This becomes even more important considering the present trends of globalisation, trade liberalisation, genetic engineering etc. that continue to alienate farmers from their lands, livelihoods and cultures. Thus, ILEIA will continue to work towards giving farmers their rightful place by being a carrier of their experiences, views and knowledge. Join us in this endeavour - contribute an interesting experience, subscribe to the Magazine, share this information with someone else or let us know how you could support us.

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For more information

For further information about the Centre for Information on Low External Input and Sustainable Agriculture please contact:

ILEIA
Kastanjelaan 5, P.O. Box 64,
3830 Leusden, The Netherlands
Tel +31(0)33-4326011
Fax +31(0)33-4951779
email: ileia@ileia.nl
www.ileia.org
The Green Revolution increased the productivity of agriculture in the last 3 decades to meet the needs of an increasing population. For the stakeholders involved the purpose was very clear and relatively simple: use the yield potential of the new, shorter statured, lodging resistant germplasm to raise the yield frontier and produce more food per unit of land. If yield per unit area had not been increased and yield levels were the same as in the early 1960s much more land would have been needed to feed today’s population, assuming they hadn’t died of starvation. The concern today is how to make the green revolution technology more efficient, ecologically sound, and sustainable while increasing its productivity and profitability and improving farmer livelihoods and reducing poverty.

The rice-wheat consortium, a partnership of national agricultural research programmes in South Asia (Bangladesh, India, Nepal and Pakistan), international centres (CIMMYT, IRRI, ICRISAT, IWMI and CIP) and various advanced institutions (Cornell, CABI-UK, IACR, Rothamsted, IAC Wageningen and others) has been challenged to help find suitable solutions to this dilemma. This group has identified various reduced and zero-tillage technologies and a basket of options is being promoted to farmers for experimentation and feedback.

A stakeholder participatory approach that hinges on strong partnerships has been used to promote this technology. Stakeholders include researchers, extension personnel, local manufacturers, and of course farmers. Other groups including NGOs are encouraged to join the effort. The greatest success has occurred when the farmers were given the means to experiment with the technology rather than the more traditional approach of demonstrating the technology by researchers. Along with the technology testing by farmers was strong monitoring by a team of scientists to look at the longer term implications of the new technologies on the environment including physical, chemical and social resources.

The technology being promoted is relatively scale neutral. The simplest technology, referred to as surface seeding, requires that seed is broadcast or line sown on a suitably wet soil surface, requires no investment for equipment, and can be adopted even by the poorest farmer. Other technology that reduces tillage requirements is based on the use of small two- or larger four-wheeled tractors. It can be used by all farmers since they only need to go once to the service provider to get their land planted rather than hiring equipment several times for ploughing.

Research is also underway to find alternative ways of establishing rice crops that reduce the drudgery of manual transplanting, a job usually done by the women. Efforts are underway to eliminate the practice of puddling rice soils so that the next upland crop in the rotation can utilise the benefits to soil physical and biological properties, a true systems activity. Bed planting systems, where crops are grown on the top of a bed and furrow system offer benefits to water savings, less lodging, improvements in fertiliser use and highyield. Recent data have shown that even rice can be grown this way, resulting in high yields and 50% savings in water. This opens up the opportunity to combine bed planting with zero- or reduced-tillage so as to combine the benefits of both systems through permanent bed systems.

Farmers are very enthusiastic about these new technologies. They save money and at the same time increase production. For example, 0-tillage saves up to 100 litres of diesel in parts of India and Pakistan because excessive tillage is not needed. It also saves significant wear and tear on tractor parts. This translates into about US$50–60 or 30% savings in production costs per hectare while at the same time increasing production. What farmer wouldn’t want to adopt this technology? In Haryana alone, the area of 0-till has risen from a few hectares in 1996 to 100,000 hectares in 2001. Similar numbers can be found in Pakistan’s Punjab.

Environmentally, there are also tremendous benefits in terms of greenhouse gas emissions (savings through less diesel use for tractors and pumping water, but also less short-term burning of residues). It is estimated that if 0-till is adopted on just 1 million hectares of the 13.5 million hectares of rice-wheat land in South Asia, 0.26 million tonnes of CO2 emissions could be saved. Water is also becoming a major constraint to agriculture in South Asia. Ways are needed to produce more food with less water. The technologies listed above provide one means to achieve this. Farmers report 20% savings in water use with 0-till, 30% savings in bed planting for wheat, 50% for bed planted rice and even more savings if all these RC technologies are combined with field leveling and better farm layouts.

To conclude, conservation agriculture using some of the techniques outlined above provides hope to meet future food needs in the region. However, in the long run, population growth must be slowed otherwise all these technologies will be for naught. Man is the major cause of resource and environmental degradation and man has to find ways to remedy this.

Further information
Peter Hobbs is a CIMMYT Natural Resource Group Regional Scientist based in Nepal. He may be contacted at: P.O. Box 5186, Kathmandu, Nepal. Tel: 977-1-422773, Fax: 977-1-419352. For further information please see www.rwc-prism.cgiar.org
Participatory technology development with goat-keepers: some experiences from India

Introduction
Scientists have acquired a tremendous amount of knowledge about the feed resources and nutrition of ruminants, both large and small. Despite this, the adoption of technologies developed by researchers for enhancing forage production and utilisation has been poor. This is partly because feed technologies have often been developed without the involvement of the intended users, and without an adequate understanding of their livelihood systems and constraints.

This note describes the experiences of a goat research project, concerned with easing seasonal feed scarcity, that has been working in various parts of semi-arid India (including districts of Rajasthan, Gujarat and Karnataka). The project, which began in October 1997, is a collaborative one between BAIF Development Research Foundation and the Natural Resources Institute, and is funded by DFID’s Livestock Production Programme. It has been seeking to take a participatory approach to technology development (PTD), based on the assumption that this can help to ensure that new technologies are appropriate to livestock-keepers’ needs and circumstances, with a view to increasing the likelihood of adoption. Factors that hinder and facilitate a participatory approach are discussed later.

Needs assessment exercises were undertaken to identify key constraints faced by goat-keepers. These varied from village to village and area to area, and included poor reproductive performance of female goats (mainly low conception rates); and high kid mortality. Subsequently, appropriate trials (most focusing on feed supplementation, but two on de-worming) were conducted to address the problems. Selective feed supplementation has been effective in addressing both of these problems, and successive trials have sought to reduce the costs of supplementation by focusing on locally available materials, especially tree (Prosopis juliflora) pods. Three technologies tested by the project have benefit/cost ratios of at least 2:1.

Factors facilitating increased participation
A high degree of participation is not usually possible from the outset. However, the experience of the BAIF/NRI project suggests that if researchers are committed to achieving it there is likely to be a gradual shift along the spectrum towards greater participation. This may be due to one or more of the following factors: (a) development of a positive rapport between researchers and participants when successive trials are conducted in the same village; (b) improved understanding of problems or opportunities; (c) the efficacy and profitability of the technologies is demonstrated, or improved through modifications; (d) and technologies found to be ineffective are abandoned.

Factors hindering a participatory approach
The shift towards a collaborative relationship with participants is not automatic. It is important to be aware of, and to address, factors that may hinder the adoption of a participatory approach. These include: (a) researchers lacking experience and orientation in PTD; (b) researchers not thinking in terms of the profitability of treatments; (c) researchers lacking awareness of constraints on goat-keepers’ factors of production (capital, labour and land); (d) pressure to move quickly from the diagnosis and needs assessment phase to the establishment of trials (due to the short lifetime of some projects), resulting in inadequate needs assessment; (e) small project budget, resulting in insufficient staff time to encourage full farmer involvement; (f) late scheduling of project activities (related to previous point); and (g) staff turnover and involvement of inexperienced staff.

The project has sought to address points (a), (b) and (c) by providing relevant training, in the form of one-week courses in PTD, to members of the research team. In addition, the project has developed procedures that require the field research staff to complete a protocol, before any trials are authorised, and to provide, inter alia:

- evidence that the researcher has done a thorough needs assessment (upon which the case for the trial is based) and understands well the problem or opportunity;
- quantified estimates of the cost of the proposed treatment and the likely or possible benefits, indicating good potential for the treatment to be profitable.

Technology development is a gradual and iterative process. Thus, a number of trials may be required before a technology is developed that meets livestock-keepers’ priority needs and is suitable for adoption. The experience of this project appears to confirm the widely held view that the more and the earlier farmers and livestock-keepers are involved in the research process, the more rapidly appropriate technologies will be identified. The prospects for adoption of the use of Prosopis juliflora pods as a supplement appear to be very good.

Further information
This note is an output from a project funded by the UK Department for International Development (DFID) for the benefit of developing countries. The views expressed are not necessarily those of DFID.
Czech Conroy is a Principal Scientist at the Natural Resources Institute. He may be contacted at: NRI, University of Greenwich, Central Avenue, Chatham Maritime, Kent, ME4 4TB, UK.
Email: czech.conroy@nri.org
Tel: 44 (0)1634 880088
Fax: 44 (0)1634 883706

Dr A. L. Joshi is an Executive Vice-President of BAIF Development Research Foundation, Pune, Maharashtra, and can be contacted at:
Email: mdmtc@pn2.vsnl.net.in
The Client-Oriented Agricultural Research and Dissemination (COARD) Project is based at Sorere Agricultural and Animal Production Research Institute (SAARI), Soroti District in North Eastern Uganda. The project is supported by DFID over a five-year period (1999–2004) and is implemented by SAARI, an institute of Uganda’s National Agricultural Research Organisation (NARO). The COARD project supports demand-driven agricultural research and technology dissemination in the Teso and Lango Farming Systems, which are two of the five farming systems mandated to SAARI.

The project aims to improve poorer farmers access to appropriate technologies, with the overall objective of contributing to improving the livelihoods of resource poor farmers in Northern and Eastern Uganda, which is one of the poorest regions in the country. The project will achieve these objectives through strengthening the capacity for client-oriented agricultural research in SAARI and amongst other stakeholders and by testing, developing and transferring approaches and systems for client-oriented technology development and transfer.

One mechanism being implemented at SAARI to strengthen client-oriented agricultural research and dissemination is the Agricultural Technology Funds (ATFs). The project has established two funds, the Client-oriented Research Fund (CORF) and the Technology Partnership Fund (TPF).

Through the CORF and the TPF, funds are available for agricultural research and dissemination projects that emphasise:
- participatory on-farm research, where farmers and other end-users participate in the selection, validation and endorsement of new technologies (for example participatory improvement of poultry) or,
- testing and evaluating mechanisms and approaches for disseminating agricultural technologies (e.g. testing a mechanism for disseminating improved groundnut varieties; production of information materials on improved cowpea storage).

All projects funded through the ATFs must have a client-oriented focus where there is:
- Full participation of clients in the identification and priority setting of agricultural research needs and in the development, evaluation and dissemination of agricultural technologies
- Decentralised decision-making
- Strengthened partnerships between public service providers and rural organisations
- The use of contracted approaches to public service delivery
- The pluralistic provision of agricultural services – e.g. private, NGOs, Government, cooperatives individuals
- Increased accountability to clients
- Increased accountability of project implementers (towards clients)
- Increased output orientation of research projects
- Increased focus on the process of implementing projects (for example, through action research projects)
- Increased use of transparent development criteria for the use of public funds (criteria for this include: equity, poverty focus, gender, environment, sustainability, cost effectiveness, client demand, focus on regional priorities, inter-disciplinarity of the implementing team, economic viability, increased speed of delivery of technologies, compliance with Government of Uganda policies (such as the Plan for Modernisation of Agriculture, NARO Outreach Programme and the National Agricultural Advisory Services (NAADS) Programme)

Procedures for application to the ATFs are designed to encourage partnerships between different actors involved in the delivery of agricultural services. All project implementers must have clearly defined roles and form a multi-disciplinary team. Proposals should encourage partnerships across and within institutions. Preparation grants are available to facilitate linkages between and within organisations for sustainable partnerships and to involve stakeholders in the proposal formulation.

Proposals are assessed by a local committee (the ATFs Management Committee) of scientists, government and non-government extension agents, farmer and private sector representatives, with both selected and nominated members. The Committee uses a transparent set of development criteria to select proposals for funding.

The project has so far made two calls for proposals (October, 2000 and February, 2000) and received a total of 494 applications. Currently five projects are fully funded, five are funded pending minor changes and a further thirteen should be funded towards the end of the year.

The Client-Oriented Research Support Unit (CORSU) comprises the Head, the project Manager (who is the Director, SAARI), Research-Extension Liaison Officer, SAARI, Socio-Economist, SAARI and two technical assistants (Adaptive Researcher and Socio-Economist). CORSU is responsible for the day-to-day operation of the ATFs, but also for capacity building, needs assessments and other surveys, support to SAARI staff on other programmes, monitoring and evaluation and communications.

**Further information**

For further information, or to be added to the mail-list for updates on the project please reply to:

COARD Project Manager, Director, SAARI, PO Box Soroti, Uganda

Tel: +256 77 221351 or +256 45 61192 Fax: +256 77 280351 or +256 45 61444
email: corsu@infocom.co.ug
Participatory Plant Breeding in Honduras

Participatory plant breeding, as a shared undertaking between scientists and farmers, is a new activity in Honduras. Beginning in 1998, the Panamerican Agricultural School, Zamorano and Investigación Participativa en Centroamérica (IPCA), a Honduran research organisation funded by USC-Canada’s Seeds of Survival Programme, began supporting farmers to improve local varieties of beans. This is one of a series of projects in participatory plant breeding funded by the CGIAR’s System-wide Programme in Participatory Research and Gender Analysis. In this case, agricultural research committees (CIALs) made up of local farmers are leading the plant improvement process in two different regions of Honduras. A maize-breeding project with the CIALs, supported with Norwegian funds, has recently been initiated in the same areas.

Since 1995, Honduran CIALs have conducted dozens of experiments, mainly testing new varieties of basic grains against their own local varieties (Humphries, et al., 2000). While there have been a few notable successes, namely a small number of improved varieties that have out-yielded farmers’ varieties, this has not generally been the case at upper hillside locations. Indeed, in the Tascalapa watershed area of Honduras, where around a quarter of the country’s CIALs are located, our estimates suggest that at elevations above 1,000 meters, farmers’ varieties out-yield improved varieties four out of six times in the case of beans, and five out of six times in the case of maize. Experiments at other CIAL locations reported by farmers at national annual meetings confirm the superiority of local materials in a significant number of cases. And since the poorest people are generally located in the higher reaches of the hillsides or in the most remote, marginal areas, a good case for improving local varieties can be made on grounds of poverty alleviation. This is particularly true of the Yorito area in the Tascalapa watershed of Honduras, where the Tolupan, an impoverished native group which exhibits high morbidity and mortality rates relative to the rest of the local population, is located at the highest altitudes.

Germplasm collected at two research sites is currently leading to the improvement of three local bean varieties. Zamorano crosses local materials with elite lines containing characteristics that farmers have deemed desirable and then returns the segregating lines to the CIALs. The different lines are retained at ‘collective selection centres’ in the hillsides where individual CIALs make selections from promising third generation materials, which they take back to their own communities for ongoing selection by CIAL and other community members. The whole process is carefully recorded by CIAL members for local use.

Participatory plant breeding offers farmers in marginal areas an opportunity to improve their livelihoods through their own active participation. When incorporated into a research and development programme, as in the CIAL project in Honduras, it creates a strong sense of local ownership while simultaneously helping farmers to improve their observational and agronomic skills. However, it also requires considerable support in the early period while farmers learn how to manage the process. For this, local research organizations are vital for mediating between breeders and farmers since it is unlikely that scientists will have the time, or the inclination, to dedicate to traveling to remote locations. Moreover, most will lack the social skills for interacting with poor farmers. Thus local research organisations that have the support of both farmers and scientists are essential for straddling this divide.

Further information

Sally Humphries may be contacted at the Department of Sociology and Anthropology, University of Guelph, Guelph, Canada N1G 2W1, email: shumphri@uoguelph.ca


Impacts of changing rural land use in Australia

Community concern over rapid expansion of bluegum plantations onto farm land in Australia’s wetter fringes has prompted several recent studies of impacts and attitudes to land use change. One study in SW Victoria found that plantations represented only one sixth of the total change – which is largely away from sheep grazing. Nevertheless, rural communities feel very threatened by the loss to traditional populations, facilities and services that result from the move towards this tax-driven plantation development. The trees also drastically change their rural landscape – from open, tree-dotted vistas to dark, closed forest. A spate of new ‘tree companies’ have purchased or rented farm land for Eucalyptus globulus plantings, using money from city investors to establish pulp producing farms on a 10 year harvest cycle. Sheep grazing enterprises are in decline generally because of the low wool price.
The greatest change in land area since 1990 in SW Victoria has been in dryland cropping – mainly canola and wheat on traditionally wool producing properties. The vast increase in cropping and also in dairying has hardly been noticed by the rural communities and is not seen as threatening. Some bigger towns seem to have benefited from expansion of trees, and many older farmers have taken opportunities to sell land to tree companies and to exit from farming. Trees can be expected to increase the requirement for labour in the next few years, but this will not help locals unless they can receive training in tree, timber and pulp handling skills. The plantations have led to a spectacular injection of capital into the rural towns, to the benefit of local business.

One of the major concerns is about the way plantations have expanded on good land and not on the salinity threatened areas that were expected to benefit from the government tax incentives. Another concern about trees is the huge requirement for road transport at harvest, which local governments must face up to soon. Shire councils have found it extremely difficult to plan properly for expansion of trees, and data on plantations or their requirements are difficult to obtain. Dairy farmers are concerned about adverse effects of trees on aquifers for irrigation of pasture.

The study\(^1\) recommends that shires develop coordinated environmental planning schemes and mapping facilities. Tree companies are advised to actively counter the current negative perceptions of their industry – and to work with communities to find ways of adding value to current plantation developments. There is obvious need for research on effects on hydrology of rapid changes away from pasture towards trees and annual dryland cropping. The full advantages and multiplier-effects of the new tree plantings in SW Victoria will not be realised unless sound plans are made and followed to capitalise on these potentials for local communities. Changes in government tree-planting incentive policies would seem essential if environmental objectives are to be achieved through commercial expansion of plantings to drier, saline-prone inland areas.

Further information
Research institutes should ensure farmer participation in the identification and, where appropriate, conduct of research.
As a way forward, the delegates emphasized the need for further consultation as well as capacity and awareness building with and among civil society organisations at local, national, regional and global levels to enable them to achieve greater impact on the international agricultural research agenda.

The delegates endorsed the recommendations of the civil society consultative meeting convened earlier this month in Frankfort, Germany by NGOC which called for the CGIAR to
- evolve from commodity- to ecoregional-based institutes with cross-cutting programmes; and
- promote real and respected participation in priority setting and governance by all stakeholders, especially small farmer organisations.

Meeting of non-governmental and farmer organisations in East and Southern Africa

To fulfil the mission of the CGIAR to promote sustainable agriculture for food security in developing countries, agricultural research must alleviate poverty and respond to the needs and priorities of poor farmers’ declared delegates from over 40 non-governmental (NGO) and farmer organisations in Eastern and Southern Africa in Durban, South Africa, on Sunday, 20 May 2001, immediately before the Mid-Term Meeting of the Consultative Group on International Agricultural Research (CGIAR).

The international agricultural research agenda must be genuinely ‘bottom-up’ and set at the local level, especially by resource-poor farmers. Priorities include food security and sustainable use of natural resources; respecting farmer knowledge; sustaining livelihoods on limited land; low external input production systems; land tenure and production policy; and the development and introduction of appropriate curricula at tertiary institutions.

Adequate response to these priorities would require participatory processes wherein
- governments should create space for all development actors;
- media should publicise and legitimise indigenous knowledge;
- farmers should determine research priorities and ensure they benefit from research;
- NGOs should facilitate implementation of new partnerships;
- research institutes should ensure farmer participation in the identification and, where appropriate, conduct of research.

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- evolve from commodity- to ecoregional-based institutes with cross-cutting programmes; and
- promote real and respected participation in priority setting and governance by all stakeholders, especially small farmer organisations.

Further information
The Durban workshop was convened by the NGO Committee (NGOC) of the Consultative Group for International Agricultural Research (CGIAR), Durban, South Africa, 20 May 2001.
For further information about the workshop contact Mutizwa Mukute (pelum@ecoweb.co.zw) or see the NGOC web page http://www.infoperu.org/ngoc-cgiar

Genetic resources are fundamental to food security and to provide opportunities for income generation. Taro (Colocasia esculenta), one of the major food crops in the Pacific Islands, has evolved significant diversity but since the arrival of taro leaf blight (TLB) disease in the region, earlier last century, there has been considerable genetic erosion and decline in production along with displacement by other food crops.

In 1993, TLB provided the most recent dramatic evidence of its impact when it was introduced to American Samoa and Samoa. Prior to 1993, taro was the major export commodity in Samoa, but within a year of the disease outbreak production was decimated and incomes severely reduced. The TLB outbreak in Samoa provided a timely reminder of the urgent need to find sustainable long-term measures to control the disease.

Consequently, the Secretariat of the Pacific Community (SPC), the International Plant Genetic Resources Institute (IPGRI) and representatives from Pacific island countries (PICs) met to devise strategies to help rejuvenate taro breeding programmes and the conservation of taro genetic resources in the region. The outcome of these consultations was the Taro Genetic Resources: Conservation and Utilisation (TaroGen) Project.

The goal of TaroGen is to improve food security and rural incomes in PICs through support to regional taro improvement programmes and the conservation of taro genetic resources.

The project has three objectives:

- to describe and conserve the majority of taro genetic diversity in the Pacific region;
- to provide farmers in PICs with taro varieties that have improved resistance to TLB; and
- to provide support to implementing agencies so they can effectively and efficiently manage the project.

TaroGen is funded by the Australian Government through AusAID and is implemented by SPC in collaboration with IPGRI, the National Agriculture Research Institute (NARI) in Papua New Guinea (PNG) and the University of the South Pacific (USP) in Samoa. It represents a network of Pacific island countries, universities and research institutions and regional and international organisations.

TaroGen provides support to breeding programmes in PNG and Samoa and aims to provide growers in the region with improved varieties to overcome production constraints. The project has been particularly innovative in its approach to breeding and has actively involved farmers and students in the breeding process through the promotion of farmer groups, university breeders clubs and taro diversity fairs. In addition, the project is supporting taro collection and conservation in the region for current and future needs and aims to develop a complementary conservation strategy for taro germplasm utilising appropriate ex situ and in situ strategies.

Further information

Danny Hunter is an AgREN member and is the Team Leader of the TaroGen project. The project produces a bi-monthly report on activities. For further information please refer to the TaroGen website or contact the Team Leader at:

AusAID/SPC Taro Genetic Resources: Conservation and Utilisation Project
The Secretariat of the Pacific Community
Private Mail Bag, Suva, Fiji
Tel: (679) 370 733, Fax: (679) 370 021
Website: http://www.users.bigpond.net.au/grahame/

Contributions to the AgREN Newsletter

AgREN members are invited to write a short article for the next edition of the Newsletter. Submissions should be between 300 and 800 words and relate to any aspect of your work in which other members may be interested. We would also be pleased to receive electronic versions of photographs which may accompany your article. These should have a minimum resolution of 200 dpi.

If you would like to submit an article or announcement for inclusion in the next AgREN Newsletter please send it by email to: agren@odi.org.uk, or on a 3½” disk in Word format to: The AgREN Coordinator, ODI, 111 Westminster Bridge Road, London SE1 7JD, UK, to arrive by 16 November 2001. Please include your full contact details for publication with your item.
Websites

Noragric (http://www.nlh.no/noragric)
Noragric is the Agricultural University of Norway’s (NLH) Centre for International Environment and Development Studies. Its core activities include the Drylands Coordination Group and information dissemination.

Drylands Coordination Group
Noragric hosts the secretariat and plays a supporting technical role for the Drylands Coordination Group (DCG) which consists of six Norwegian non-governmental organisations involved in development cooperation (related to natural resource management and food security) in dryland areas. The DCG cooperates with African organisations in four countries (Eritrea, Ethiopia, Mali and Sudan). See: http://www.drylands-group.org

Information dissemination
Noragric’s library supplements the NLH library with a special collection on agriculture and natural resource management in the tropics. The library catalogue is searchable on the BIBSYS database shared by all Norwegian university libraries, most regional colleges and a variety of other research libraries. It also cooperates closely with other Norwegian, Nordic and European libraries through a range of professional networks.

Further dissemination of information and research results is done through publications (Reports, Working Papers, PhD and MSc theses), articles in scientific journals and in joint publications. Noragric also coordinates the website for the Norwegian Forum for Agricultural Development Cooperation (http://www.agronor.org).

InfoAgrar (http://www.infoagrar.ch)
InfoAgrar is the agricultural information and documentation service of the Swiss Agency for Development and Cooperation (SDC). Its aim is to facilitate access to relevant information, based on the needs of professionals dealing with agricultural issues in international development cooperation. The focus is on information related to agriculture in Africa, Latin and Central America, Asia, and Eastern Europe. The target public of InfoAgrar’s services are members of staff within SDC and its partner organisations, both in Switzerland and abroad. InfoAgrar also responds to the needs of other public sector institutions, NGOs, the broader public, and private businesses that are involved in international agricultural development. InfoAgrar is located at the Swiss College of Agriculture (SCA) in Zollikofen, Switzerland.

New Agriculturist online (http://www.new-agri.co.uk/)
New Agriculturist is a bi-monthly e-journal devoted to farming and food production and processing. It provides a digest of topical information with an emphasis on the tropics and sub-topics, with connections to sites where more detailed information is available.

The magazine is written, compiled and designed by the WREN media team who were responsible for producing the weekly ‘Farming World’ programme for the BBC World Service and whose Agfax radio and press service is used by broadcasters and newspaper editors in Africa, Asia and Europe. It has been online since January 1998 and is currently sponsored by the UK Department for International Development (DFID) and The Technical Centre for Agricultural and Rural Cooperation (CTA).

New Agriculturist is written to appeal to a wide audience including those working in international organizations, universities, technical specialists and anyone with a general interest in agriculture. The editorial team encourages the submission of regional news items and articles from its readers and is establishing a network of contributing journalists from developing countries.

Readers in over 100 countries access New Agriculturist. During each edition there are over 8,000 distinct hosts requesting pages which indicates a readership of over 10,000. A recent analysis of the website statistics has shown that many readers are accessing back issues as well as the current edition.

AgREN (http://www.odi.org.uk/agren/)
The AgREN website contains a full list of network papers together with details of how to join, the benefits of membership, how to submit material for publication, and contact details for network personnel. Back issues of papers dating back to July 1999 are available on this site.

The site links to the home page of ODI’s Rural Policy and Environment Group, which gives details of Research Fellows’ areas of interest and current research activities.

Note from author

AgREN paper no. 109 (January 2001) on Mozambique, by H. Gemo and W. M. Rivera, should have mentioned that the origin for the paper was the result of a joint FAO/World Bank mission to Mozambique organized by Messrs. David Neilson of the World Bank and L. Van Crowder of the FAO. The mission team consisted of L. Van Crowder and William M. Rivera. The team worked closely with the DNER (National Direction for Rural Extension) staff and in particular with the first author, Helder Gemo, as well as with the World Bank, FAO, and other international personnel in Maputo.
This long-term practice and theoretical understanding innovate and solve their problems in a creative way. Building their own individual and institutional capacity to manage their resources and facilitate others, people managed to learn to manage natural resources more effectively. The learning process in natural resource management in Zimbabwe is described and analysed in a long-term action research project.

Please contact Karim Hussein, Research Fellow, RPEG, ODI for details on how to obtain a copy (k.hussein@odi.org.uk). A limited number of copies will be made available free of charge to Southern AgREN members.

New Book on Seed System Development
The Overseas Development Institute announces the publication of a new book on seed systems, Seed Provision and Agricultural Development: The Institutions of Rural Change, by Robert Tripp. The book uses some of the insights of new institutional economics and economic sociology to examine how the management of information, the availability of incentives, and the growth of social networks help determine seed system development. The book examines local-level seed provision, the emergence of commercial seed trade, the various roles of the state in seed provision, and the performance of recent donor seed projects. The book is published in the UK by James Currey and is available for £14.95 from ODI. Twenty-five free copies of the book are available for AgREN members in the South who are working on seed-related issues. Any AgREN member who would like a copy of the book should send a request to The AgREN Administrator, ODI, 111 Westminster Bridge Road, London SE1 7JD, UK, (email: agren@odi.org.uk) by 30 October. If there are more than 25 requests, the books will be allocated by a random drawing from those requests received by 30 October.

Learning Together for Change: Facilitating innovation in natural resource management through learning process approaches in rural livelihoods in Zimbabwe
by Jürgen Hagmann
DEM 50,- / EUR 25.60
This book describes and analyses a long-term action learning process in natural resource management in Zimbabwe. Through a process of joint learning of local people and facilitating outsiders, people managed to build their own individual and institutional capacity to innovate and solve their problems in a creative way. This long-term practice and theoretical understanding in learning process approaches was conceptualised in a theoretical framework for interdisciplinary, participatory research and extension in natural resource management applicable in many situations. The most important insight in this book is the lively demonstration that smallholder farms in Zimbabwe follow a value-driven logic, based on social and cultural values and norms which in most cases outweighs the economic rationale in decision making. Thus, innovation processes proved to depend more on the social and organisational capacity to innovate than on economic profitability considerations. Facilitating effective innovation processes thus needs to focus on negotiation of socio-political interests and on organisational development of people’s institutions and organisations. An effective vehicle for such capacity building development has proven to be the joint development of technical and social innovations by local people with the external agents, based on a synthesis of indigenous and scientific knowledge. Experiential and discovery learning have demonstrated their potential in supporting this process and strengthening rural people’s confidence in their own solutions - the key to self-development. The lessons learnt and the approach for participatory research and extension demonstrated in this book are relevant to most rural development interventions aiming at better natural resource management. This work is a living example of interdisciplinary participatory action research guided by the synthesis of theory and practice. For further information please contact:
Margraf Verlag,
P.O. Box 1205,
D-97985 Weikersheim,
Germany
Tel: +49-(0)79 34-30 71,
Fax: +49-(0)79 34-81 56
email: margraf@compuserve.com

IIED Gatekeeper series and case studies
The following papers have recently been published by IIED as part of its Gatekeeper series
These papers are available for downloading from the IIED website at: http://www.iied.org/agri/gatekeep.html. They may also be purchased from the IIED Bookshop, 3 Endsleigh Street, London WC1H 0DD, UK.

Also published by IIED are two country case studies from its ‘Policies that work for sustainable agriculture and regenerated rural economies’ project (India Tamil Nadu and Thailand):

Material relating to this project is available to download from http://www.iied.org/agri/proj_ptw.html. A further seven case studies, an overview and a think piece will be published this year.

**IIRR Courses**

**Rural Development Management, August 13 – September 7, 2001**
For senior and mid-level development managers. This course is offered twice a year; it covers development issues, managing sustainable and people-centered development programmes and managing a development organisation. It addresses aspects of project planning, implementation and evaluation. Participants are introduced to real experiences in rural development. The course is built around observations of village-level projects in the Philippines.

**Farmer-led Extension, October 8 – 26, 2001**
Designed for rural development extension executives, officers, and specialists. Participants review and present various approaches in agricultural extension and analyse them from the perspectives of both farmers and development workers. Strategies and methods used in farmer-led extension are examined to develop field validated and recommended strategies. It attempts to scale up these approaches and identify prerequisites at the organisational and structural levels.

**Food Security: Lessons from the Field, November 19 – December 7, 2001**
Designed for coordinators of food security programmes. The course will focus on field experiences and will highlight participatory approaches in implementing food security programmes. Participants will discuss current food security issues, policies and trends. They will review and compare various strategies and approaches used in addressing food insecurity. The course will provide the opportunity for participants to prepare action plans that their organisations can implement to improve existing programs or pursue new interventions toward more effective food security programs.

**Community-based Integrated Watershed Management, November 26 – December 14, 2001**
This course is recommended for planners, field staff, technicians and others working in rural development, with government and nongovernment, religious and parastatal organisations who have to tackle problems of food security, water resources management, sustainable agriculture and natural resources management. The training is designed to expose participants to the concepts and strategies for planning, implementing, monitoring and evaluating watershed development projects in partnership with local communities. Watershed management is a new approach on how technologies can be integrated within the natural boundaries of a drainage area (called the ‘watershed’) for optimum development of land, water and plant resources to meet the basic needs of the people and animals in a sustainable manner.

Upon request, IIRR also organises training programmes such as workshops and work-study programmes that are more content-specific to fit the needs of a certain development organisation. These customised courses can be conducted at its Yen Center campus in Silang, elsewhere in the Philippines or overseas. IIRR also organises and is the pioneer of the ‘writeshop’, a process of producing a publication by various stakeholders through mutual learning about a particular development theme.

For registration or for more information, please contact:
Education and Training Program
International Institute of Rural Reconstruction
Y.C. James Yen Center,
Silang 4118,
Cavite, Philippines,
Telefax: (63-46) 4142423
Tel: (63-46) 4142417
Fax: (63-46) 4142420
Email: Education&Training@iirr.org
Website (still to be launched): www.iirr.org

**Imperial College at Wye**

On 1 August 2000 Wye College merged with Imperial College of Science, Technology and Medicine. Wye College’s mission, international reputation and expertise continue within Imperial College, and on 1 May 2001 a new Department of Agricultural Sciences was established within Imperial College, based at Wye. Wye’s postgraduate programmes in natural and social sciences now include a wider range of courses with more flexible study options suitable for aspiring professionals working in agricultural and rural development.

Social science programmes include an integrated suite of distance learning and residential degrees in applied environmental and agricultural economics and related subjects such as Food Industry Management and Marketing, Agribusiness Management, and Economics of Rural Change. These offer both specialist options and a wide choice of component courses across degrees. Study at Wye is supported by student access to high quality distance learning materials for independent study.

Other programmes of full time study at Wye are in Environmental Management (with specialisms in Applied Environmental Science, Landscape Ecology and Management, and Rural Environmental Policy) and in Sustainable Agriculture and Rural Development (with specialisms in Agro biodiversity, Agroecology, and Production in Tropical Environments).

A new distance learning programme in Biodiversity Conservation has been launched this year, to join existing programmes in Environmental Assessment, Environment and Development, Environmental Management, and Sustainable Agriculture and Rural Development.

For further information on full-time programmes please contact: Admissions, Imperial College, London SW 2AZ, UK. (+44) (0) 20 7594 2617, email: admissions@ic.ac.uk, website: http://www.wye.ic.ac.uk. For information on distance learning please contact:
The African Conservation Tillage Network (ACT)

ACT believes the adaptation and adoption of conservation tillage principles and practices could dramatically reduce, and in many instances reverse, the environmental degradation ravaging Africa. If you wish to subscribe to ACT NOW! please send an email to actnownews@africa.com, inserting SUBSCRIBE ACT NOW! in the subject line, and including in the body of the email your and your organisation’s name, the country in which you operate/reside, and your e-mail address.

News related to the above topics should also be sent to the above address. Membership and other information on ACT can be obtained from the ACT Secretariat at actsecretariat@africanafricaonline.co.zw or from the ACT website at www.fao.org/act-network.

Call for projects
Fondo Mink’a de Chorlaví is a Competitive Grant Fund supported by IDRC, Canada, and ICCO, The Netherlands. The Fund has issued its Call for Projects 2001, for development-oriented research and action-research proposals on the topic ‘Collective Action and Improvements in the Living Conditions of Rural People’. The projects must be carried out in Latin America and the Caribbean. The average grant per project will be or around US$ 20,000. For further information please refer to the website www.FondoMinkaChorlavi.org or email rimisp@rimisp.cl.

Meeting of Innovation and Knowledge Against Rural Poverty
FIDAMERICA is a Latin American network of rural poverty alleviation projects. It’s Meeting of Innovation and Knowledge Against Rural Poverty will take place in Managua, Nicaragua, September 25–27, 2001. Concrete experiences from several dozen development projects from most Latin American countries will be presented at the meeting, covering such topics as microcredit, application of gender approaches in poverty alleviation, poor farmers’ and markets, participatory M&E, etc. For further information please see the FIDAMERICA website: www.fidamerica.cl or send and email to rimisp@rimisp.cl.
Guidelines for contributions to AgREN publications

AgREN members and others are encouraged to submit material for publication in both the Newsletter and as Network Papers. The type of material that is most suitable for submission is described below. Articles submitted as potential Network Papers will be assessed by an Editorial Committee and, where necessary, guidance will be given to authors in revising their papers for publication.

a) Newsletter Contributions: AgREN welcomes news from members that describes their work relating to the development of small-scale agriculture and sustainable rural livelihoods. AgREN would particularly like to hear about specific, ongoing projects which are particularly innovative or other activities of interest to AgREN members. Contributions to the newsletter should be no more than a single page, and may include photographs or illustrations. Shorter contributions are also appropriate.

b) Network Papers: AgREN Papers are broadly concerned with the design and promotion of appropriate agricultural technologies, with specific attention focused on the methods, processes, institutions and policies that promote pro-poor technical change and support equitable improvements in agriculture for developing countries. The principal focus of AgREN Papers should be adaptive research, extension or supporting mechanisms such as credit, marketing and producer organisations. Network Papers should seek to explore and promote the role of increasing agricultural productivity, resource conservation and farmer empowerment in the context of diversified rural livelihoods.

Content:
- Papers should focus on practical experience in research and extension methods as well as innovations in the public or private provision of other agricultural services
- Papers may make reference to current theoretical issues in the field of rural development, but their principal focus should be on the provision of well-written descriptions of practical and innovative experience that will be of use to other practitioners.
- Although AgREN has an interest in novel diagnostic and evaluation methods that help practitioners understand farmers’ priorities and contexts, papers that follow through on such diagnosis and illustrate applications and outcomes are particularly welcome.
- Papers may be based on a broad range of sectors relating to agriculture, e.g. crop and livestock production, aquaculture, agroforestry, extension, natural resource use, environmental management, credit supply and marketing.
- Most AgREN papers describe an experience from a particular time and location, but they are written in such a way that practitioners on other areas can draw useful implications.

Word length and referencing:
- Network Papers should be between 6,000 and 12,000 words long, and include an abstract of 500–750 words highlighting research findings and policy implications. References should follow the examples below.
  - Books:
  - Journal articles:

Other information:
- Material submitted to the Network will be considered for publication on the understanding that is has not been submitted elsewhere.
- Material published by AgREN may, with acknowledgement to ODI, subsequently be published elsewhere.
- Contributors will be asked to sign a form transferring copyright for published material to ODI. This enables us to give others permission to photocopy Network material.
- Papers should be submitted both in hard copy and on 3½” disk or by email, in one of the widely used word-processing packages.
- All material should be submitted to the Network Coordinator at the address given below:
Papers with this issue

113. Farmers’ access to natural pest control products: experience from an IPM project in India – Robert Tripp and Arif Ali


115. Supporting local seed systems in southern Somalia: A developmental approach to agricultural rehabilitation in emergency situations – Catherine Longley, Richard Jones, Mohamed Hussein Ahmed and Patrick Audi

116. Dilemmas of agricultural extension in Pakistan: Food for thought – Andrew P. Davidson, Munir Ahmad and Tanvir Ali