GATEKEEPER SERIES No. 43

International Institute for Environment and Development

Sustainable Agriculture and Rural Livelihoods Programme

From Research to Innovation:

Getting the Most from Interaction with NGOs in Farming Systems Research and Extension

JOHN FARRINGTON
ANTONY BABBINGTON

This Gatekeeper Series is produced by the International Institute for Environment and Development to highlight key topics in the field of sustainable agriculture. Each paper reviews a selected issue of contemporary importance and draws preliminary conclusions of relevance to development activities. References are provided to important sources and background material.

The Swedish International Development Authority (SIDA) funds the series, which is aimed especially at the field staff, researchers and decision makers of such agencies.

John Farrington is a Research Fellow and Anthony J. Bebbington is a Research Fellow and Coordinator of the Agricultural Research and Extension Network at the Overseas Development Institute, Regent's College, Regent's Park, London NW1 4NS. An earlier version of this paper was presented at the joint IIED/IDS 'Beyond Farmer First: Rural People's Knowledge, Agricultural Research and Extension Practice' workshop, Institute of Development Studies, University of Sussex, October 27–29, 1992.

FROM RESEARCH TO INNOVATION: GETTING THE MOST FROM INTERACTION WITH NGOS IN FARMING SYSTEMS RESEARCH AND EXTENSION

John Farrington and Antony Babbington

Introduction

Over recent years, many people have suggested that agricultural and rural development strategies would benefit from increased collaboration between government and non-governmental development organisations, hereafter called GOs and NGOs respectively (Carroll, 1992; de Janvry et al., 1989; Jordan, 1989; Korten, 1987). Donors, in particular, have begun to call for more NGO involvement in programmes that have traditionally been implemented through the public sector (World Bank, 1991a, b; Farnworth, 1991).

These advocates of closer NGO-GO collaboration have tended to under-emphasise:

- the wide range of interaction that currently exists – not all of it collaborative: much involves pressure by one side or the other;
- the limitations facing efforts to work together;
- the preconditions for successful collaboration; in particular, the prior informal contacts necessary to build up mutual trust;
- the limitations as well as the successes of NGO action; and
- the extent to which certain functions will remain more cost-effectively performed by the public sector than by NGOs. Analysis of how GOs might work with NGOs must be accompanied by continuing attention to ways of improving public sector management, an area in which structural adjustment reforms have not had the success expected.

It is also important to note that these calls for collaboration come from different points across the ideological spectrum, including NGO activists (Clark, 1991; Jordan, 1989), radical economists (de Janvry et al., 1989), and multilateral institutions. This may be cause for celebration; but it is also cause for circumspection. It suggests that different actors are seeking differing outcomes of such collaboration, and have divergent views on how much responsibility the state ought to continue to assume, and which subsidies to which social groups ought to be maintained.

This paper draws preliminary findings from a study across Africa, Asia and Latin America of the potential for closer links between NGOs and government agricultural research and extension services in the development and dissemination of agriculture-related technologies and management practices. Whilst at a practical level concerned with the functions that the respective organisations might jointly or separately undertake, the study also sought to locate potential actions in the wider political and economic context in order to prevent attempts to generalise 'success stories' into inappropriate contexts. The central methodology of the study was to generate a substantial number (over 70) of case studies prepared in collaboration with the NGO or government practitioners who had been involved in them. These were supplemented by country or area-based overviews of wider NGO-state relations.

Features of the NGOs Studied

Our concern is mainly with the stronger of the South-based NGOs that provide services either directly to the rural poor or to grassroots membership organisations, although examples are also drawn from some North-based NGOs, and from some of their offices located in the South which operate with varying degrees of autonomy. Most of the NGOs considered pursue livelihood enhancement in a participatory fashion and in the context of wider value-driven objectives including group formation and conscientisation. However, a wide range of NGO philosophies and approaches do exist, including some that are 'top-down' and those which have become narrowly tied to government contracts for service delivery.

Our particular interest in the more empowering approaches has been in their objective of setting up local institutions and mechanisms capable of sustaining processes of innovation - either within communities themselves, or through a capacity for 'demand-pull' on government services. In addition, the potential of these approaches within and beyond the context of agriculture for generating institutional pluralism and so strengthening democratic processes has not gone unnoticed (Clark, 1991; Lehmann, 1990).

The origins of NGOs vary widely, and are likely to have a strong bearing on the type and extent of potential NGO-GO collaboration. Some were formed in opposition to governments which discriminated against the rural poor, others as a reaction to government support for, or indifference to, prevailing patterns of corruption, patronage or authoritarianism.

Many NGOs were formed by left-leaning professionals formerly employed in universities or in the public sector. Their intellectual calibre has generally been high, but they were often socially and ethnically distinct from the rural poor. In the early stages of their formation, almost all NGOs were characterised by small size, institutional flexibility, horizontal structure and short lines of communication. Many have found these characteristics conducive to a quick response to clients' needs and to changing circumstances and a work ethic conducive to generating sustainable processes and impacts, and so have sought to retain them well beyond the initial establishment period. But the

smallness and the political origins and orientation of NGOs are also their 'Achilles' heel' since:

(i) NGO projects rarely address wider scale structural factors that underlie rural poverty;

(ii) NGOs have limited capacities for agricultural technology development and dissemination, and limited awareness of how to create effective demand-pull on government research services; and

(iii) the activities of different NGOs remain uncoordinated, and information exchange is poor especially among small NGOs where transaction costs are high.

These strengths and weaknesses of NGOs, and their implications for NGO-GO relations, are discussed in more detail below, and illustrated by examples from Africa, Asia and Latin America.

Successes and Failures of NGO Technology Development

There are five main areas in which NGOs have been innovative and relatively successful.

Diagnostic and Technology Development Methods

Conventional public sector approaches to agricultural technology development have difficulty in coping with the wide range of agro-ecological and socio-economic conditions characteristic of the complex, diverse and risk-prone areas in which many of the rural poor live (Chambers et al., 1989; Richards, 1985). In such areas, agricultural technology development must not merely be on-farm and farmer-managed, but participatory in order to draw on local knowledge and to meet farmers' needs, opportunities, constraints and aspirations. The approaches introduced in GOs have frequently been expensive and time consuming, and often not participatory (Biggs, 1989a). Some NGOs, on the other hand, have been innovative in developing more parsimonious approaches.

For instance:

- In Kenya, the Diagnosis and Design methodology practised by ICRAF partly grew out of the development of methods by CARE and Mazingira in the early 1980s to elicit rapid farmer assessment of tree species (Buck, 1993).

- In Chile, NGOs were responsible for the elaboration of farming systems perspectives, and their subsequent teaching to other institutions (Sotomayor, 1991).

- In India, Myrada has been instrumental in developing participatory rapid appraisal methods and training for both other NGOs and government staff in their implementation (Fernandez, 1993; Mascarenhas et al. 1991).

NGOs have also introduced systems approaches to agricultural technology development which go beyond conventional FSR. First, several have used food systems perspectives. For instance, in Chile, AGRARIA is experimenting with means of commercialising small farmer grain, which a government department is now considering scaling up (Aguirre and Namdar-Irani, 1992).

- In Bangladesh, some 1000 ha of soya production is now based on varietal, processing and market research conducted by the Mennonite Central Committee (Buckland and Graham, 1990).

- In the Gambia, production of sesame introduced by Catholic Relief Services at its peak reached 8000 ha owing in part to the simultaneous introduction of oil extraction technology (Gilbert, 1990).

NGOs have also been instrumental in introducing a social organisational and management dimension into the testing and subsequent adoption of certain technologies, which government services typically find difficult to introduce. For instance:

- In India, Action for World Solidarity and a consortium of GROs in Andhra Pradesh devised a strategy for integrated pest management of *Amsacta* caterpillars on castor together with government research institutes, and then helped to organise farmers to take certain action simultaneously in order to achieve maximum impact (Satish et al., 1993).

- In the Gambia, and Ethiopia, NGOs have helped farmers to organise local informal seed production in ways designed to avoid undesirable cross-pollination (Henderson and Singh, 1990).

- In Bangladesh, NGOs have helped to organise landless labourers to acquire and operate 'lumpy' irrigation technology (Mustafa et al., 1993), and have organised groups (mainly of women) to interact both among themselves and with government services in chicken rearing (Khan et al., 1993).

Innovations in Technologies and Management Practices

While funding constraints make long-term agricultural technology development difficult for NGOs, several have done work which has had far-reaching implications. For instance:

- In India, the Bharatiya Agro-Industries Foundation pioneered research into frozen semen technology in India, and, through its 500 field programmes in six states, has been responsible for producing around 10% of the country's cross-bred dairy herd.

- Similarly, the Southern Mindanao Baptist Rural Life Centre (Philippines) has identified integrated methods of managing hillslopes using Sloping Agricultural Land Technologies (Watson and Laquihon, 1993).

Most NGO research efforts are, however, at the adaptive end of the spectrum. For instance:

- In India, PRADAN has scaled down technologies developed by government institutes for mushroom and raw silk production, and for leather processing and, in the case of the latter, has devised integrated schemes of credit and marketing (Vasimalai, 1993).

- In East Africa, NGOs have been testing new crop varieties in Zambia and in Zimbabwe, and have been adapting tree management practices in Zimbabwe, and Kenya (Copestake, 1990; Mung'ala and Arum, 1991; Ndiweni et al., 1991).

Dissemination Methods

In general NGOs have sought to develop participatory dissemination methods. For instance:

- In Thailand, the Appropriate Technology Association developed farmer-to-farmer methods of disseminating rice-fish farming technologies which have subsequently been adapted by the Department of Agriculture (Sollows et al. 1991).

- In Ecuador, CESA has developed systems for farmer-managed seed multiplication and distribution (CESA, 1991).

Training Activities and Methods

A number of NGOs train both members of other NGOs and of GOs in participatory methods (Fernandez, 1993; Chakraborty et al., 1993; Berdegue, 1990). A recently emerging role for NGOs is that of intermediary. For instance:

- In Gujarat, India, the Aga Khan Rural Support Project (AKRSP) identified village training needs through discussions with farmer groups (Shah and Mane, 1993). Initially, AKSRP organised government provision of this training, but the courses were formal in style (lectures in a classroom), and farmers' evaluations showed that they had learned little of practical value from them. In response, AKRSP developed an alternative training and dissemination methodology which it tested over several areas. Government staff were then brought in to observe, participate in and, finally, adopt the methodology. Successful adoption was reinforced by informal networks, and exchange of experience at workshops and consultations.

- In a different context, the International Institute for Rural Reconstruction in the Philippines brought together resource people from NGOs and GOs at a one-week workshop, the objective of which was to produce a completed *Agroforestry Resources*

Training Manual. The manual is now widely used (Gonslaves and Miclat-Teves, 1993).

Promoting Farmer Organisations

For many NGOs, to strengthen participation means to work in strengthening peasant organisations and in popular education, enhancing the rural poor's capacities for self-management and negotiation with government, external institutions and dominant interest groups.

NGOs have therefore emphasised project methodologies and actions that contribute to strengthening the co-ordination among individual producers, and subsequently among communities. Seed and input distribution systems, small scale irrigation and work with farmer groups in on-farm trials have thus become priority areas of action. In many cases such a combination of productive and organisational initiatives can increase the impact of the project and strengthen the organisation simultaneously. The ultimate aim is to establish financially and administratively self-sustaining organisations. Although NGOs' contributions to the formation of farmer organisations have not always matched their rhetoric, most experience in linking agricultural development projects with organisational strengthening has been gained in the NGO sector.

The abilities and experiences of NGOs in each of these areas suggest contributions NGOs could make to wider public sector programmes. These are considered later but first it is important to recognise that NGOs also suffer from a variety of limitations:

- their small size and limited resources limit NGO activity to the applied end of the agricultural technology development spectrum;

- funding patterns tend to be short-term and pressure from funding agencies is towards 'action' and 'results', thus hampering work on issues requiring long-term R&D;

- small size combined with poor co-ordination among NGOs makes it difficult for effective two-way links to be established between them and government research services.

Kohl (1991) documents a case of NGO failure in technology introduction which illustrates many of these weaknesses:

Over the last decade some 50 Bolivian NGOs have introduced protected horticultural systems (PHS) in the high Andes in an attempt both to avoid climatological constraints and to meet nutritional needs. Few NGOs had conducted serious experimentation on PHS (and there is little available from public sector research on which they might draw); that the few conducting experimentation have not done so rigorously; that a 'folklore' of the supposed advantages of PHS has developed; that communication flows among NGOs regarding the outcome of PHS implementation have been inadequate, and that the rapid implementation of technologies easily visible from main roads implicitly encouraged by donors and by

NGOs' own philosophy has led to premature introduction of unproven designs and management systems, and to a neglect of farmers' objectives and constraints.

Potential Public Sector Contributions to Enhance NGO Effectiveness

The weaknesses outlined above suggest three general ways in which government programmes and initiatives could enhance NGO effectiveness:

Public Sector Commitment Towards the Rural Poor

Whilst NGOs may grow in size and number to fill 'gaps' left by government, they will not be able to substitute for all the services that might normally be expected from government in all of the areas. Their efforts are likely to be more focused and defective where government makes a clear policy commitment to remove economic distortions against the rural sector and provides the physical infrastructure (roads; telecommunications) and human capital formation which NGOs cannot provide in more than a piecemeal fashion. Policies of this kind are also a prerequisite to the establishment of inter-institutional links between NGOs and GOs.

Easing Access to Resources and Information Controlled by the Public Sector

In a recent meeting, Asian NGOs expressed their need, first, to access the skills, facilities, genetic material, and specialist knowledge of government services and, second, to have the opportunity to influence government policies and strategies at the design stage. Large NGOs acting in consortium have occasionally persuaded government to cater to their needs, but simply to garner information on government plans, let alone influence them, is generally beyond the resources of smaller NGOs. To address such obstacles, NGO desks have been created in some Philippine line departments in order to elicit NGOs' views on draft plans and to cater to NGO enquiries (Ganapin, 1993).

Fostering Greater Grassroots Influence over NGOs

A recurrent and widely voiced criticism is that NGOs' rhetoric on participation exceeds reality. NGOs are self-appointed, rather than elected bodies, and control institutional resources from within.

The 'non-representativeness' of NGOs offers those governments – particularly the nominally democratic – the excuse of not working with any whose views they find uncomfortable. NGOs can attempt to safeguard against this in two ways: first, by stimulating transparent participation by the rural poor in decisions on strategy and resource-allocation; second, by instituting more thorough processes of internal monitoring and evaluation involving in-depth consultation with their clients.

Governments also have a contribution to make here: they might best enhance NGO accountability to the rural poor indirectly, particularly by supporting broad-based educational programmes in rural areas – perhaps the most important single factor facilitating increased assertiveness and modern forms of self-organisation among the rural poor.

Obstacles to Closer Links Within and Beyond the Public Sector

The Current NARSs Setting

Attention to NGOs as potential actors in national agricultural research and extension systems is timely in view of:

i) Increasing acceptance that 'research' as conventionally perceived in relation to national or international public sector institutions – whether on-station or on-farm – is only one of the multiple sources of innovation that generate technologies or management practices used by farmers. Others include farmers' own experimentation (often incorporating ideas and materials obtained through personal contacts), the private commercial sector, special projects (often donor-funded) of various kinds, and NGOs (Biggs, 1989b).

ii) Increasing recognition that GOs in many countries face intractable problems in the organisation and management of agricultural research. These include highly centralised structures and decision-taking procedures. Combined with rigid budgeting, delayed disbursements and the vulnerability of budgets to cut-back, these impose severe operational constraints and act as a disincentive to institutional change in many areas. Field work and regular contacts with farmers are disrupted; equipment and facilities are under-maintained; remuneration is inadequate to retain the more capable staff, and little scope exists for devising career structures and reward systems to encourage researchers' responsiveness to clients' needs.

iii) Recognition that many of these difficulties are particularly severe in small countries, and that, in addition, these face particular problems of maintaining research services of adequate minimum mass and of dealing with levels of agro-ecological and socio-economic diversity not far different from those of large countries, but with far fewer resources.

In order to counteract some of these weaknesses, government scientists should be allocating a large part of their time to the management of links with field-based agencies (such as NGOs) in order to identify farmers' requirements, field test candidate technologies locally, and obtain feedback. They should also develop links with a multiplicity of development agencies (including private commercial sector, international public sector and GOs in

neighbouring countries) in order to draw down from them technologies and ideas likely to be locally relevant.

Wider Obstacles

Even where the broad conditions for NGOs and GOs to work together are in place, several potential barriers to closer links remain to be overcome. These include:

i) Low motivation and inadequate client-orientation among GOs will make the concerns of NGOs appear irrelevant; even where these are good, the levels of resources currently being channelled into NGOs, their strong grassroots contacts and the high moral ground they occupy may all be sources of friction between GOs and NGOs. GOs are often aggrieved by NGO 'headhunting' of their staff. Aside from transaction costs this does not generate any net loss to the economy as a whole - indeed, research staff may be more productive if engaged by NGOs on issues of direct relevance to farmers – but the fact remains that rates of 'attrition' are so high in some GOs as to threaten their very existence (4).

ii) Formal links between NGOs and GOs have worked best where longstanding informal contacts facilitated through common social origins and staff transfers amongst them have existed. Each side has been less aware – and often suspicious – of the other's motives and capabilities where such informal contact is lacking.

iii) Inadequate exchange of information and coordination among NGOs themselves, lead to duplication of effort, and to competition among them for clients, including efforts to manipulate interest rates on farmer credit in order to undercut each other (Ayers, 1992). Unfortunately, whilst NGO information networks abound, their record of setting up coordinating mechanisms beyond areas of immediate concern (in specific campaigns) is poor. National NGO apex organisations tend to be weak and too distant from field issues to have credible impact, and area-based mechanisms remain few. Government involvement in setting up such mechanisms can quickly become authoritarian, but cases do exist in which local government agencies have adopted sensitive approaches. The agreement of NGOs concerned with agroforestry in South Nyanza District of Kenya to coordinate their action with local government offices is particularly noteworthy (Musyoka et al., 1991).

What Can NGOs, Research Services and Funding Agencies Do?

In many countries the potential exists for mutually beneficial links between NGOs and public sector research and extension services, though numerous obstacles also exist, and paths towards closer links have to be charted carefully.

Two forewarnings are essential: first, the prospects will vary widely among countries, according to the wider context of NGO-State relations and according to how far NGOs and Government share a common view of the future of the rural poor, and of strategies for achieving that future. Second, within countries there is a wide diversity of NGO types, and their relations with government will lie along a spectrum from outright hostility to willing collaboration. Recognition of this diversity is implicit in our continued use of the loosely positive term 'link' to describe potential modes of interaction between NGOs and GOs. 'Collaboration', by contrast, implies a high degree of mutual interdependence.

Linkages can be promoted by the following actions:

i) Efforts by GOs to keep a small percentage of their budgets (whether from central government or from externally-assisted projects) 'unallocated' to allow for rapid response to NGO requests as they arise. Needs and opportunities for potentially productive interaction often occur unexpectedly: they cannot always be held over to the next financial year. Alternatively, a percentage of staff time might be kept unallocated, and NGOs provided with the resources by their funding agencies to contract GO staff.

ii) GO and NGO staff can jointly participate in training courses (ideally led by a joint team) in the 'learning-by-doing', 'action-oriented' methods favoured by NGOs such as participatory rapid appraisal (for examples see the *RRA Notes* series published by the International Institute for Environment and Development). The relevance of these methods to individual GO staff will vary, but their capacity to consolidate farmer-oriented perspectives is important.

iii) Efforts need to be made by NGOs to interact more fully with each other than hitherto. Interaction may begin with exchanges of information and joint meetings, perhaps extending in some cases to fully collaborative projects. Most countries are characterised by large number of NGOs of varying size, and GOs may find it easier to work through effective NGO networks. Continuing attention is therefore needed to the difficult problem of area-based, or thematically-based coordinating mechanisms. However, for other tasks (e.g. identification of local opportunities and constraints requiring research) GOs' efforts will have to be location-specific so that interaction with individual NGOs and farmers will be more appropriate.

iv) Collaborative field trials quickly allow each side to work out in what tasks it will be most cost effective. Existing cases in which respective GO and NGO roles have

been worked out in field testing and feedback include those in Ecuador (Cardoso et al. 1991), but examples are few and progress is not always smooth, as the Gambia's Farmer Innovation and Technology Testing programme indicates (Cromwell and Wiggins, 1993).

v) Increased GO openness to information articulated by NGOs, whether on farmers' needs or on the outcome of field trials, implies a willingness to adapt future research agenda in response. In at least one case – i.e. in the Santa Cruz Department of Bolivia (Bojanic, 1991) – efforts have been made by a GO to institutionalise the presence not only of NGOs, but of other 'intermediate users' of GO technology, such as the private commercial sector and development projects of various kinds, in annual planning meetings.

vi) An area in which GOs can gain advantage from NGOs' work – but only if they liase cross-sectorally – lies in NGOs' capacity to address issues beyond the farm gate. Some, for instance, have been concerned with processing and marketing (Buckland and Graham, 1990; Aguirre and Namdar-Irani, 1992). Others have been concerned with the interaction between farming and wider resource-management issues, often involving common property resources such as trees (Sethna and Shah, 1993) or water (Mustafa et al. 1993).

vii) Numerous NGOs have been concerned with trees in an agroforestry context and with livestock. NGOs need public sector research support in many of these areas, but this is unlikely to be forthcoming – nor will GOs gain from NGOs much more than enhanced awareness of the issues affecting farmers – until GOs' capacity to research (and service) these areas from a systems perspective is established, which requires some prior dismantling of institutional barriers within government.

Strong potential for promoting progress lies with funding agencies. Some of the more imaginative, but small-scale, financing agencies (Ford Foundation; IDRC) have supported NGO-GO interaction in ways which allow for the diversity of NGOs, recognise their potential as 'brokers' between farmers and research services, and do so in ways sensitive to NGOs' fears of being 'co-opted' into government programmes. The funding agenda of some of the larger donors, on the other hand, remain dominated by perceptions that NGOs should occupy service delivery roles, effectively substituting for activities and interventions that conventionally lie in the domain of government. Whilst some NGOs may feel comfortable with this, many of the more innovative ones will not.

Funding for closer linkages, from whatever source, will have to be tailored to the diverse qualities that NGOs bring to analysis of small farmers' conditions, and to the development and dissemination of technologies, if valuable potential is not to be lost.

Conclusions

This paper draws on over 70 case studies from three continents of NGOs' work in agricultural technology development in order to examine actual and potential inter-institutional interactions. From such a wide range of evidence, it is striking that few cases have been identified in which:

i) NGOs have engaged over extended periods in the systematic screening, testing and dissemination of technologies.

ii) NGOs and government research and extension services have developed mutually-dependent collaborative arrangements designed to exploit functional complementarities.

We conclude that NGOs have demonstrated two major ways of contributing to inter-institutional linkages.

The first lies in the capabilities, perspectives and experiences that NGOs can offer to GOs which have some prospect of enhancing their efficiency as producers and deliverers of technologies adoptable by the rural poor. The capabilities they bring to bear in doing this derive from close knowledge of the needs and opportunities of the rural poor in relation to agricultural change, not merely in the narrow sense of crop or animal technology, but in the wider context of innovation located in systems which spatially go beyond the farm boundary to embrace the use of off-farm biomass, and sequentially go beyond farming systems into processing and marketing.

Their capabilities also derive from three further perspectives: first, the fact that their approaches are issue-led; second, that they seek to relieve constraints across a wide front (including nutrition, informal education, input supply, credit) in order to resolve these issues and, third, that at least some are aware that, contrary to the general view in the FSR/E community, marginal changes in farm productivity are insufficient to ensure the adoption of change: many of the rural poor are not committed to farming *per se*, but require cash incomes to purchase a stake in non-farming futures, including education for their children.

Changes in NGOs' and GOs' respective roles and in the interactions between them that might be expected if the public sector is to respond to what NGOs have to offer include the following:

1. Functional Research-Extension-Feedback Links

Those NGOs comfortable with the role of providing services under contract to the State are likely to supplement or replace dwindling extension services, delivering technologies provided by government, performing according to quantifiable norms, and providing feedback. Rapidly expanding donor support for quasi-commercial 'opportunist' NGOs of this kind seems set to ensure major growth of this type of interaction. Although these

NGOs are among the most innovative, their contact with the grassroots may allow them to bring GOs' activities closer to the needs of the rural poor, particularly if they serve to strengthen feedback.

2. Training in Participatory Methods

Numerous cases have been reported in which GOs learn from the diagnostic methods widely used by NGOs (e.g. participatory rural appraisal), both informally and through training courses. The increasing popularity of these methods, and their adaptation to a wider range of tasks (including monitoring and evaluation) suggests the scope for wider NGO-GO interaction in their future development and application.

3. Contracting of GO Researchers' Time by NGOs

Only one example has been documented of an NGO which has been granted funds to hire in staff from a severely underfunded GO research station in order to examine technical issues encountered in the course of its work (Hanvey et al., 1992). However, the approach has obvious advantages in terms of increasing resource-flows to the public sector and ensuring that research is client-oriented. It also has clear parallels with the commissioning of research financed by organisations of medium/large-scale producers such as is widespread in Latin America. Our hunch is that this type of interaction will increase, particularly since it can potentially be carried forward by the grassroots organisations that many NGOs seek to foster.

4. Other Emerging Roles

Many NGOs see GOs' research agenda as currently of limited relevance to their clients. If mutual confidence between NGOs and GOs grows (or, perhaps more likely, if funding agencies force the pace of interaction) a stronger array of more diverse channels through which NGOs make known their (and, by extension, farmers') views on future research requirements is likely to emerge. These possibilities range from informal conversations and joint field visits, through more formal feedback on GO technologies that NGOs have sought to promote, to formal representation by NGOs (and, ultimately, by farmers' associations) on the governing bodies and research planning committees of GOs.

The second major contribution that NGOs have made to inter-institutional linkages lies in the support they have given to local, grassroots/membership organisations of the rural poor. At first sight, this interest relates, at best, indirectly to NGO-GO relations, but it lays several claims to our attention:

- first, the fostering of local membership organisations to take over many of the functions currently performed by NGOs is found in the rhetoric of practically all.

- second, the rate at which these develop will inevitably depend partly on wider conditions such as the provision of rural education. But those associations of small farmers, processors, landless irrigators and landless livestock keepers which do emerge offer the prospect of facilitating direct links between researchers and the rural poor, and

of strengthening the capacity of the latter for exerting a demand-pull on research agenda including, as noted above, representation on official bodies governing research resource allocations.

- third, a less ambitious form of social organisation than that needed for the establishment of producers' associations is the formation of groups around specific tasks (seed production, irrigation, integrated pest management) where coordinated action is necessary. NGO's activities in this sphere need to be examined against wider issues of the most appropriate basis for the organisation of membership organisations. Nevertheless, some expansion of NGOs' actions in these areas is to be anticipated, and can usefully be encouraged by GOs, whose own record as 'social organisers' is weak.

- fourth, NGOs are concerned to develop local capacities for experimentation which (depending on their philosophy) build solely on farmers' indigenous knowledge, or build both on this and on relevant 'outside' ideas. This strategy may contribute to rural advancement in its own right, and the capacity it creates may prove a useful independent source of innovations in the absence of useable technologies from GOs. Alternatively, given the capability and inclination of GOs to work with the rural poor, it will be a useful complement to what GOs can offer.

Many of the arguments about emerging roles and interactions discussed in this paper suggest that key liaisons could be developed with NGOs in any efforts to develop these wider brokerage functions among GOs and to relate their work more closely to the needs of the rural poor. Viewed in this context, whilst macro-economic pressures to reduce the size of the public sector are bound to remain threatening, they might also, if handled skilfully, mark the beginnings of an opportunity for GOs to intensify dialogue with NGOs in order to explore some of the ways identified above of enhancing the effectiveness of their own work.

Notes

1) The authors are particularly grateful to Elon Gilbert for comments on an earlier draft, but this does not necessarily implicate him in any of the views expressed here.

2) Conducted from the ODI Agricultural Research and Extension Network and published in 4 volumes by Routledge (Farrington and Bebbington, 1993; Farrington and Lewis, 1993; Wellard and Copestake, 1993; Bebbington et al., 1993).

3) Asia Regional Workshop on 'NGOs, renewable natural resources management and links with the public sector' held in Hyderabad, India, 16–20 September 1991.

4) It is difficult to determine what constitutes a 'reasonable' salary: the better research staff have internationally marketable skills, and yet in most countries their remuneration is linked to wider civil service conditions and, in some, remains pitifully low. This dilemma, in which any NGO-GO tensions over remuneration are only a minor component, has prompted the consideration of alternative institutional forms e.g. quasi-autonomous research 'foundations' (Coutu and O'Donnell, 1991).

References

Aguirre, F. and M. Namdar-Irani. 1992. Complementarities and tensions in AGRARIA-State relations in agricultural development: a trajectory. *Agricultural Research and Extension Network Paper* 32. Overseas Development Institute, London.

Ayers, A. 1992. Conflicts or complementarities? The State, and NGOs in the colonisation zones of San Julian and Berlin, eastern Bolivia. *Agricultural Research and Extension Network Paper* 37, Overseas Development Institute, London.

Bebbington, J., M. Prager, H. Riveros and G. Thiele. 1993. *NGOs and the State in Latin America: Rethinking Roles in Sustainable Agricultural Development.* Routledge, London.

Berdegué, J. 1990. NGOs and Farmers' Organisations in Research and Extension in Chile. *Agricultural Research and Extension Network Paper* 19. Overseas Development Institute, London.

Biggs, S.D. 1989a. Resource-Poor Farmer Participation in Research: A Synthesis of Experiences from Nine National Agricultural Research Systems. *OFCOR Comparative Study Paper 3.* International Service for National Agricultural Research, The Hague.

Biggs, S.D. 1989b. A multiple source of innovation model of agricultural research and technology promotion. *Agricultural Research and Extension Network Paper 6.* Overseas Development Institute, London.

Bojanic, A. 1991. La transferencia de tecnología en Bolivia: la marcha para llegar al modelo de usuarios intermedios. Paper presented at '*Taller Regional para América del Sur: Generación y Transferencia de Tecnología Agropecuaria; el Papel de las ONGs y el Sector Público'.* 2–7th December, 1991. Bolivia, Santa Cruz.

Buck, L. 1993. NGOs, government and agroforestry research methodology in Kenya. In: Wellard and Copestake (eds). 1993.

Buckland, J. and P. Graham. 1990. The Mennonite Central Committee's Experience in Agricultural Research and Extension in Bangladesh. *Agricultural Research and Extension Network Paper 17.* Overseas Development Institute, London.

Cardoso, V.H., C. Caso and M. Vivar. 1991. A public sector on-farm research programme's informal relationships with NGOs: the PIP's growing interest in collaboration. Paper presented at '*Taller Regional para América del Sur: Generación y Transferencia de Tecnología Agropecuaria; el Papel de las ONGs y el Sector Público',* 2–7th December, 1991. Bolivia, Santa Cruz.

Carroll, T. 1992. *Intermediate NGOs: Characteristics of Strong Performers.* Kumarian Press, West Harford.

CESA. 1991. La Relación de CESA con el Estado en la Generación y Transferencia de la Tecnología Agropecuaria. Paper presented at *'Taller Regional para América del Sur: Generación y Transferencia de Tecnología Agropecuaria; el Papel de las ONGs y el Sector Público',* 2–7th December, 1991. Bolivia, Santa Cruz.

Chambers, R., A. Pacey and L.A. Thrupp (eds). 1989. *Farmer First: Farmer Innovation and Agricultural Research.* IT Publications, London.

Chakraborty, S., B. Mandal, C. Das and S. Satish. 1993. NGOs, on-farm research and external linkages: A case of Ramakrishna Mission, Lokasiksha Parishad, Narendrapur, West Bengal. In: Farrington and Lewis (eds.) 1993.

Clark, J. 1991. *Democratizing Development. The Role of Voluntary Organisations.* Earthscan, London.

Copestake, J.G. 1990. The Scope for Collaboration between Government and Private Voluntary Organisations in Agricultural Technology Development: The Case of Zambia. *Agricultural Research and Extension Network Paper 20.* Overseas Development Institute, London.

Coutu, A. and J. O'Donnell 1991. Agricultural development foundations: a private sector innovation in improving agricultural technology systems. pp.113-124. In: Rivera W.M. and D.J. Gustafson. 1991. *Agricultural Extension: Worldwide Institutional Evolution and Forces for Change*. Elsevier, Amsterdam.

Cromwell, E.A. and S. Wiggins. 1993. *Sowing Beyond the State: NGOs and Seed Supply in Developing Countries.* Overseas Development Institute, London.

de Janvry, A., R. Marsh, D. Runsten, E. Sadoulet, and C. Zabin. 1989. Impacto de la Crisis en la Economía Campesina de América Latina y el Caribe. In F. Jordan (ed). 1989. *La Economía Campesina: Crisis, Reactivación, Políticas.* pp.91–205 Instituto Interamericano de Cooperación para la Agricultura, San José.

Farnworth, E.G. 1991. The Inter-American Development Bank's Interactions with Non-governmental Environmental Organisations. Paper presented at the Third Consultative Meeting on the Environment, Caracas 17–19th June, 1991.

Farrington J. and A.J. Bebbington. 1993. *Reluctant Partners? Non-Governmental Organisations, the State and Sustainable Agricultural Development.* Routledge, London.

Farrington, J. and D. Lewis (eds). 1993. *NGOs and the State in Asia: Rethinking Roles in Sustainable Agricultural Development.* Routledge, London.

Fernandez, A. 1993. NGOs and government: a love-hate relationship. In: Farrington and Lewis (eds). 1993.

Ganapin, D. 1993. The Philippines debt-for-nature swap programme. In: Farrington, J. and Lewis, D. (eds). 1993.

Gilbert, E. 1990. Non-Governmental Organisations and Agricultural Research: The Experience of The Gambia. *Agricultural Research and Extension Network Paper No.12.* Overseas Development Institute, London.

Gonsalves, J. and A. Miclat-Teves. 1993. Collaboration between the International Institute for Rural Reconstruction and public sector agencies in the development of natural resources technology and training materials in the Philippines. In: Farrington and Lewis (eds). 1993.

Hanvey, D.A.R., E.M. Watkin, M. Bakarr and A. Hassan-King. 1992. Environmental management programmes at Sierra Rutile Ltd. Draft. Mimeo.

Henderson, P. and R. Singh. 1990. NGO-government collaboration in seed supply: case studies from The Gambia and from Ethiopia. *Agricultural Research and Extension Network Paper.14*. Overseas Development Institute, London.

Jordan, F. (ed.). 1989. *La Economía Campesina: Crisis, Reactivación y Desarrollo.* Instituto Interamericano de Cooperación para la Agricultura, San José.

Khan, M., D.J. Lewis, Asgar Alia Sabri, and M. Shahabuddin. 1993. NGO work in livestock and social forestry technologies in Bangladesh - the case of Proshika. In: Farrington and Lewis (eds). 1993.

Kohl, B. 1991. Protected Horticultural Systems in the Bolivian Andes: A Case Study of NGOs and Inappropriate Technology. *Agricultural Research and Extension Network Paper 29*. Overseas Development Institute, London.

Korten, D. 1987. Third Generation NGO Strategies: A Key to People-Centred Development. *World Development* 15 (Supplement):145–159.

Lehmann, D. 1990. *Democracy and Development in Latin America: Economics, Politics and Religion in the Post-War Period.* Polity Press, Cambridge.

Lipton, M. (1988). The place of agricultural research in the development of sub-Saharan Africa. *World Development* 16(10):1231–1257.

Mascarenhas J, P. Shah, S. Joseph, R. Jayakaran J. Devavaram, V. Ramachandran, A. Fernandez, R.Chambers and J. Pretty. 1991. Participatory Rural Appraisal. *RRA Notes* 13:1–142.

Mung'ala, P. and G. Arum. 1991. Institutional Aspects of Environmental Research and Extension in Kenya: The Department of Forestry and Kenya Energy and Environment Organisations. *Agricultural Research and Extension Network Paper 22.* Overseas Development Institute, London.

Mustafa, S., S. Rahman and G. Sattar. 1993. Bangladesh Rural Advancement Committee's backyard poultry and landless irrigators programme. In Farrington and Lewis (eds). 1993.

Musyoka, J., R. Charles and J. Kaluli. 1991. Inter-Agency Collaboration in the Development of Agricultural Technologies at National and District Level in Kenya. *Agricultural Research and Extension Network Paper 23.* Overseas Development Institute, London.

Ndiweni, M., B. MacGarry, A. Chaguma, and D. Gumbo. 1991. Involving Farmers in Rural Technologies: Case studies in Zimbabwean NGOs'. *Agricultural Research and Extension Network Paper 25.* Overseas Development Institute, London.

Richards, P. 1985. *Indigenous Agricultural Revolution: Ecology and Food Production in West Africa.* Hutchinson, London.

Satish, S., T.J.P.S Vardhan and J. Farrington. 1993. Integrated Pest Management in Castor: A participatory programme involving NGOs, public sector research and extension agencies and farmers in Andhra Pradesh, India. In: Farrington and Lewis (eds). 1993.

Sethna A. and A. Shah. 1993. AKRSP's experience of influencing policy on wastelands development in India. In: Farrington and Lewis (eds). 1993.

Shah, P. and P.M. Mane. 1993. Networking in Participatory Training and Extension: Experiences of the Aga Khan Rural Support Programme in Gujarat State. In: Farrington and Lewis (eds). 1993.

Sollows, J., L. Jonjuabsong and Aroon Hwai-Kham. 1991. NGO-Government Interaction in Rice-Fish Farming and Other Aspects of Sustainable Agricultural Development in Thailand. *Agricultural Research and Extension Network Paper 30*. Overseas Development Institute, London.

Sotomayor, O. 1991. GIA and the new Chilean public sector: the dilemmas of successful NGO influence over the state. *Agricultural Research and Extension Network Paper 30.* Overseas Development Institute, London.

Vasimalai, M. 1993. Livelihood promotion technology for the rural poor - the case of PRADAN. In: Farrington and Lewis (eds). 1993.

Watson, H.R. and W.A. Laquihon. 1993. The Mindanao Baptist Rural Life Centre's Sloping Agricultural Land Technology (SALT) research and extension in the Philippines. In: Farrington, J. and Lewis, D. (eds). 1993.

Wellard, K. and J.G. Copestake. (eds). 1993. *Non-Governmental Organisations and the State in Africa: Rethinking Roles in Sustainable Agricultural Development.* Routledge, London.

World Bank. 1991a. *How the World Bank Works with Non-governmental Organisations.* World Bank Publications, Washington DC.

World Bank. 1991b. *World Development Report 1991: The Challenge of Development.* Oxford University Press, Oxford.

International Institute for Environment and Development

Sustainable Agriculture and Rural Livelihoods Programme

The Sustainable Agriculture and Rural Livelihoods Programme

The Sustainable Agriculture and Rural Livelihoods Programme of IIED promotes and supports the development of socially and environmentally aware agriculture through policy research, training and capacity strengthening, networking and information dissemination, and advisory services.

The Programme emphasises close collaboration and consultation with a wide range of institutions in the South. Collaborative research projects are aimed at identifying the constraints and potentials of the livelihood strategies of the Third World poor who are affected by ecological, economic and social change. These initiatives focus on the development and application of participatory approaches to research and development; resource conserving technologies and practices; collective approaches to resource management; the value of wild foods and resources; rural-urban interactions; and policies and institutions that work for sustainable agriculture.

The Programme supports the exchange of field experiences through a range of formal and informal publications, including *PLA Notes* (*Notes on Participatory Learning and Action - formerly RRA Notes*), the *IIED Participatory Methodology Series*, the *Working Paper Series*, and the *Gatekeeper Series*. It receives funding from the Swedish International Development Cooperation Agency, the British Department for International Development, the Danish Ministry of Foreign Affairs, the Swiss Agency for Development and Cooperation, and other diverse sources.

International Institute for Environment and Development
3 Endsleigh Street
London
WC1H 0DD

www.iied.org