

Farmer participation in private sector agricultural extension(1)

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Abstract

Private sector organisations are increasingly important players in the provision of agricultural extension services, as well as crop research, in the global South. It is almost two decades since a group of social science scholars and development practitioners called for a new, participatory approach to agricultural research and extension that would put the ‘farmer first’ (Chambers et al. 1989). Since then, farmer participatory approaches have been refined, developed, evaluated and critiqued, and can be seen to have influenced the practice and rhetoric of research and extension. This article examines how far these developments have shaped the behaviour of the private sector. Drawing on evidence from a case study, the article argues that the advances of the last quarter-century of thinking and experience with farmer participatory approaches have largely failed to influence the delivery of agricultural extension services to smallholder farmers by a major transnational company.

Introduction

The Monsanto Smallholder Programme (SHP) was an initiative undertaken by the transnational biotechnology, chemicals and seeds company Monsanto between 1999 and 2002. The SHP had the stated purpose of providing ‘resource poor’, ‘smallholder’ farmers with a package of agricultural extension services, including technical advice, chemicals, improved seeds and genetically modified (GM) traits, as well as other forms of support.

This article uses the case of the SHP to focus specifically on the issues of farmer participation, responsiveness and accountability, in a situation where extension services were being supplied by a transnational company that is also a major producer and marketer of herbicides as well as the dominant driver behind the development and commercialisation of genetically modified crops internationally. The paper explores how the Smallholder Programme was conceived, designed and implemented, discusses how far it was designed around and responded to farmers’ needs and priorities, and considers the extent to which farmers were able to hold the company to account.

Farmer participation in agricultural research and extension

It is two decades since the first ‘Farmer First’ workshop took place at IDS and 18 years since the publication of the landmark book with that title (Chambers et al. 1989). The book articulated a critique of the prevailing models of agricultural research and extension and documented a number of cases in which a new, participatory style of engagement with farmers had begun to emerge during the late 1970s and early 1980s. A few years later, *Beyond Farmer First* (Scoones and Thompson 1994) reaffirmed and also extended and developed the farmer first framework, focusing on the power structures that characterised the knowledge systems and institutional contexts in which agricultural research and extension was carried out.

Farmer First and *Beyond Farmer First* were interjections in a much wider stream of discussion and debate. They described, evaluated and critiqued a range of the different approaches that had begun to be experimented with, applied and documented; these included Agro-Ecosystem Analysis, Farming Systems Research and Extension, Farmer Participatory Research, Rapid and Participatory Rural Appraisal (RRA and PRA), Participatory Action Research and Participatory Technology Development.

Since the early 1990s, a great deal of further experimentation, experience, reflection and debate has occurred. Positions associated with the farmer first school – notably RRA and PRA – have themselves been challenged and criticised, prompting further restatements, adjustments and

evolutions such as Participatory Learning and Action (Buhler et al. 2002) and Institutional Learning and Change (ILAC). Another important strand of conceptual development and practical experience has evolved, in a rather separate current, around the Farmer Field School approach (FFS). FFS first emerged in 1989, originally conceived as an educational tool for promoting integrated pest management (IPM) and further developed and promoted by the UN's Food and Agriculture Organisation since then (Braun et al. 2006).

Participants in this conference will be familiar with the kinds of criticisms that were being articulated by the contributors to *Farmer First* and *Beyond Farmer First* almost 20 years ago. The shortcomings and failures they identified were exemplified by the training and visit (T&V) system, espoused by the World Bank, which epitomised the 'transfer of technology' (TOT) mode of engagement. Advocates of a more participatory mode of engagement attacked the TOT approach as being fundamentally inappropriate for the 'complex, diverse and risk-prone' agriculture practised by poor farmers in marginal and rainfed areas in developing countries.

These shortcomings had already been identified, and were increasingly widely recognised, as long ago as the late 1980s. Since then, the concept of a more participatory approach to agricultural research and extension, designed to be more responsive to the needs and priorities of small farmers, has helped to transform the policy debate about how best to organise these services over a period of two decades. And yet, the TOT mode of agricultural research and extension survived, in the T&V system, into the late 1990s, primarily because of the institutional and financial backing of the World Bank (Bauer et al. 1998; Buhler et al. 2002; Anderson et al. 2006). Nevertheless, it was eventually abandoned even by the Bank. However, as I will discuss in this paper, the TOT approach to agricultural research and extension – technology-focused, expert-driven and top-down – survives in the private sector.

The private sector in agricultural research and extension

The role of the private sector has attained a new prominence in policy debates about agricultural development in recent years. In search of affordable and effective ways to inject new energy and dynamism into agricultural extension services, various countries have explored policy options including privatisation, greater involvement of private sector service providers, and various models of cost-recovery or fee-charging; India and Pakistan are two examples (Sulaiman and Sadamate 2000; Sulaiman and Hall 2002; Anderson and Feder 2003; Davidson and Ahmad 2003; Shingi et al. 2004). As with the former T&V approach, the World Bank is a key driver of the privatisation agenda (Davidson and Ahmad 2003). In India, a number of agribusiness companies are beginning to explore the market in this area, for example Mahindra & Mahindra's *SubhLabh* Services enterprise (Sulaiman and Hall 2004).(2) But many agricultural input manufacturers and suppliers also claim to offer agricultural extension advice and support alongside the products they sell. However – as staff privately acknowledge – this advice is inflected towards their self-interest in marketing their own brands.

To some extent, private commercial provision of agricultural advice and services implies a degree of responsiveness and accountability on the part of the suppliers towards the customers. However, small and poor farmers are unlikely to exert a strong influence. This implies a limited empowerment of poor rural people to be 'users and choosers' but not necessarily 'makers and shapers' of the goods and services they receive – able to exercise a limited kind of accountability through the market but not much more than that (Cornwall and Gaventa 2001). However, in the case of the Monsanto Smallholder Programme, we see an example of a situation in which a large transnational company geared up a programme specifically targeted towards the small farmer segment of the market. The next section explores how this came about.

Monsanto and smallholder farmers

When Robert Shapiro was appointed as Monsanto's new Chief Executive Officer (CEO) in April 1995, he embarked on a programme to re-orient the company's business around 'sustainability'. He linked the urgent need to grow enough food to feed a growing population and the ecological harm that would be entailed in trying to do so with existing technologies and agricultural practices (Scott 1996; Lenzner and Uppin 1997; Magretta 1997; Shapiro 1998; Shapiro 1999). This conceptualisation of the

sustainability challenge implicitly involved the farmers and consumers of the developing world as key stakeholders and important players in fulfilling Monsanto's sustainability vision.

Shapiro established seven strategic teams to explore sustainability issues and their implications for the company's future business, including the 'Global Hunger Team' which studied 'how Monsanto might develop and deliver technologies to alleviate world hunger' (Magretta 1997:86). A 'Sustainable Development Business Sector' was established to operationalise the sustainability strategy. It included a 'Smallholder Team' which was 'charged with developing products, services and partnerships to meet the needs of rural, small-scale farmers in developing countries' (Simanis and Hart 2000:A7). Monsanto's agriculture division had already begun to focus on developing country markets in the early 1990s, towards the goal of 'transforming agriculture' in a number of developing countries, a target that became known as the 'developing country goal'.⁽⁴⁾ Developing country farmers can thus be seen to have assumed a central place in Monsanto's strategy for market development and competitiveness as well as Shapiro's vision of sustainability.

The concerns of developing countries and smallholder farmers were also among the factors that triggered the crisis which engulfed Monsanto in 1998 and 1999, when the company's plans for the commercialisation of GM crops ran into problems, especially in Europe (Simanis and Hart 2000; Charles 2001; Glover 2007). Both the consumer rejection of GM crops and the specific controversy over so-called 'terminator' sterile seed technology were linked in part to issues of international development and global hunger. For instance, activists and development campaigners raised the alarm over the possibility that terminator technology could make Third World farmers dependent on biotechnology and seed companies (e.g. Christian Aid 1999). Monsanto's advertising campaign provoked an outcry partly because it explicitly asserted the capacity of biotechnology to 'feed the world' (Simanis and Hart 2000; Charles 2001).

While these development controversies helped to trigger the backlash against biotechnology, the image of smallholders and developing country agriculture were also invoked by Monsanto as part of its strategy for tackling the crisis. There were two important reasons for this. With Monsanto's progress in European markets stalled, developing country markets took on greater significance; the company urgently needed to expand the market for its GM crops internationally. In addition, the images of smallholder farmers and poor consumers in developing countries assumed a weighty symbolic importance in global disputes about the merits and risks of GM crops.

The Monsanto Smallholder Programme

Part of Monsanto's response to the crisis it faced in 1999 was to announce the creation of a new Smallholder Programme. The Smallholder Programme was supposed to provide smallholder farmers with 'a package of existing commercial technologies, including improved seeds, biotechnology traits where approved and applicable, conservation tillage practices, crop protection products and other inputs, as well as training and technical assistance'. Monsanto also claimed that the programme provided support for 'self help group formation, ... the creation of other income generating activities [and] access to microcredit, as well as linkages to grain traders and processors who purchase surplus crops' (Monsanto 2002a).

It would be easy to dismiss the SHP as an exercise in public relations, and indeed it is true that Monsanto has used the programme as a source of stories to present the company's relations with Southern farmers in a favourable light. However, the programme was also motivated by a number of other factors. In order to understand these, it is important to recognise the degree to which Monsanto is a relative newcomer to the seed industry, especially in developing countries (Glover 2007).

It was only in the late 1990s that Monsanto acquired interests in a number of international seed companies, including Cargill's global seed business and a stake in the large Indian seed firm, Mahyco. Although Monsanto had been marketing herbicides internationally for many years, its entry into the seed business was a new departure. The SHP in India should therefore be seen in the context of Monsanto's effort to build its market share and develop its brand presence in order to compete with its more established rivals. In addition, the company's global managers in St Louis were used to dealing with the conditions of large-scale commercial farmers, especially in North America, but Monsanto's strategic expansion in both seeds and herbicides in developing countries brought the company into direct contact with smallholder markets for the first time. The SHP therefore also served as a

mechanism to help Monsanto's strategic managers to learn how to engage with the smallholder segment of the market (Glover 2007).

A good summary of the basic SHP model appeared in a Monsanto publication, *Growing Partnerships for Food and Health* (emphasis added):

[D]emonstration plots and farmer trials enable smallholder women and men to witness the value of technology packages that include improved seeds, crop protection products, fertilizers and conservation tillage practices. Training sessions provide the knowledge they need to use the new package safely and effectively. Micro-loans help them get started on their own farms, and market access assistance helps them sell their surplus crops to generate income for their families. Farmers who adopt the new technologies first help expand the effort by teaching others in their community.

(Monsanto Undated:4)(8)

In 2001, the SHP was reported to encompass 21 projects in 13 countries, reaching more than 320,000 small farmers (Austin and Barrett 2001), although a company briefing dated January 2002 indicates that Monsanto was directly involved in just a handful of smallholder projects, in Mexico, India, Indonesia, Kenya and South Africa (Monsanto 2002a).(9) In India, the company claimed to be reaching 35,000 farmers in 415 villages.(10) SHP projects were implemented in the states of West Bengal, Madhya Pradesh, Rajasthan and Andhra Pradesh (AP).

The Monsanto *Meekosam* Project

The Monsanto *Meekosam* ('Monsanto for you') project was initiated in Vizianagram District of North Coastal AP in 2001. The project was initiated with a survey of local farmers and agricultural practices in order to identify technology 'adoption gaps'. The project organisers then 'developed a specific package of practices for five or six specific crops' that were deemed to be relevant to the local agricultural systems, including rice, maize, cotton and some horticultural crops. The project promoted particular products and technologies, notably Monsanto's hybrid maize seeds and range of herbicides. It also included some promotional activities for transgenic, insect-resistant Bt cotton.(15)

The project was managed by the local sales manager and supervised by a project co-ordinator, who was a post-graduate in agriculture. Ten project officers (POs) were recruited, who were typically recent graduates in agriculture. Each PO was resident in a substantial village and conducted a programme of farm visits, product demonstrations, and farmer training meetings in the surrounding area, as well as responding to farmers' requests for help. The POs maintained checklists to record which farmers had been trained and to track whether they were applying the recommended package of practices.

Farmer participation in the SHP

In many significant respects, the design of the SHP can be seen to hark back to the T&V style, TOT-mode of agricultural extension. The similarity can be seen, for example, in the rigidity of the uniform package of practices and the assignment of officers to cover a particular catchment area. It is also evident in the use of locally recruited, minimally trained technical assistants in the early projects, who relied on the expertise of more highly trained specialists to deal with farmers' technical queries. Later, as in the *Meekosam* project, graduates were employed as project officers, but nevertheless their activities were closely supervised and organised around the delivery of the approved package of practices through a prescribed schedule of farm visits and other activities. They still relied on technical officers to help them handle more difficult or unusual problems.

Interviews with *Meekosam* project staff make clear that they took for granted a set of assumptions about of information and knowledge transfer, education and training, and the promotion of standardised technology packages to farmers. For instance, the sales manager in charge of the *Meekosam* project in Vizianagram told me, 'Our focus was ... on educating the farmers... They have the need for education and information.... [We were] passing on the technical information – information services to the small growers'.(16) In another interview, he said '[Our purpose was] to help small growers on right cultural practices'.(17) He remarked that the farmers felt the project was 'like a school'.(18) In a similar vein, his counterpart in Warangal District told me that one of the

primary objectives of the *Meekosam* Project was 'to give the update of technical information of agriculture as well as our products' and 'our process [was designed] to keep the farmer on track.'(19)

The focus on commercial commodity crops – maize, cotton and rice – resembles what has been labelled the 'commodity approach' to agricultural extension, a mode which harks back to the colonial era. This focus on commodity crops is clearly linked to a set of implicit assumptions about agriculture as a commercial production activity and to Monsanto's aim to promote its major seed and chemical products. These assumptions about commercial farming as an implicit goal for agricultural development were reflected in the way that the SHP was conceptualised by Monsanto executives. For Monsanto, the adoption of new technologies and scientifically informed practices was a central feature of a concept of development through which farmers would make the transition from a subsistence mode of farming to a more commercial agriculture. This technological and commercial transition was in fact central to their image of what 'development' was all about.

'Development' as technology transfer and market transition

The SHP was conceptualised by Monsanto executives as part of an 'intermediate' or 'transitional' strand of the company's operations that fell between the core business of the firm on one hand, and the company's philanthropic activities (represented by the Monsanto Fund) on the other. This 'three strands' idea appears to have been current among executives at different levels within the Monsanto hierarchy. The concept of the transitional strand carried with it consciously articulated expectations about helping farmers to make the leap from one realm to the other – as one senior SHP executive put it, 'from the subsistence to the commercial world', 'from subsistence to market'.(21)

The idea of development implicit in the concept of the transitional strand is encapsulated in the notion of farmers making a transition from non-commercial (perhaps 'pre-commercial') subsistence farming to commercial agriculture. The key event which demonstrates this transition is the farmers' adoption of new technology. According to this conception, non-adoption or slow adoption of new technology is seen as a key signifier of underdevelopment, and the act of technology adoption signifies development taking place. At the same time, technology adoption represents the farmers' transition to a new, commercial mode of agriculture, in which the purchase of external inputs is a key feature. Hence, in this conception poor farmers assumed a dual identity as both potential beneficiaries and potential customers of Monsanto's technology. But were smallholders the primary beneficiaries of the SHP projects?

Targeting smallholders?

Monsanto's publications emphasise the company's engagement with 'smallholders'. However, it is not clear that smallholders, strictly defined, were the primary target group. The company appeared to define smallholders as those farming less than five hectares of land (12.4 acres) (Monsanto Undated:4) – which is not particularly small; in India, small and marginal farmers are commonly defined as those cultivating areas around one acre.(22) In fact, however, it is not clear that the size of a farmer's landholding or other concrete indicators were used to select participants for the smallholder projects. A St Louis-based Monsanto marketing executive told me 'I'm not sure we had a real clean definition' of smallholders, noting that the meaning of the concept would vary from place to place. He preferred to think in terms of a rule of thumb which took into account the 'size' and 'economics' of the farm but also, crucially, its 'long-term potential' and the 'objectives of the farmer'.(23)

This reference to the 'objectives of the farmer' is a code for the farmer's willingness to adopt new technologies and manage his or her farm on a commercial footing. Farmers who were thought to be most likely to experiment with new technologies were characterised as 'leading' or 'progressive' farmers, whereas smallholders were characterised as 'slow adopters' of new technology.(24) However, the underlying issue of the differences among farmers in terms of their capacities to experiment with technology – to afford it, in particular – was not generally acknowledged – although one senior marketing executive in St Louis did recognise that the poorest farmers would 'never' adopt Monsanto's GM crop technologies, 'because they just can't afford the up-front costs'.(25)

In practice, both small and large farmers participated in SHP projects, but larger and more prosperous farmers were given special attention. As one observer of the project in Kumili village pointed out, the project officials had provided free samples of Monsanto's maize hybrids 'not for the weaker sections,

only for the gentlemen of the village... That way, the gentlemen will explain to the common man.’(26) The need to prioritise larger and more prosperous ‘lead farmers’ or ‘key important farmers’,(27) in the expectation that their example would influence other farmers in the project villages, was taken for granted by Monsanto staff at all levels of the company.

The emphasis on lead farmers calls into question the degree to which the SHP represented a novel departure from agribusiness companies’ regular market development activities, which would typically involve much of the same basic repertoire of farmer meetings, demonstration plots, engagement with opinion leaders and so on. Indeed, the key difference between the SHP and regular marketing was not so much in the techniques used but the market segments targeted. As Monsanto’s former global manager for smallholder agriculture observed, the commercial operations staff ‘were dealing with the low-hanging fruit; we were dealing more with the second tier’.(28)

In this respect, the SHP projects arguably have a good claim to additionality, in that they were serving areas of the market that wouldn’t ordinarily have been reached. However, by targeting the larger farmers in such districts, it has to be doubted whether the projects were really reaching the lower levels of the market. As if to illustrate this point, one apparently prosperous farmer who had participated in the Guntur pilot project told me that the project had not made much difference to him individually, since he had always been able to access the inputs he needed from his local distributor, on credit, both before and after the project.(29)

In certain respects, the SHP can be seen to have been a novel initiative that was in some degree responsive to the needs of farmers. A key factor was the assignment of project officers to live in villages. This meant that they were available on the spot to deal with questions and problems brought to them by farmers. According to one farmer who lived close to the *Meekosam* project office in Kumili village, a queue of farmers would form outside the office every morning.(33) Project officers reported that they spent a significant proportion of their time responding to the farmers’ requests for help and advice.

The fact that the POs were resident as guests in the village, combined with their professional responsibility to promote the Monsanto brand as a dependable and approachable source of technical expertise, placed them under a strong obligation to help the farmers resolve all kinds of agronomic problems, even where that didn’t involve an opportunity to promote Monsanto’s own products.(34) Indeed, at least in the early phase of the SHP, senior managers strongly emphasised that the programme was not intended primarily to promote Monsanto products; staff were told “‘Don’t link it with commercial [operations]” and ‘not a single word was uttered on Monsanto products’.(35)

To some degree, therefore, the farmers were able to exercise an immediate kind of influence over the content and delivery of the programme, and a face-to-face form of accountability. Indeed, farmers in Vizianagram District credited Monsanto with offering them services which no other agency was providing. They held the *Meekosam* project officers in high esteem and expressed gratitude for the work they did. So what was the role of farmers in the SHP?

The appearance of farmers

The Monsanto managers’ descriptions of the SHP as an information and training programme, to ‘educate the farmers’ and ‘keep them on track’, depicted small farmers as uninformed, slow to adopt new practices and technologies, in need of education to improve their farming methods and wayward in their failure to adhere to the practices they were taught unless they were closely supervised. In this implicit conception, the small farmers appear as rather passive recipients of new knowledge. In fact, however, the farmers themselves asserted that they were willing to experiment with new technologies to see if they lived up to the promised benefits.

For example, one farmer in Karlapudi village, Guntur, announced that ‘whatever’s new, I’ll go for it – seeds, pesticides, whatever.’(36) But he was equally willing to abandon the new practices if they didn’t work or he found them unsuitable. He related how the project officers had strongly encouraged farmers to adopt new pest control techniques, namely stem application of pesticides and the planting of castor and marigold as ‘trap crops’. Although he had tried the techniques during the project, he abandoned them immediately afterwards because they were labour-intensive and ‘we’re already used to spraying.... Labour is also a problem here – that’s why we’re not going for trap crops’.(37) The

same farmer smiled as he acknowledged that he and his neighbours had effectively ignored the advice they were given: ‘that particular year they were very particular about not using pesticides indiscriminately [but] once the project was over, we reverted to the normal [indiscriminate] spraying’.(38)

One of his neighbours said that he had abandoned the recommended practices because he felt they didn’t work well enough: ‘For the first one hundred days, we followed their advice but the pest was not under control.... We adopted our own methods after that’.(39) I asked whether he had continued with the use trap crops as part of his pest management system: ‘No. If we plant marigolds, it attracts porcupines, and that destroys our crop’.(40) In another village, the farmers abandoned some of the recommended products and techniques when the *Meekosam* project ended, primarily because support was no longer so readily available on their doorstep: ‘Earlier, we used to get the samples here, now we have to go to Vizianagram or Pusapatirega to get advice’.(41)

These comments help to show the degree to which the inflexible, expert-defined packages of practices failed to address the needs and priorities of the participating farmers in a coherent and sustainable way. There were no meaningful opportunities for farmers to express their views, determine the priorities of the projects or contribute to the design of the technology packages. When the new practices were found to be unsuitable, farmers were able to exercise their choice as consumers to reject or abandon them, but there were no meaningful channels through which their feedback might have been used to reshape the projects.

More fundamentally, there were no opportunities for the farmers to influence Monsanto’s upstream research and development priorities. Indeed, one senior executive attested that he didn’t see much opportunity for small farmers to help shape the corporate R&D programme, because the strategic decision to pursue a particular crop or trait technology was a ‘high-level’ one, early in the innovation process, after which there was ‘not much fine tuning’ to which farmer feedback might contribute.(42)

The model of agricultural extension embodied in the SHP was essentially a commercial one, informed by assumptions based on a consumerist, market-based model of technology diffusion. Indeed, the focus on market development was entrenched in the organisation of the SHP. At all levels of the programme, the small SHP team depended rather heavily on the cooperation of their colleagues in sales and market development to help implement their projects. Sales and market-research data were used to identify potential areas for SHP projects, and the final choice of particular villages was influenced by local sales staff. As one senior SHP executive put it, ‘we were guided by our marketers’ to areas ‘where they thought we could contribute the most’.(43) Sales staff were also directly involved with the day-to-day management and supervision of SHP projects.

Over time, the influence of sales and market development imperatives had a strong influence on the content and implementation of the programme. SHP staff found that they had to continually explain and ‘sell’ the programme to operational colleagues, who were sometimes sceptical or even hostile. They increasingly did so by justifying the programme as a means of developing experimental ‘models’ for future marketing efforts to the smallholder sector. Over time, this undoubtedly shaped perceptions of what the programme was for. As a result, as time passed, business imperatives came to dominate over the more philanthropic goals of the programme. The emphasis on commercial goals ultimately undermined the perceived rationale for a special programme targeted towards smallholders, which helps to explain why the programme was terminated, prematurely, in 2002 (Glover 2007).

Conclusions

The Monsanto Smallholder Programme can be seen to have evoked outmoded and largely discredited approaches to agricultural research and extension, closely resembling the T&V system. The programme was designed and implemented in a top-down, expert-driven mode which aimed to facilitate a one-way transfer of technology from Monsanto’s laboratory scientists and plant breeders to farmers. The company drew on the ‘expertise’ of scientists to design a standard package of practices for each focus crop, constructed around the adoption of particular technologies, assumed to be universally applicable and intended to be delivered in a uniform manner across a given territory. The selection of focus crops themselves was determined primarily by the products and technologies Monsanto had to offer and wished to promote, and the selection of districts and villages in which to implement projects was shaped by the market development priorities identified by sales managers.

The need for farmers to adopt new technologies and commercial approaches to farming were regarded as axiomatic steps in the process of 'development', so that, instead of designing the SHP projects in response to or with input from the farmers themselves, their role in Monsanto's implicit vision of development was essentially a passive one: to be consumers of the company's know-how and technological products, and to take their place in Monsanto's scheme for sustainable agriculture in the twenty-first century – the vision of 'transforming agriculture in developing countries'.

Part of the reason for this is that Monsanto needed to generate favourable associations between GM technology and small farmers. Smallholders had assumed a particular symbolic importance in global arguments about transgenic crops. Monsanto has sought to document and publicise its work with 'smallholders' to a wide audience, through a series of publications and websites (Monsanto 2001; Monsanto 2002b; Monsanto 2002a; Monsanto 2004; Monsanto 2005; Monsanto Undated).(45) By highlighting positive stories about the benefits of GM technology for smallholders, Monsanto clearly hopes to influence the global debate about GM crops, and in particular to demonstrate or even 'prove' to the wider world the value and appropriateness of transgenic crops for developing countries. In order for this argument to be made, it was necessary to make certain prior assumptions about the needs and priorities of farmers, who were constructed as rather passive recipients of new agricultural technology.

Whereas Monsanto's staff regarded the adoption of the new methods and practices as a one-time, one-directional developmental step that would transform farmers' behaviour into the future, farmers themselves were willing to experiment with new techniques but were happy to abandon them and go back to their previous practices if, for whatever reason, they found them undesirable – for example, ineffective, inconvenient or expensive. To that extent, they can be seen to have exercised voice as consumers in the market-place, but a greater opportunity to design a programme around their expressed needs and priorities was lost.

Endnotes

- (1) This paper is based on Glover, D. (2007) 'Farmer participation in private sector agricultural extension', IDS Bulletin 38(5), November: 61-73.
- (2) See http://www.mahindra.com/mahindras/FARM_EQUIPMENT/mssl/mssl.htm#MSSL (19 May 2006).
- (3) See <http://www.open.ac.uk/socialsciences/citizenconsumers/index.html> (19 May 2006).
- (4) Interview, Monsanto executive, St Louis, 20/06/05. My source could not recall the exact terms of the developing country goal, including the number of countries targeted for agricultural 'transformation'.
- (5) Nowadays known simply as 'The Monsanto Pledge'. The Pledge was originally labelled 'new' at the time when the company's management was seeking to establish the 'new Monsanto' as a specialised agricultural business, distinct from the 'old' Monsanto Company as it had existed prior to its merger with Pharmacia & Upjohn to form Pharmacia Corporation in 1999. The word 'new' also recognised the fact that the document emerged from an original Monsanto Pledge, adopted in 1990, which was 'a statement of environmental responsibility' (Monsanto 2000).
- (6) Subsidiary commitments were included, which elaborated on the five headline pledges.
- (7) Later versions of this pledge more explicitly underpin the company's 'technology co-operation' agreements – as opposed to the smallholder projects – through which it licensed its proprietary technologies for non-commercial exploitation in the developing world (Monsanto 2001).
- (8) The document itself is undated. However, two inserts, tucked into a pocket in the flyleaf at the back of the document, are dated January 2002. The packet was given to the author by a Monsanto executive in St Louis in May 2002.
- (9) According to the same document, Monsanto was indirectly involved in projects in a larger number of countries, through its support for projects implemented by Winrock International in 'West Africa and Indonesia' and by Sasakawa Global 2000 in 'Ghana, Ethiopia, Tanzania, Malawi and Mozambique'. A former 'Global Lead, Smallholder Agriculture' described this arrangement as 'more like aid' (Interview, former Monsanto executive, USA, 29/06/05).
- (10) <http://www.monsantoindia.com/monsantoin/humsafar/humsafar2.html> (21/05/04).
- (11) ~~Summer or monsoon season.~~

- (12) ~~'Seed treatment' refers to the application of chemical pesticides to seeds before planting. 'Stem application' refers to a technique for applying pesticides to the stems of growing plants, rather than spraying the chemical over the plant. The technique is credited with being highly economical in comparison with conventional spraying methods (Sohoni et al., 2000).~~
- (13) ~~Interview, Monsanto India former SHP executive, Mumbai, 19/12/05.~~
- (14) ~~Interview, Monsanto India executive, Mumbai, 11/01/05.~~
- (15) Information compiled from interviews with current and former Monsanto India managers, Meekosam project staff and local farmers between October 2004 and December 2005.
- (16) Interview, former Monsanto India sales manager, Hyderabad, 14/11/05.
- (17) Interview, former Monsanto India sales manager, Hyderabad, 22/11/05.
- (18) Interview, former Monsanto India sales manager, Hyderabad, 24/11/05.
- (19) Interview, former Monsanto India sales manager, Vijayawada, 03/12/05.
- (20) ~~Interview, Monsanto India executive, Mumbai, 11/01/05.~~
- (21) Interview, former Monsanto executive, USA, 29/06/05.
- (22) From St Louis, of course, almost all Indian farmers would be considered very small.
- (23) Interview, Monsanto executive, St Louis, 23/06/05.
- (24) Multiple interviews, e.g. former Meekosam PO, Guntur, 4/12/05; former Monsanto India sales manager, Hyderabad, 24/11/05; Monsanto India SHP executive, Mumbai, 11/01/05; Monsanto India SHP executive, Mumbai, 30/03/05.
- (25) Interview, Monsanto executive, St Louis, 27/06/05.
- (26) Interview, retired teacher, Kumili village, Vizianagram, AP, 16/12/05.
- (27) Interview, former Meekosam PO, Guntur, AP, 04/12/05.
- (28) Interview, former Monsanto executive, USA, 29/06/05.
- (29) Interview, farmer, Karlapudi village, Guntur, AP, 15/12/05.
- (30) ~~Interview, NGO staff member, Secunderabad, 19/11/05.~~
- (31) ~~Interview, former Monsanto India sales manager, Hyderabad, 24/11/05.~~
- (32) ~~Interview, former Meekosam PO, Vizianagram, AP, 17/12/05.~~
- (33) Interview, farmer, Kumili village, Vizianagram, AP, 16/12/05.
- (34) Interview, Monsanto India executive, Delhi, 18/11/04.
- (35) Interview, Monsanto India executive, Mumbai, 11/01/05.
- (36) Interview, farmer, Karlapudi village, Guntur, AP, 15/12/05.
- (37) Ibid.
- (38) Ibid.
- (39) Interview, farmer, Karlapudi village, Guntur, AP, 15/12/05.
- (40) Ibid.
- (41) Interview, farmer, Kumili village, Vizianagram, AP, 16/12/05.
- (42) Interview, Monsanto executive, USA, 20/06/05.
- (43) Interview, former Monsanto executive, USA, 29/06/05.
- (44) ~~Interview, former Monsanto India sales manager, Vijayawada, AP, 03/12/05.~~
- (45) Monsanto's Pledge website has a section on the socioeconomic impacts of GM crops (http://www.monsanto.com/monsanto/layout/our_pledge/socioeconomic, 23/02/06), which complements special websites that promote biotechnology such as The Biotech Knowledge Center (<http://www.biotechknowledge.monsanto.com>, 6/09/06) and 'Conversations about Biotechnology' (<http://www.monsanto.com/biotech-gmo/index.htm>, 6/09/06). In 2000, Monsanto launched a specific programme to encourage and facilitate, directly and indirectly, research by independent academics into the economic and social impacts of genetically modified, insect-resistant Bt cotton (Monsanto 2001).

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