Recent and future challenges in agricultural extension

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Historically, many of the changes in agricultural technology have been viewed as "public goods". It was in the interest of the nation to ensure food production and develop agriculture, and therefore, government funding was often provided to work with farmers - often farmers' associations - in explaining and testing the new technologies. The private sector became important in Europe and the USA with the introduction of, first, mechanical and subsequently chemical technologies. Even so, the impact of public funded extension was undoubtedly significant.

Over the last 50 years, there have been a lot of changes in fashion in agricultural extension. Keeping in mind the basic distinction between the ways extension is *organised*, and what it does (i.e. its dominant *functions*), this article asks:

- What have been the main patterns of organisation and function?
- What has underpinned the transition from one pattern to the next
- What extension issues are currently most prominent on the international agenda, and why?

Dominant patterns during colonial times

Two patterns of extension provision were dominant in these times. One was for extension to be linked specifically to export crops extracted from the "colonies". Typical examples included such major commodities as tea, coffee and cotton. Cocoa and rubber, being regarded initially as "forest" crops, came under this system later. Extension services were generally organised by the private companies or parastatal marketing boards involved directly in the production (but more often in the processing or marketing) of the commodity. The services were paid for by a levy on the sales of the product, which was easy enough to collect where the product had to pass through a monopoly purchaser.

A second was for colonial governments to impose their concepts of "good husbandry" in relation to soil and water conservation. However, much of the activity here consisted of issuing orders, checking whether farmers followed these, and imposing fines or imprisonment where they did not.

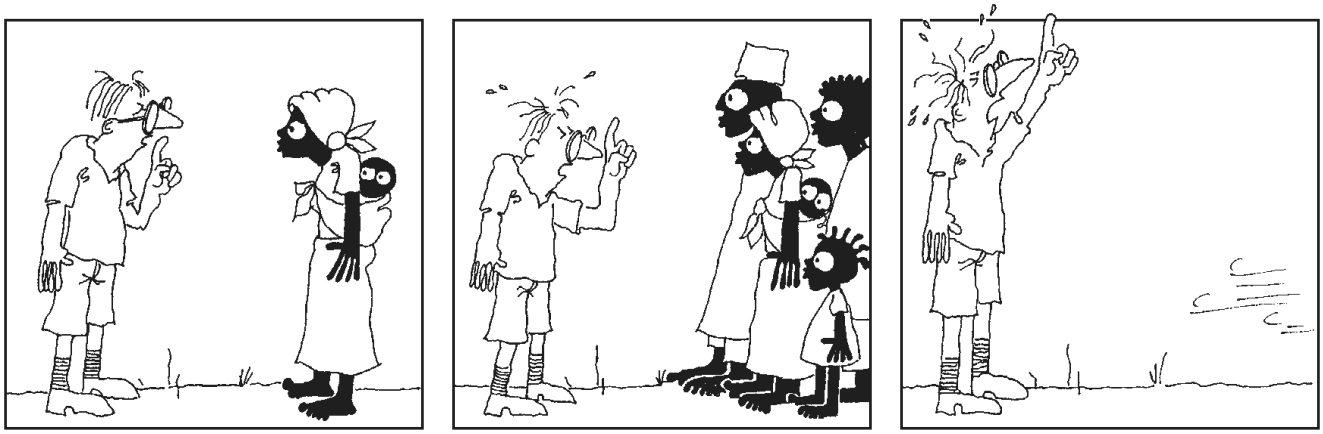
In both of these cases, the underlying concept is that technology has to be transferred, that recommendations have to be followed rigidly and that farmers who do not adopt are "laggards" in some way. Whilst technical specifications remain important for internationally marketed produce, outside of this context there has over the last 2 decades been a growing recognition of the validity of farmers' own knowledge and practice in such matters as varietal selection and soil and water conservation itself.

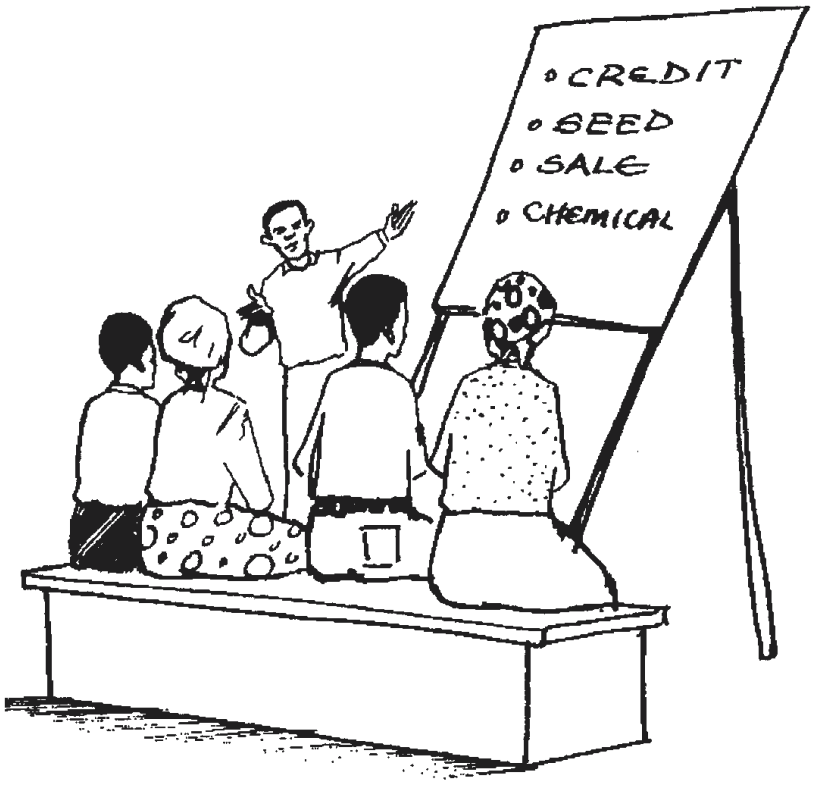
Post-Independence changes

One of the most pressing tasks facing newly-independent governments was to ensure adequate food supplies (which, incidentally, highlights the fact that food security is as much a matter of political self-determination as of economics – by contrast with the near-exclusive emphasis that neo liberals place on the trade economics of food security). Accordingly, they began to build up existing national agricultural research and extension services, or create new ones where these did not already exist. Research and extension were often run by separate departments. The interrelations between the departments were generally weak and dominated by researchers' perceptions that extension existed simply to disseminate the results of research. In other words, extension "existed to transfer new technologies to the masses". Others saw the potential for extension agents to carry out all manner of other activities, such as those relating to census and statistics, or even tax collection, so that in many cases they became distracted from their main purpose, and in some cases were even viewed by farmers with antagonism.

Two broad sets of efforts - both promoted by donors, but sadly, with little compatibility between them - were undertaken to strengthen national extension services in the 1970s and 1980s. One was the promotion of "systems" approaches. Approaches such as farming systems research focused on the understanding and improvement of existing systems instead of their wholesale replacement. These ideas were based on recognition that farmers had developed complex systems of managing crops and livestock in ways adapted to locally varying agro-ecological and socio-economic conditions. If options for technical change were to be developed which would be relevant to these farmers, it was essential to base them on good understanding of how farmers perceived and managed their farming systems. In this context, extension would not be restricted to dissemination functions, but would have a key role in feeding information on what innovations farmers adopted or rejected (and how and why) back into research systems. Whilst much of the philosophy of this approach remains relevant, in practice, it has been dogged by high cost, inability to shift "recommendation domains" onto a large scale, and resistance by many scientists to be drawn out of conventional modes of operation.

A second, starting in the 1980s, was the promotion, especially by the World Bank, of the Training and Visit (T&V) system. It is important not to lose sight of the immense scale of





this initiative: by 1992 World Bank and IDA had funded 602 projects with an extension component, almost all based on T&V, to a total value exceeding US$5bn. By the late 1990s, the pendulum had swung the other way - the World Bank lost interest in T&V, leaving numerous countries with T&V-based systems which were both costly and largely dysfunctional. T&V was intended as a system for managing public extension resources, but also had profound effects on extension methods and farmer-extension worker interaction (Garforth and Harford, 1995). It was developed and promoted in the belief that existing public sector services were overburdened with distracting tasks, poorly organised and inadequately trained. The main features of T&V are well known: it stripped away from extensionists such "extraneous" functions as promoting input subsidy schemes, or selling inputs themselves; it had a strongly hierarchical structure, with village workers backstopped by subject-matter specialists; it relied on strong technical "messages" reminiscent of "technology transfer" thinking; and it relied on local level dissemination through "contact farmers" – initially individuals and subsequently group approaches. There has long been widespread agreement on its shortcomings, which include its lack of flexibility of response in unstable, rainfed environments, its reinforcement of structural inequalities through the contact farmer approach, and its unsustainably high cost.

In retrospect, what also makes T&V look old-fashioned is its insistence that extension should be uniquely a publicly-funded, publicly-delivered service with no room for public/private partnerships of any kind, and, secondly, the insistence that extensionists should not take on any related activities such as the sale of inputs.

Privatisation and institutional complexity post-T & V

With the demise of T&V, the organisational landscape has become much more complex – in some ways, necessarily so. Some of these changes have resulted from the growth and replication of locally-based initiatives, such as the creation of local groups to test and exchange technologies, some groups being formed by farmers themselves, others spinning off from local institutions such as churches. Some of this complexity is the result of pressure from eg the World Bank and IMF towards economic liberalisation. Extension has not been spared from this "rolling back" of the state - "cost recovery" has been introduced for some aspects of what extension services did (eg. soil testing or livestock vaccination), or extension has been handed over entirely to the private sector for some categories of farmers (eg the more commercial) or categories of activity (such as veterinary).

This pressure has also accelerated trends that were established long before disillusion with T&V became widespread. These include:

- Efforts to build multi-agency partnerships in ways that (for the state) reduce costs, but also spread the reach of extension to areas where a purely public sector service is unlikely to be viable, and make it more responsive to local needs and opportunities. Such partnerships include service-providing non-governmental organisations, though much mutual suspicion needs to be overcome and these to some extent remain reluctant partners (Farrington and Bebbington, 1993)
- Efforts to build community-based organisations, such as farmers' associations, and to expand their capacity to make demands on technology systems and share new ideas, skills and approaches among their members. This approach has been pursued especially strongly, and with some success, in francophone countries
- Efforts to place funds in the hands of farmers so that they can "contract in" extension from whatever source they prefer. These include the voucher scheme operational in Chile for some time, and the channelling of extension funds to farmer groups via the Sub-Counties in Uganda following the NAADS Act (p.12).

Emerging priorities

Two new sets of conditions have to be faced by developing countries and have important implications for extension. One is globalisation, especially in respect of trade in agricultural commodities. Many, especially in the North, overestimate the potential benefits for developing countries (especially landlocked countries in eg Africa) of globalisation, and underestimate the threats it poses. Where it does offer potentially new markets, the implication for extension is clear – all aspects of production, processing and marketing need to be driven by the requirements of the market, and extension guidance has to be tailored accordingly. This would not be much different from the approach pursued largely for export commodities and largely by extension agents employed within

large private companies in francophone countries. Where it poses threats, appropriate trade, agricultural and rural development policies need to be in place to meet such threats. In terms of agriculture, these will have to identify how internal markets and production systems can be supported and stimulated, and extension strategies designed accordingly.
The other change on the international landscape that affects extension is growing concern among donors that their support should be geared towards poverty reduction. This poses the interesting question of *whether* (not *how*) extension can contribute towards poverty reduction. A recent study (Farrington et al 2002) argues that it can, but only so long as poor people are seen to be not just farmers (or producers in general), but also labourers and consumers. Consumers can benefit through lower-cost food – and the extension implications of this are clear. The implications for extension of supporting the "poor as labourers" more than in the past are not so self-evident. Basically, little can be done unless agricultural policy in general (and technology policy in particular) bases itself on a fuller understanding of the labour economy – are wage rates stagnant, falling or rising, at what times of year and for what kinds of work (and worker)? when are particular kinds of workers relatively underemployed? What kinds of activity (within or outside agriculture) can be promoted to offer employment during these periods? It is only on the basis of questions such as these that extension can then be designed to offer what would be appropriate, check on its uptake, and make necessary course-corrections.

Changes in techniques and approaches

Our discussion up to now has focused largely on the question of how extension can best be organised. We now consider techniques and approaches – though these are not entirely

unrelated to organisation: for instance, an organisational structure such as that of T&V which lends itself to linear, "transfer of technology" types of approaches is unlikely to be appropriate for more participatory types of approaches based for example on experiential learning.

Broadly, during colonial and early post-colonial periods, farmers were treated as passive recipients of technologies designed and delivered from scientific centres. Farming systems research, and growing interest in indigenous knowledge, prompted approaches which recognised the validity of traditional ways of managing farming, and appreciated that new technologies would have to be consistent with these if they were to have any chance of adoption. "Participation" by farmers in setting the agenda for research and extension therefore began to be advocated (Chambers et al, 1989). It was soon recognised that participation could take many forms, ranging from consultative approaches to make sure that extension recommendations were adequately targeted, to empowering approaches supporting the rights and entitlements of farmers as citizens, and therefore an end in their own right.

Many approaches to extension have been driven by the ethos of participation, and not all can be reviewed here. They include:

- Farmer-to-farmer approaches, in which farmers themselves are trained to promote learning among their colleagues, and to make demands on "external" systems (Scarborough et al (eds) 1997)
- Experiential learning approaches, such as farmer field schools. These emphasise the importance of learning in practical field settings instead of through didactic modes in classroom settings. They have been widely used with, for instance, integrated pest management.
- "Soft systems" approaches such as the Agricultural Knowledge and Information System (AKIS – Roling 1988) to think about the institutional framework supporting extension, and to identify the roles played by different kinds of actors in different settings.

The future?

The purpose of this article has been to set out a personal view of how and why patterns of extension have changed in the recent past, and fuller speculation on what the future holds is best left to others. However, it seems to me that extension will have a major role (but also many challenges) in the future in identifying how to bring together (on the one hand) the best that farmers can input into technology design, adaptation and dissemination, and (on the other) the best that technology systems themselves can offer. Nowhere will this be more difficult than in areas weakly-integrated into markets, where the majority of the rural poor still live (Farrington and Gill, 2002). These areas will be characterised by growing impossibility of recruiting and retaining conventional village-level public sector agents. This problem may be addressed by encouraging them to form small businesses involving for instance input supply, or generating the skills necessary to provide small business advice to local people. It might also be addressed by locating a strong cadre of extensionists and higher-level specialists in local towns, and increasing the capacity of people to draw on these – this will involve not only the logistic problems of getting them into towns, but also major psychological shifts on the part of public sector workers so that they welcome such "demand pull", visit the villages as necessary, and link closely with the private sector to generate advice appropriate to shifting market contexts. This is a complex agenda, but one which extension will have to take in its stride if it is to continue having an influential role in the future. ■

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