The Future of Agricultural and Extension Education: 
Trends and Policies Worldwide

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Abstract

The last decade witnessed an accelerated decline in the credibility of public sector extension. Unless extension grows beyond technology transfer, and clearly articulates its role in facilitating broader changes supportive of evolving rural livelihoods, its ability to remain relevant in the future is extremely doubtful. While the reform process is heading in this direction, planners need to face up to the need for considerable institutional change and learning if extension is to escape from the shackles of a technology dissemination role.

This paper is a summary of how extension can contribute to poverty reduction. The major concerns are how extension policies must be seen in a wider context of rural poverty reduction, the realities of livelihoods, and the existence of a range of public and private extension providers. The paper reflects the hypothesis that, when situations become increasingly complex and make higher demands on the knowledge and skills of farmers, the type of agricultural and extension education will shift. The study makes use of a variety of reference materials to elicit and reflect on the issues raised at hand and puts forward the future of agricultural and extension education trends and policies. It is important to look beyond agricultural and extension education to a more inclusive program of livelihoods extension. Recent changes in the funding of agricultural research, extension and education, and increasing institutional complexity necessitate the development of new approaches to prioritizing and targeting agricultural innovation.
Introduction

Agricultural and extension education has much to offer to the rural poor, providing that they are perceived not merely as producers, but also consumers and laborers, and that appropriate wider policies are in place. However, agricultural extension policy in many countries over recent decades has been exclusively production-focused, institutionally monolithic, centrally directed, and organized on the premise that public sector extension structures can effectively reach down to village level. Partly in reaction to this, neoliberal voices have recently urged ‘reform’ in the sense of wide-scale privatization of extension and removal of the state ‘subsidy’ that it implies. The study reported here challenges both approaches. Appropriate future policies will avoid past extremes of state-dominated or (hoped for) private sector provision. Instead, they will focus on identifying appropriate public and private roles and partnerships between them. A powerful policy driver will be to reduce the risk of ‘durable disorder’ to which remote areas are especially susceptible.

The Transfer of Technology (ToT) model of rural extension has taken a battering in recent years from farmer first advocates and their descendants, starting perhaps with Chambers and Jiggins (1987). This model is widely seen to be derived from diffusion of technology theory arising from American rural sociology. At the 1962 Australian Agricultural Extension Conference in Melbourne, A.H. Maunder, then Chief of the Foreign Education Branch in the Division of Extension Research and Training of the United States Department of Agriculture Extension Service quoted the following definition of extension education:

The process of extension education is one of working with people, not for them; of helping people become self-reliant, not dependent on others; of making people become the central actors in the drama, not the stage hands or spectators.

Maunder (1963) went on to describe how the US Cooperative Extension Service had started with top-down (ToT) extension, but had found that farmer adoption of their recommendations was patchy. Then,

Thousands of farmers and their wives gathered in small groups around kitchen tables and in school houses to tell the extension workers of their wants and needs. This was a significant step forward. It aroused the interest of great numbers of people never before reached.

This sounds very like some expressions of participatory inquiry and has echoes of land care. Maunder noted that this approach in some years led to burn-out, to extension staff spread too thinly, with many unrelated projects, responding to local needs but lacking a strategic focus. The pendulum then swung back to a more instrumentally rational approach, before moving on to other emphases (such as marketing, differences between rural and urban living, world competition, demographic trends, technological change) in response to the times (Maunder, 1963). Finally, Maunder summed up the state of the art of agricultural extension as he saw it in 1962:
Extension programme is hoped to assist rural people to adjust to the ever-changing situation. Agricultural adjustment is becoming an increasingly important element of extension education. The progressive, democratic approach assumes that the soundest programmes result from a fusion of the ideas of many people-extension workers, technical specialists, farmers, and many others. It recognizes that programmes, to be effective, must be geared to the roots of local problems. It implies going on the offensive and it involves leadership in pointing the way. It recognizes that professional people must lead their clientele to make up their own minds on the most useful targets or objectives and not make their decisions for them.

Not much seems to have changed in 30 years. Comparing this quote with modern tenets of participatory inquiry (for example, Pretty, 1993), it certainly picks up the need for seeking multiple perspectives in local people to help themselves is also common to the view from the early 1960s and the 1990s, although the former is stronger on leadership and the latter emphasizes facilitation. Viewed in context, however, they probably mean the same thing, as facilitation did not have the currency in 1962 that it enjoys today. As to the need for the defined methodology and systematic learning process identified by Pretty (1993), Maunder (1963), elaborated a detailed planning framework including criteria for acceptance of jointly developed solutions. The programme-building process is a teaching technique. Phrases such as “socially significant learning,” the point about combining “scientific and folk knowledge” and the notion of the process as a learning exercise in and of itself, are all entirely consistent with modern interoperations of participatory inquiry and platform facilitation.

Purposes and Objectives of the Paper

It is reported in the agricultural and extension network paper (July 2002) that public service delivery reform takes several guises, but three of the most important trends are retrenchment, decentralization, and privatization. The future of agricultural and extension education needs to focus on its outcomes and strategies and research that are associated with these shifts as they significantly affect the resources, personnel and options available for supporting farmers.

The purpose of this paper is, therefore, to set out a new vision and strategy for the future of agricultural and extension education. In addition, it provides an update on the agricultural extension and education past and on-going assistance to extension development, describes what has been achieved thus far, and discusses recent developments and new directions.

Much current work urges reform in the sense of privatization and removing state subsidies. In contrast, this study urges a much broader view of the role of agricultural and extension education. On the one hand it applauds efforts to diversify and privatize extension where possible, particularly in areas well integrated with markets. On the other hand, it defends the continuation of some forms of ‘subsidized’ extension, but under much different criteria than the previous production-focused strategies.
Theoretical Base

In an arena of globalization, farmers need to be more organized and more competitive. But even if significant progress is achieved, many farmers face a very uncertain future. The production of basic commodities will remain important, but as increasingly urbanized, and as alternative suppliers appear in global markets, the production of such commodities will not offer many opportunities for growth. Agricultural and extension education envisions the preservation and strengthening of as many small-scale producers as possible, but it is unrealistic to believe that this can be done without significant readjustments in the countryside.

The paper reflects the hypothesis that, when situations become increasingly complex and make higher demands on the knowledge and skills of farmers, the type of agricultural and extension education will shift.

Methods and Data Source

The study make use of a variety of reference materials to elicit and reflect on the issues raised at hand and puts forward the future of agricultural and extension education trends and policies. This paper explains the restrictions that a technology dissemination focus places on the debate of extension reform and provides a more holistic viewpoint to help reconsider critical policy questions facing public agricultural and extension education organizations.

Results

The shortcomings of public sector extension arrangements call for the implementation of some reform measures. But unfortunately, planning and evaluation of such programs is based on a very narrow view of the proper role of extension, equating it to an agency for technology dissemination. This is certainly a role that extension can play. However, it is widely acknowledged that there are other important facilitating functions that it could perform to help create a stronger agricultural innovation system adapted to evolving rural economies and the agendas of stakeholders, especially the poor.

A seemingly obvious, but often overlooked, aspect in joining up extension with broader pro-poor efforts is to place extension explicitly within poverty-reduction policies. Coherent policies are the best basis for demonstrating to extension agents that pro-poor efforts will be recognized and rewarded within their institutions, whereas poverty alleviation has certainly received increasing attention from both governments and donors, these policies have generally filtered down to field level structures on an uneven manner, if at all.

As Farrington et al. (2002) make clear in their case studies conducted in some countries, they highlight three needs in order to ensure extension policy is set out within broader pro-poor policy effectively: the need to draw explicit links between pro-poor policy and the role of extension, though these may be both through direct and indirect effects; the need to learn about how the poor benefit on different ways from investment in extension (as producers, consumers, laborers, citizens); and the need specifically to analyze the mix of
signals and incentives that are sent to frontline extension staff, and how these staff interpret their roles and priorities.

Drawing on and further elaborating their findings on the issue at hand, Farrington et al. argue that decentralization would seem to be the policy reform trajectory with the greatest potential for reorienting incentive structures for pro-poor extension. Subsidiary could be presumed to provide opportunities for local actors, particularly the poor and those supporting the interest of the poor, to adapt policies and programs to the complex and diverse nature of poor people’s livelihoods in a given area. A factor influencing the impact of decentralization on incentives for pro-poor extension is the abilities of local authorities to deal with pluralism. To be effective, pro-poor incentive structures must be embedded with in a number of different organizations. Local authorities often lack the knowledge, skill and legitimacy with which to influence these agencies, much less to coordinate their efforts. Over-optimistic assumptions that local authorities have the credibility and capacity to assume a leadership role are central to many plans for the decentralization of extension.

As Rasheed Sulaiman V. and Andy Hall (1999) reported the Indian experience, agricultural extension in India is at the crossroads. A decade after the end of the training and visit (T&V) system, the department of agriculture (DoA), the main extension agency, is struggling to find a fresh direction and approach. At the same time, the nature of the Indian agriculture becomes ever more complex. New opportunities (and threats) for trade in international markets join older concerns of supporting the rural economy where agricultural production and employment support the livelihoods of many of the poorest in society. The public sector, including both agricultural research and organizations, has also seen the emergence of new imperatives such as cost recovery, decentralization, pluralistic funding, and privatization.

Tender’s (1997) research in Brazil concluded that decentralization’s impact on incentives for field staff often relies on strong, clear, and focused policy guidance from central levels. This is echoed in the successful experience in Vietnam, as well as in the reasons for the limited impact of decentralization in Nicaragua. Without a strong and consistent vision as to what extension should be doing, there is a danger that mid-level actors respond to other incentives. In India, while messages and policy guidance from the center are strong, they are often irrelevant to poor people’s needs, monitoring systems are weak, and even the limited attempts to ensure more accountability of extension workers to local government have been strongly resisted.

Taking the conclusions of Farrington et al. as a point of departure, the Bolivian case illustrates how an appropriate pathway was chosen from central /decentralized and public / private options. Given the non-viability of public extension provision in the sparsely-populated lands of eastern Bolivia, the research and extension services re-modeled themselves to provide advice and information to a range of ‘intermediate users’ of technology, including producers’ organization, NGOs, and commercial agencies. This approach cost government little, indirectly reached most remote areas, had adequate technical back up from research, drew on innovations practiced among farmers themselves, and
encouraged farmers to make demands on the technology system through the intermediate organizations.

** Desired policy framework for agricultural and extension education **

The prevailing political climate favors the free operation of the market as a beneficial shaper of a desirable society. Public support for agricultural research, extension and education is rapidly decreasing with the dwindling political support for agriculture in general and productivity enhancement in particular. Given the relatively small number of farmers still in business, and given also the decrease in the flow of productivity-enhancing innovations, a key mechanism for the most innovative and influential farmers who used not to make too much noise about their colleagues who were forced out of the market by the treadmill mechanism, they now face the music themselves.

The emergent concern about the sustainability of conventional agriculture has, as yet, not led to an adaptation of the societal mechanisms which ensure a more ecologically sound agriculture. While there is widespread recommitting that the market fails when it comes to externalized environmental costs, destruction of common property resources or open access resources, fiscal policies, and/or regulatory measures to offset markets failure have, as yet, had limited effect, while public support of farmer learning required for ecologically sound agriculture is generally limited.

The above argument becomes quite obvious in the light of Roling & Wagemakers’ study (1998). Moral rewards seem hardly at work as yet, allowing large gaps between what people know and what they do. Trade-offs among the policy goals of productivity and sustainability are difficult to operationalize. For the time being, the internally consistent and highly interwoven complex of policies and policy instruments that supports productivity seems as strong as ever. It is driven by policy theories, which emphasize global food security, and high chemical input agriculture to ensure that future demands can be met. It goes without saying that such policies are favored by fertilizer and pesticide lobbies. Furthermore such policies are informed by computer simulations, which only take in to account biotic factors, emphasize grain production as a proxy to food production, and take the American high fat and high meat diet as an inexorable standard toward which the human food system evolves. As humankind “progresses,” it is expected to “move up the food chain,” and thus become more of a predator. What I would like to emphasize to Roling & Wagemakers’ very plausible study is that such expectations ignore the fact that people’s behavior is not caused but constructed by themselves. Trend is not destiny. In fact, knowledge about trend is a key instrument in ensuring that trend does not become more of a predicator. An example is the US food and Drug Administration which has recently, and not without a long and fierce battle with the meat industry, released new recommendations for a healthy diet which feature a sharply reduced animal fat and meat intake and an increased fibre, fruit, and vegetable intake. In fact, a vegetarian diet is strongly recommended. The cost of the present US diet in terms of public health is very high.

Jiggins and Pretty (1994) have presented a number of alternative perspectives which take the global food security challenge seriously, but point to non-conventional routes to
ensure it. It is time to question the scenarios, advanced by both the ecological doomsayers such as Lester Brown, or the advocates of renewed investment in conventional agricultural research and extension, such as Norman Borlaug (Borlaug & Dowswell, 1995).

Policies focus particularly on preventing the externalization of environmental and ecological costs of agricultural production and on enhancing consumer trust in ecological products.

To the point at hand, Roling & Wagemakers, (1998) enumerated what appear to be conducive policy contexts as follows:

- In the present free market context, profitability is essential for farm survival. Ignoring it, and asking farmers to engage in unrewarding, cost-increasing practices is unrealistic. The margins for change at the farm level are small. The downward pressure on prices forces farmers even to ignore important concerns such as maintaining the long-term productivity of their land for their children.
- The narrow focus on primary production in the search for solution casts farmers in the role of scapegoats, while consumers and agri-business continue to benefit from unrealistically low prices. It seems impossible to move to ecologically sound agriculture without taking a more holistic perspective which includes other actors in the production column, and, perhaps even more importantly, takes in to account the multiple purposes for which land is used.
- Internalizing costs by fiscal measures based on mineral bookkeeping, monitoring of pesticides use, etc., are difficult to effectuate. Yet, the development of mechanisms to make visible the impact of farming on the wider environment is essential, not only for effective fiscal measures, but especially as a basis for farmer learning and anticipation. Much work is still required in this area.
- Covenants between government and farmers, which specify a route of environmental targets to be achieved while leaving the method of realizing (open)?, is apparently insufficient to achieve the targets specified in the absence of transformation subsidies, and public support for facilitation and research.
- The transformation required cannot be limited to primary production only. Agriculture in industrial countries is embedded in ‘actor networks’ (e.g., Callon & Law, 1989) or ‘coalitions of interest’ (Biggs, 1995), which have to be taken in to account. Actors include processing industries, agriculture co-operatives, advisory services, research establishments, farmers organizations, government agencies, commercial input providers, banks, and many other firms and services which form a complex system that supports the prevailing mode of production and is totally dependent on its continuation. In the Netherlands, for example, this actor network has emerged over a period of nearly a century. It is highly inter-connected in that respected farmer leaders hold multiple key positions in co-operatives, boards of research stations, etc. High social pressure is exerted with in the network to maintain the coalition of interest. Farmers who deviate are considered a threat to the coalition as a whole. What’s more, the logistics of farming often mitigate against a change in the mode of production. For example, the entire production of biological sugar beet in the Netherlands can be processed in one day by the large-scale plants, which slowly evolved as Dutch agriculture became more specialized and competitive. The transformation
to ecologically sound agriculture cannot be realized without struggle, as new actor networks emerge and undermine the power of others. To be effective, policies will need to address this issue explicitly.

- Policies are often inconsistent with ecologically sound farming. Sometimes they work in wondrous ways, as described in the Indonesian case where the threat to national food security, and hence political stability, as a result of emergence and resistance of the Brown plant Hopper, created a conductive context for IPM. But policies that favor ecologically sound practices can be incompatible with the continuation of conventional farming practices. The case of the Netherlands (Van Woerkum and Aarts) makes clear that various policies duly enacted by Parliament flounder on the intransigence of the conventional farming complex, which the market and significant areas of policy continue to sustain.

- An interesting policy issue that emerges is the nature of financing of the ecological knowledge system. It is one thing to finance an extension service, but quite another to finance farmer trainers and farmer meetings. Yet, the latter seem essential ingredients of the ecological knowledge system. Of interest is the considerable funding of such costs by farmers, local communities and local government.

Generally at the broadest level, processes underpinning the new architecture of aid, such as the preparation of poverty reduction strategy papers, can support extension in three ways by: eliciting perspectives of the poor which are usable in extension design; fostering coherence among extension, agricultural and rural development policy, and between donors and governments; and placing extension policy within a realistic analysis of the changing social, political and economic context of rural development, especially regarding the changes of marginal areas.

**Concluding remarks**

I conclude that the future of agricultural and extension education implies more than a shift in farming practices. A change in attitude and knowledge about how to grow a ‘good crop’ is inherent in the process of adaptation. Without putting too much emphasis on the concept of ‘cultural pattern’ that prevailed in the 1960s, we want to focus on the process of social-cultural adaptation that farmers are asked to go through today. What a challenge this means to agricultural and extension education!

It seems that the focus must be less on bringing about specific behavioral change and more on raising consciousness. Group work can stimulate individual and collective reflection on measurements, experiments with new methods, and the acceptance of new norms of appropriate behavior. New values to support ‘good’ practice develop in a group. Extension roles shift from advisory activity based on technical expertise, to the role of facilitator of a learning process for both farmer and extensionist. It is generally a well-established fact that when situations become increasingly complex and make higher demands on the knowledge and skills of farmers, the type of agricultural and extension education will shift.

Many projects revealed that the introduction of sustainable agriculture is not a matter of simply changing certain behavior or adopting a certain technology. The growing confidence of growers to be involved in, and contribute to, the process of developing a more
sustainable agriculture seems to be the key. The relationship with the farmer is not so much instrumental or strategic as communicative. This role poses new demands on the skills and attitude of extensionists. Like farmers, extensionists must also learn to live and work in a context of cultural change.

The context of agricultural extension described here is more complex than in earlier perceptions, but also more realistic. Agricultural extension has a role to play in addressing poverty; for it to do so effectively, it must address poverty from a livelihoods perspective within a wider, poverty-focused policy environment; contribute to enhanced ‘voice’ among the poor; and seize opportunistically on possibilities for enhancing incomes or reducing vulnerability, based on sharper alertness to new opportunities.

For weakly-integrated areas, the correction of market imperfections will require massive resourcing. Government and donor options for supporting more pro-poor extension are determined by the degree of market integration and of government capacity and commitment to servicing rural areas. A common theme, whatever the context, is the need to build capacity in and improve linkages between the wide range of public and private institutions that affect the rural area.

On top of the above, I conclude with a final note on the policy implications of the above analysis. Agricultural and extension education policy will create and support opportunity by identifying where the poor can benefit from the market, as producers, laborers and consumers, and enhance security and reduce vulnerability by designing strategies and priorities that avoid or reduce risk and enable empowerment by helping the poor to develop negotiating capacity in relation to market actors and extension providers. Specific options depend on economic, social, and cultural contexts, in particular: degree of integration into markets, levels of public sector resourcing, and government’s vision of future options for weakly integrated areas. A changed role for public sector extension (facilitating and regulatory in well integrated areas, direct involvement via public-private partnerships in weakly integrated areas) is part of this policy refocusing. However, new policies towards extension are unlikely to succeed unless supported by some reorientation of agriculture, rural development, and, increasingly, urban development policy.

Recommendations

A trend perceptible throughout the various extension systems undergoing adjustment is that there is a need for greater flexibility and multiple partners in funding agricultural and extension education services. To remain relevant, agricultural extension has to reinvent itself. This will require considerable institutional and organizational changes in both the public agricultural research, extension and education arena.

Future development and improvement of agricultural extension has to respond to the ever met weaknesses as well as introducing new ideas and innovations to carry extension forward into the future. Some main challenges for the future are to:
► Develop fully broad base extension to cover information on all land-based farm activities and to ensure more effective coverage of all social groups.
► Improve the quality and effectiveness of extension
► Improve extension management
► Hold or in the longer term to reduce public expenditure on extension
► Introduce farmer participation in public sector extension management and planning.

On the whole, from the standpoint of current limitations of public sector extension, the following new vision and strategy for agricultural and extension education can be set out:

♠ adoption of farming system and farmer participatory approach;
♠ enabling problem solving skills of farmers through an interdisciplinary approach;
♠ public funds for private extension;
♠ privatization of the private goods elements of extension in favorable areas;
♠ provision for cost recovery and co-financing of extension via farmers organizations;
♠ reduction in the number of village level workers;
♠ use of para extension workers and farmer interest groups for extension;
♠ employing more subject matter specialists;
♠ preparation of strategic research and extension plans;
♠ improving the research-extension-farmer interface;
♠ skill development of extension agents;
♠ improving women’s access to technology;
♠ provision of market information;
♠ wide use of information technologies;
♠ linkage with agro-processors; and
♠ the government to act as a facilitator and creator of an enabling environment.

Extension needs to address vulnerability as well as productivity and to offer new options from which poor households can choose according to their circumstances. More over, extension should offer a wide range of services, some focused on support to production and others focused on wider livelihood support, targeted according to an analysis of a particular area’s market integration, degree of vulnerability, and production prospects.

Furthermore, we need to look beyond agricultural extension per se, and instead consider livelihood extension, i.e., how the poor may benefit from technological change as producers, consumers, and laborers and as rural residents. This may mean a decision to give up efforts to support subsistence producers in their production strategies, and instead look at ways to support the creation of other rural employment and migration. In addition, the consideration of livelihood extension can also mean that provision of counseling to market-oriented activities that have positive spin-offs in terms of social capital formation, positive functioning of groups, and income generation.

To end with, it is recommended that there is a need specifically to identify women as an integral part of the agricultural and extension education policy and develop gender-specific operational guidelines that will direct the extension activities of women farmers.
References


