

Futurology of farm extension services in India

The use of the word 'extension' has its root from an educational development in England during the second half of the 19th century. Around 1850, discussions began in the two ancient universities of Oxford and Cambridge about how they could serve the educational needs, nearer to learners' homes, of the rapidly growing populations in the industrial urban area. The notion of 'extending' relevant and useful information to the adult population at large, predates the university extension movement for its overt use. During the early 19th century, a British politician, Lord Henry Brougham, an influential advocate of formal education for the poor and of mass adult education, founded the Society for the Diffusion of Useful Knowledge¹ in 1826. Its objective was 'imparting useful information to all classes of the community, particularly to such who are unable to avail themselves of experienced teachers, or may prefer learning by themselves'. The society sought to do this largely through producing low-priced publications and establishing local committees throughout the country 'for extending the object of the Society' (M. Grobel, unpublished). Similar, albeit short-lived, societies were also established before 1840 in several other European countries as well as India, China, Malaysia and the United States^{2,3}.

Farm extension service systems in India: public sector initiatives

Extension services in India have traditionally been funded and delivered by the Government. Independent India acknowledged the relevance of extension quite early, a decade earlier than organized attempts to strengthen the agricultural research were initiated in the country. External aid for agricultural development emphasized extension in the 1950s. Community development approach was put into action with two-pronged interventions of Community Development and national extension service that were the Government of India's commitment to deliver the required services in the areas of agriculture, health, animal husbandry, etc. covering all sections of society. As these efforts paid relatively lesser attention to the farm sector, the

need to pay special attention to agriculture was realized. Since the 1960s, many new programmes that aim to raise agricultural production were initiated. Till the 1960s, agricultural extension was purely a function performed under the guidance of the State Departments of Agriculture. Extension was undertaken through integrated approach. A number of development programmes like IADP, IAAP, etc. were launched. The Indian Council of Agricultural Research (ICAR) also initiated some programmes like the Lab-to-Land Programme and the Operational Research Programme that were merged with the Krishi Vigyan Kendras (KVKs) in the 1990s. State Agricultural Universities (SAUs) initiated training programmes (for officials and farmers), demonstrations and exhibitions, and these were strengthened with the establishment of the Directorate of Extension in each SAU for university-based extension education approach. Organizations created for the promotion of specific commodities (commodity-based extension approach) and specific areas also initiated focused extension activities. Extension was treated essentially as a public good, and with only the public sector involved with technology development and transfer, the focus was on spreading the reach of extension to all parts of the country through more extension staff and a large number of programmes⁴. The late nineties witnessed how most of the Indian States embraced the World Bank-funded Training and Visit (T&V) system. This system improved the funding and manpower intensity of extension and also introduced a unified command system of extension. The T&V system that largely ignored the agro-climatic and socio-economic diversity of the country, produced mixed results. Since the 1980s, more and more NGOs, agro-input industries and agro-processors have also become involved in agricultural extension activities. Now farmers' associations and producers' cooperatives and companies are involved in extension services for selected crops and commodities. A large number of extension services are being provided by input agencies, especially fertilizer companies. With the increase in rural literacy, newspapers are devoting more space to reports related to the use of agricultural technology.

Farm extension in India – available alternatives

The arrangements for agricultural extension in India have grown, over the last five decades, in terms of activities pluralism, organizational pluralism and manpower diversity. Irrespective of its performance, public sector extension still continues to be the most important source of farm information in India. The performance of public sector extension is under scrutiny for quite some time and questions are being raised on its capability to deliver goods in the rapidly changing environment. Other extension agencies, be it NGOs, input agencies, mass media, research institutions or farmers associations, etc. are alternatively emerging but are restricted to certain regions, crops and enterprises. The major changes in agriculture that have a bearing on the priorities and performance of agricultural extension are shrinking resource base, changes in demand and consumption pattern, changing farming systems, declining public investments in agriculture and international developments⁵.

The future

Some of the most promising recent developments in extension methodology have occurred where the key focus is environmental and the concern is equity. For example, the need for the joint management of forests by professionals and local forest users, and integrated pest management address both the above issues. Since the scale at which extension support is required is often larger than the individual farm, extension personnel and professionals need new skills of negotiation, conflict resolution, and nurturing the emerging community organizations⁶. The future is definite to witness a trend reversal of bureaucratization within hierarchical extension services and reduction in the public funding. Moreover, a rapid increase can be expected in the use of information technology in support of extension. The forces for change in these areas may come from the following four corners⁷.

Eco-political climate: The public sector extension services and those which

are largely funded by Government shall continue to be under pressure to become more efficient, to reduce their cost and staffing regime, and to share the costs of provisions for their clients in case they are directly benefiting financially. This axiom shall be more applicable to countries where the farm population is sparse and agricultural production is in surplus. This case may be weaker but not predicted to be absent even in less developed countries where, farming households form a high proportion of the total population and where increasing food production is still a focused area. Thus charging clients in lieu of extension services is more likely to become an acceptable norm. At the same time governments may contract out the operation of services to the private or the voluntary sector.

Social context: In the years to come, rural dwellers will undoubtedly be better exposed to education, and their consistent exposure to the mass media shall reduce their isolation and detachment from information, ideas and an awareness of their situation both within the national and international context. Social and economic trends in rural areas will therefore necessitate more highly trained, specialized and technically competent extension workers, who also know where to obtain relevant information and problem solutions, and various provision and organizational forms to replace monolithic Government extension agencies^{8,9}. These agencies have to recognize and serve differently defined clients not in terms of 'adopter categories', rather their access to markets, extent of farm commercialization and relative dependence on agriculture for family income and welfare.

Systems comprehension: Recognition of locale-specific farming systems and the corresponding agricultural information systems which may support them shall be the important force towards the debureaucratization and autonomy of extension services. Such forces also imply that extension workers and farmers necessarily be jointly involved in the verification and adaptation of new technology. Thus the extension workers have to treat farmers as experimenters, developers and adapters of technology rather than 'passive active adopter'. The decentralized extension services in the format of local

organizations are reasonably predicted. Developments in mass media technology, already apparent over a decade ago will continue to support this localization of extension effort¹⁰.

Information technology: The continuing rapid development of telecommunications and computer-based information technology (IT) is probably the biggest actor of change in extension. There are many possibilities for the potential applications of technology in agricultural extension¹¹. IT is likely to bring farmer-centric and user-controlled information service options to rural areas. Even if every farmer is not aware of IT-related paraphernalia, these could become readily accessible at village-based information resource centres, portable decision support systems to help farmers to make right decisions at right time. However, the fear of getting extension workers redundant shall not hold true as they will give more focus to tasks and services where human interaction is essential. For example, helping farmers individually and in small groups to diagnose problems, interpret data and apply their meaning¹².

In the current scenario of changing agri-rural environment, the role of extension education and technology delivery system is also changing. Broad-based extension approaches are the need of the day. Harnessing advances in frontiers of science in selected priority areas with larger spin-off benefits by focusing on basic and strategic research also assume significance. A paradigm shift from single-discipline orientation to multi-disciplinary approach is critical for research in the extension science. Privatization, planning, monitoring, evaluation and assessment as core components of research management process are to be encouraged. The extension education discipline shall demand constant revisions in curriculum for increasing its applicability in National Agricultural Research System (NARS). Thus, the major emerging approaches, including extension education research, production to marketing, collegiate participation of farmers, web-enabled technology dissemination, developing cases as tool and farm innovators as the means for technology dissemination, making agriculture a profitable venture, scaling up of group mobilization and micro-enterprises

promotion need special focus in the years to come.

1. Society for the Diffusion of Useful Knowledge. *Rules of the Society/or the Diffusion of Useful Knowledge*, William Clowes, London, 1826.
2. Smith, H., *The Society for the Diffusion of Useful Knowledge, 1826-1846*, Vine Press, London, 1972.
3. Birner, R. and Anderson, J. R., IFPRI Discussion Paper 00729. IFPRI, USA, 2007.
4. Rasheed, S. V. and van den Ban, A. W., Policy Brief 9, NCAP, New Delhi, 2000.
5. Garforth, C., *Rural Extension Bull.*, 1993, 2, 33-39.
6. Rivera, W. M. and Gustafson, D. J. (eds), *Agricultural Extension: Worldwide Institutional Evolution and Forces for Change*. Elsevier, Amsterdam, 1991.
7. Moris, J., *Extension Alternatives in Tropical Africa*, Overseas Development Institute, London, 1991.
8. Hayward, J., FAO Report of the Global Consultation on Agricultural Extension, Food and Agricultural Organization of the United Nations, Rome, 1990, pp. 115-134.
9. Garforth, C., In *Investing in Rural Extension: Strategies and Goals* (ed. Jones, G. E.), Elsevier, London, 1986, pp. 185-192.
10. FAO, The potentials of microcomputers in support of agricultural extension, education and training. Food and Agricultural Organization of the United Nations, Rome, 1993.
11. Leeuwis, C., Of computers, myths and modelling: the social construction of diversity, knowledge, information, and communication technologies in Dutch horticulture and agricultural extension. Wageningen Studies in Sociology, Agricultural University, Wageningen, 1993.
12. Singh, A. K., Chauhan, J., Singh, S. and Roy Burman, R., *Indian Res. J. Exten. Educ.*, 2009, 9(3), 9-14.

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