

Extension policy at the national level in Asia

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Abstract

Extension is clearly facing challenging times in Asia. This paper draws together experiences from across Asia to explore extension policy and the extension policy process. The paper argues that extension policy in Asia needs to tackle two major sets of issues. The first concerns the content of extension policy in view of the broader role extension need to play in the present context. The second issue concerns the nature of the policy process itself. Instead of prescribing reforms, the policy process should ideally facilitate continuous incremental change through experimentation, reflection and learning. Four cases of recent developments in extension policy and policy process are presented to illustrate the challenges involved in developing and implementing extension policy. The experiences indicate that reform processes only informed by prescriptions generated centrally or from outside are bound to fail. The message for extension policy in Asia is that the process of reform must be lead from within. The paper stress the need for undertaking an institutional analysis of historical and current approaches of implementing different extension approaches and developing capacity within the country on experimenting with different approaches and evaluating them. These learning based approaches should inform policy development. However the existing culture of extension organisations may prevent the emergence of learning based approaches to reinvent extension. Changing these cultures may yet be the biggest challenge of all for reforming extension.

Media summary

Extension policy in Asia, instead of relying on outside prescriptions, should emerge from within based on experimentation, reflection and learning.

Key words

Extension policy process; Extension reforms; Institutional analysis; Innovation Systems; Learning based approaches; Capacity development

Introduction

Agricultural extension in Asia, particularly in low-income countries, is struggling to reinvent itself. For decades the policy emphasis has been on public sector provision of services to extend new technologies to farmers. Public extension has and will continue to play an important role in most Asian countries. Without public funds for extension, substantial public interests are compromised especially those concerned with ecological sustainability and poverty reduction (Katz, 2002). However there is growing recognition that a narrowly defined model of public provision of technology transfer services has outlived its usefulness as an effective agricultural development strategy. The agricultural sector undoubtedly remains important in most Asian countries, but the nature of agriculture and the rural sector more generally is changing and this is placing new and more complex demands on extension.

These new challenges mean that extension and extension policy need to tackle a diversity of objectives that include but go beyond transferring new technology. These include: the need to link more effectively and responsively to domestic and international markets where globalisation is increasing competition; the need to reduce the vulnerability and enhance the voice of the rural poor (Farrington *et al*, 2002) and promote environmental conservation (Alex, *et al* 2002); the need to view agriculture as part of a wider set of rural development processes that include enterprise development and non-farm employment (Rivera, *et al* 2001); the need to couple technology transfer with other services relating to both input and output markets (Neuchatel Group, 2002); and the need for a capacity development role for extension that includes training but also includes strengthening innovation process, building linkages between farmers and other agencies, as well as institutional and organisational development to support the bargaining position of farmers (Sulaiman and Hall 2003). The last decade has also seen the almost universal

questioning of the most appropriate role of the state in the provision and financing of services. At the same time alternative and complimentary service providers from the private and non-government sectors are emerging. It is within these broad contours that extension policy in Asia needs to be considered.

This paper draws together experiences from across Asia to explore extension policy and the extension policy process. Covering a region with 47 countries and significant sub-regional diversity the scope of the paper is limited to presenting the major trends and challenges for extension policy. The paper argues that extension policy in Asia needs to tackle two major sets of issues. The first concerns the content of extension policy in view of the broader role extension needs to play in the present context. The second issue concerns the nature of the policy process itself. Instead of prescribing reforms, the policy process should ideally facilitate continuous incremental change through experimentation, reflection and learning. The four main sections of the paper begin by providing an overview of agriculture and extension arrangements in the Asia region. The next section presents a review of agricultural extension policy and policy processes in the region. To illustrate this, brief examples are given from on going extension policy developments in India, China, Indonesia and Iran. The final section deals with emerging policy issues concerned with improving the effectiveness of extension in contemporary setting. The paper begins by providing a brief overview of recent thinking about the changing nature of extension and its role in agricultural and rural development efforts. This provides a framework for considering extension policy developments and challenges discussed in the rest of the paper.

1. Extension and innovation: an emergent paradigm?

While extension was originally conceived as a way of transferring technology to farmers there is now wide recognition that this task needs to expand considerably (Sulaiman and Hall 2003, Rivera, *et al*, 2001, Alex *et al*, 2002). In the same way the earlier reliance on the development of extension models that could be widely replicated across countries and regions has proved to be ineffective. There is an increasing realisation that new extension approaches need to emerge locally, based on experimentation, learning and adaptation to prevailing circumstances (Echeverria, 2003, Sulaiman and Hall, 2003). This point of view emerges from a growing understanding of the nature of technical change and the recognition of the complexity underpinning innovation processes. Modern theories of innovation suggest that technology and knowledge more generally is often intimately related to its context of development and application (Gibbons *et al*, 1994). While generic crop production technologies can be developed centrally, it is often their local adaptation that allows technological change and innovation to take place. Modern innovation theories also point to the fact that technology development and use are often embedded in a wider set of complimentary activities and relationships. These are often related to the market and involve complimentary inputs such as credit or other forms of knowledge. What this suggests is that ways of promoting agricultural innovation require processes and relationships to adapt and complement new technologies in particular locations. In the same way this locally relevant learning and knowledge creation may take many different forms depending on local circumstances and these may change over time as new challenges and opportunities arise. These ideas are increasingly being discussed in terms of an innovation system.

This view has many attractions given the complex and dynamic challenges of contemporary rural development scenarios. A significant implication is the stronger capacity development role that this perspective suggests for extension. And in this regard capacity development does not relate to training farmers, but that to knitting together the relationships and partners needed to support local learning and innovation. Such an approach suggests incremental and evolving development of extension approaches and the possibility of great diversity emerging. This doesn't only suggest different extension policies are required. It also suggests a different policy process where by policy provides a facilitating framework and principles for local experimentation and learning. Such experiences then inform policy about adjustments that need to be made to principles and facilitating frameworks. Of course this contrasts sharply with the conventional extension policy processes where policy is a centrally generated plan with detailed prescriptions for implementation at the local level. While a more interactive approach to extension policy seems to have many merits, Sulaiman and Hall (2003) have cautioned that it is a significant challenge for extension services and associated bureaucracies to adjust their professional cultures to embrace diversity, autonomy and learning and this is the central challenge for extension policy today. How then are extension policies in Asia faring in these challenging times?

II. Agriculture and extension arrangements in the Asian Region

The rural population of Asia, one third of the world's total, depends almost entirely on three activities: agriculture, forestry and fisheries. Dependence on agriculture is significantly higher for more than half of the countries in the region. Most of the Asian countries initiated measures to strengthen domestic food production during the last 50 years, many after attaining independence. The Central Ministry of Agriculture in each of these countries had taken the lead in planning, financing and implementing strategies for agricultural development. This has often been in association with the provincial, prefecture or state administration. This trend still continues in all countries, although the private sector participation in agriculture has increased in the last two decades. Table 1 summarizes the nature of the agricultural sector in the main Asian sub-regions and provides details of major patterns of agriculture and rural development.

Table 1: Major patterns of agricultural and rural development in the Asian Sub-region

Zones	Countries	Importance of agriculture	Patterns of agriculture and rural development
South Asia	Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka.	Agriculture contributes a significant share of GDP in this region and provides employment to more than 50% of the work force throughout the region. Dependence on agriculture significantly high in India, Bangladesh, Pakistan and Nepal and Sri Lanka.	Greater number of undernourished and poor than any other developing region. Highest rural population density, predominantly small farm agriculture, significant increase in production and productivity of food crops in irrigated regions. Except Afghanistan, all other countries have the necessary extension infrastructure. Training & Visit (T&V) extension was implemented in Bangladesh, India, Nepal, Pakistan and Sri Lanka
South East Asia	Brunei, Cambodia, Indonesia, Laos, Malaysia Myanmar Philippines Singapore Thailand, Vietnam	Agriculture employs large proportion of the work force in all countries except Singapore. Dependence on agriculture is significantly high in Cambodia, Laos, Myanmar and Vietnam	Indonesia and Malaysia has a well established plantation sector comprising large estates. Rice is the most important crop and has seen significant production and productivity increase. Extension infrastructure relatively well developed in Malaysia, Indonesia, Thailand and Cambodia. T & V extension was implemented in Indonesia, Malaysia, Thailand and Philippines.
East Asia	China, Hong Kong, Japan, Korea DPR, Korea Rep, Mongolia, Taiwan, Timor	Except Hong Kong, agriculture is an important economic activity for all other countries in the region. Agriculture employs large proportion of the work force in China, Korea DPR, Mongolia and Timor.	Japan and Korea Rep are the most agriculturally advanced countries in the region. A well-established extension infrastructure exists in Japan, Korea Rep, Taiwan and China.
Central Asia	Kazakhstan Kyrgyzstan Russian Federation Tajikistan Turkmenistan Uzbekistan	Agriculture employs a large proportion of the population in this region.	Countries in a complex process of transforming their political and economic systems. Lack an organised and technically competent extension system and steps are currently being taken to establish them.
West Asia	United Arab Emirates, Bahrain Iran, Iraq, Israel Jordan, Kuwait Lebanon, Oman Palestine, Qatar Saudi-Arabia Syria, Turkey Yemen	Agriculture employs a significant proportion of the population in Iran, Palestine, Syria, Turkey and Yemen Agriculture is an important item of commerce for Israel though it employs only around 2% of its workforce.	Israel has the most technically advanced agriculture in the region and has one of the most successful extension systems. Yemen implemented a T and V approach of extension for five years starting 1985.

Rural Asia has undergone unprecedented technological and economic transformation in recent decades. This has dramatically improved the region's food security, with significant reduction in poverty and raised incomes. Despite these achievements more than 670 million rural people (one third of the rural population in Asia still live in poverty (ADB, 2000). Poverty is widespread in many of the less favoured agricultural regions that had been largely bypassed by introduction of improved cereal technology packages commonly referred to as the Green Revolution. Agriculture will continue to employ a large proportion of the rural population in Asia in the coming years. Underpinning this trend is the slow or moderate economic growth in general and lack of adequate opportunities in other sectors of the economy. The deteriorating natural resources base and increasing deregulation of trade has added new challenges to Asian agriculture. This is particularly so because the sector is dominated by small farms often with weak bargaining powers and limited political voice. There is considerable scope to increase rural incomes through increased productivity, enhanced competitiveness and creation of efficient marketing systems. But this would only be possible through the development of an improved agricultural and rural innovation system that can quickly respond to the rapid changes. This should be supported through adequate investments in rural infrastructure. Extension services can and should assist this process. But to perform this role, extension services need to undergo significant institutional reform.

Extension arrangements in all the Asian countries reveal a large degree of similarity in terms of its organisation and underlying conceptual framework. These are as follows: Firstly, extension continues to be planned, funded and implemented by Departments or units attached to the Ministry of Agriculture and almost all of them are organised in a top-down fashion, mainly supply driven, implementing the programmes conceived by the state with little participation from farmers and other agencies and with little accountability to the clients. Several countries in South and South East Asian Region implemented the Training and Visit (T&V) system of extension in the 1980's. Extension services were decentralised in many countries. This was part of a wider initiative to decentralise governance initiated by many governments. Although it has improved farmer control and made services more demand driven, lack of sufficient preparation on the part of extension management and the huge institutional inertia of large extension bureaucracies have considerably weakened extension. The results have been disastrous in Philippines, Indonesia (Quamar, 2002) and Pakistan (Malik, 2003) with extension services virtually collapsing as a result of weakening financial and technical support.

Secondly, technology dissemination continues to be understood as the primary and often the single mandate of extension. Inadequate technology adoption has been attributed to existing weaknesses in research-extension linkages, although several measures in many countries to address this have been taken during the last two decades (Sharma, 2003). Declining public funding for extension has led to inadequate operational budgets for travel and training and this has adversely affected extension performance. Distant and remote areas are often poorly served by the public sector and in addition are weakly integrated into the market with limited private sector activity.

Thirdly, pluralistic institutional arrangements are emerging and this is finding wider acceptance everywhere. Farmer associations are equal partners in extension in countries such as South Korea and Taiwan. In Israel, farmers even "contract-in" certain services. China is currently encouraging constitution of farmer associations to take up various production, marketing and extension functions. NGOs and the private sector play an important extension role in India, Bangladesh, Malaysia and Sri Lanka. Extension provision by private companies to farmers growing crops under contract is gaining importance in China and India.

Fourthly, countries increasingly realise the need for extension to engage with a wide range of issues beyond disseminating technologies. This has raised the need for better-qualified and specialised extension staff to meet the changing information and technical demands of farmers. Similarly it is now recognized that there is need for extension to play a greater adaptive research role to better target technologies at the field level and to provide organisational and marketing support to farmers. However playing this wider role requires large-scale restructuring and institutional change, which, by and large, the extension bureaucracies have been reluctant to undertake. Reinforcing this reluctance is an extension policy dialogue that continues to be couched in terms of a narrow conceptualisation of extension as an agency transferring technology and improved practices from research stations to farmers.

Fifthly, with a few exceptions, all countries in the region do not have an explicit extension policy. India has a Policy Framework for Agricultural Extension (DAC, 2000) and Bangladesh has a New Agricultural Extension Policy (DAE, 1999). But the available evidence indicates that having an extension policy is not a sufficient condition to guide change. Policies also need to address the crucial problems involved in implementing change (Sulaiman and Hall, 2002). Quite often, policy related to extension stems from changes in country development plans (Malaysia, Indonesia, Iran); donor interests (T&V); changes in agricultural and rural policy (China, Vietnam); or change in governments (Pakistan, Philippines). Extension services have always tended to respond to changes taken by other systems and have rarely guided changes in extension or rural development policy.

III. Agricultural Extension Policy and Policy Process in the region

The FAO Global Consultation on Agricultural Extension (1990) recommended that “all national governments should develop and periodically review their agricultural extension policy. The policy should include the goals of agricultural extension, the responsible agencies and personnel, the clientele to be served, the broad programmatic area to be addressed and other relevant guidelines. In developing national agricultural extension policies, representatives of all major groups of farmers should be directly involved and other relevant agricultural organisations should be consulted. By pursuing a comprehensive policy, countries can expect the extension system to contribute to increasing agricultural productivity and farm incomes, and to improving the quality of life of most rural farm households in pursuit of the general goal of growth with equity” (Swanson, 1990).

However most of the countries have not taken this recommendation seriously and even after a decade, only a few governments such as India and Bangladesh have attempted to develop a formal extension policy. Extension policy changes are often made through decrees and proclamations and only in rare cases it is legislated. For instance, Japan enacted the Japanese Agricultural Promotion Law of 1948 and provided funding for Japan’s Co-operative Agricultural Extension Service. Similarly Agricultural Extension Policy in South Korea is embodied in the 1957 Agricultural Extension Law and in the Rural Development law of 1962 (Contado, 1997). After the end of external funding for the T&V system, several countries made ad-hoc changes in extension approaches mainly to tide over the increasing financial liability of increased manpower the T & V created and also to reach directly to more farmers. In India, states responded in various ways depending on the local situation (Sulaiman, 2003) and this process continues even though there is a policy framework for agricultural extension at the national level. Bangladesh adopted the New Agricultural Extension Policy in 1996. Of particular emphasis in both the Indian and Bangladesh extension policies is the emphasis on promoting partnership among all extension providers, namely the GOs, NGOs and the private sector. However, lack of a shared understanding among the central and lower management levels on the importance of new agricultural extension policy and the inability to make the necessary cultural change currently constrain the development of a partnership mode in extension (Uddin, 2003).

In the case of Malaysia, the Third National Agricultural Policy (1998-2010) has given the impetus for change in approaches and functions. Keeping in view the goals of maximisation of income, a greater role for the private sector and increased competitiveness of Malaysian agriculture, the mission statement of the Department of Agriculture currently includes, provision of quality advisory and consultancy services to farmers, entrepreneurs and private sector. A private-public co-ordination council has been established at the government level to plan and co-ordinate activities. In Vietnam economic reforms known as “doi moi” have shifted power away from central authorities towards groups of more autonomous actors. Extension in Vietnam is relatively a new phenomenon, embarked upon in 1993. It was associated with the land reform process which changed land tenure from collective to household ownership. The formation of policy and an organisation for extension is therefore gradually developing and finding its form. Ministry policy documents mention the objective to gradually move towards cost sharing of extension services for commercial production, and subsidised services in the remote mountain areas (Farrington, *et al*, 2002).

In Central Asia, the countries that exercised socialist policies for many years are struggling to shift to a market oriented economy. Thousands of new farmers who currently own private land are desperately in need of extension services. To exploit their full potential in agriculture, appropriate national extension systems have to be established through institutional reforms and backed by national policies (Qamar, 2002).

Since the beginning of the 1980s, a rural reform policy has been initiated in China. This has been part of fundamental economic reforms that China has undertaken, particularly the opening up of the economy to global markets in the last 20 years or so. The mission and goals of rural extension were reinvented in China to meet the changed situation and China is perhaps the only country in the region that is expanding its extension infrastructure and experimenting with several new strategies. Indonesia shifted its paradigms of agricultural development in response to the second 25 year Development Plan that began in 1993. To revitalise small-scale farming and to realise economies of scale, a group approach to farming is followed at present. Based on Public Law No.22/1999, the district governments are directly responsible for planning and implementation of extension activities at the district level. In Pakistan, based on the devolution plan of 2001, all service delivery line departments including agricultural extension were transferred to the district governments. Devolution has marginalised extension services in both Indonesia and Pakistan. In Sri Lanka, responsibility of agricultural extension in non-plantation agriculture was devolved to provincial councils in 1989. The Extension, Education and Communication Service (SDRE) of the Food and Agricultural Organisation (FAO) currently assists Yemen, Indonesia, Iran and Philippines to help them establish and/or strengthen their devolved extension services (Rivera, *et al*, 2001).

In the case of Iran, the status and role of agricultural extension is still a matter of dispute due to lack of a clear policy on what it has to do and which could be the ideal ministry or organisation in the government that extension should be linked to. In Israel, the national extension service, SHAHAM, continues to be operated as an arm of the Ministry of Agriculture and Rural Development, although it has introduced increasingly more elements of privatisation and financing by users. Agricultural extension service fulfils advisory and applied research functions and provides technical consulting services to the management of the Ministry of Agriculture in formulation of its agricultural policy.

Except the Israeli extension service, no other extension service play any role in formulating the country's agricultural policy. Quite often extension was found to simply respond to changes imposed on its functioning. The private sector, farmer's organisations and the NGOs are not given any role in the formulation of extension policies and programmes in most Asian countries. However mechanisms for regular consultations with NGOs and farmer representatives on issues related to agriculture and fisheries have been created in the Philippines. The (Philippine) National Agricultural and Fisheries Council (NAFC) is an inter-sectoral and inter-agency body having representation from peoples organisations and NGOs engaged in agriculture and fisheries sector. NAFC facilitates regular consultations and dialogues between government and the private sector. Agricultural and Fishery Councils have been set up at the sectoral, regional, provincial and municipal levels, involving farmers, fishers, traders, rural bankers and agri-business entrepreneurs to provide inputs on major programmes and policy decisions and help plan and monitor programmes. In order to illustrate some of these development and challenges in extension policy the next section provides a more detailed discussion of the situation in 4 major countries in this region, namely, India, China, Indonesia and Iran.

India

Agriculture contributes about 24% of the GDP and employs about 57% of the total workforce in India. Every state in India has the authority to legislate on matters related to Agriculture. In terms of number of staff and organisational reach, the public sector state Department of Agriculture (DoA) continues to dominate extension provision. A large number of private agencies provide advisory and other support services to farmers. Most of them are restricted to certain regions and selected crops. However public-private partnership is very limited. There are very few farmer organisations. Technology dissemination continues to be understood as the main extension role. The post T&V period saw several states introducing: decentralisation (extension planning and control under elected bodies at the district/block level); contracting NGOs for some extension activities, adoption of a group approach (instead of the earlier individual approach); use of para-extension workers (as substitutes for field extension workers of the DoA); setting up multi-disciplinary teams from the State Agricultural Universities at the district level; setting up of agri-clinics by private entrepreneurs; and formation of registered society known as the Agricultural Technology Management Agency (ATMA) at the district level by integrating the functions of key local stakeholders involved in agricultural development. However, the DoA still faces several constraints in providing adequate extension support to farmers. Remote areas and poor producers

(especially those growing low value crops and having limited marketable surplus) are poorly served by both private and public sector extension.

The Ministry of Agriculture, Government of India brought out a draft Policy Framework for Agricultural Extension (PFAE) in 2000. The Ministry initiated consultations with the state governments and the private sector on this draft document. Highlighted are the following measures suggested in the PFAE : adoption of farming systems and farmer participatory approaches; enabling problem solving skills of farmers; provision of public funds for private extension; privatisation of *private-good* elements of extension in favourable areas; provision of cost recovery and co-financing via farmer groups; use of para extension workers and farmer interest groups in extension; employing more subject matter specialists; single window services (meaning)at block(an aggregate of about 100 villages) level (ATMA model); preparation of strategic research and extension plans; improvement of research-extension-farmer interface; improvement in women's access to technology; provision of market information; wider use of information technology; promotion of linkages with agro-processors and creation of an enabling environment for private sector.

Though the broad contours of policy changes suggested are well considered and relevant, the PFAE underplays crucial implementation problems of introducing reforms (Sulaiman and Hall, 2002). Of particular concern is the wider institutional framework of public extension and the restrictions this imposes on the introduction of change and the development of new approaches. A central concern is the current organisational culture of the extension service and associated issues related with public sector governance in general in India. This include; rigid professional hierarchies and patterns of control, with highly centralised modes of planning which stifle deviation from prescribed procedures and restricting innovation (both technological and institutional) by middle and lower level staff; a tradition of assessing performance in technology adoption and hence a focus on improved technology transfer at the expense of other activities that may have a perfectly legitimate role in supporting farmer; a history of rewarding successes and thus a reluctance to report and analyse the reasons for failure for, instance, non-adoption of technology; a history of working independently and a mistrust of other agencies; and a tradition of upward accountability for resource utilisation rather than output achievement and client satisfaction. There has been no attempt to address these crucial issues. The reforms suggested in the PFAE will not by themselves reinvent Indian agricultural extension unless they are accompanied by a much more explicit agenda of institutional learning and change for the public agencies involved (Sulaiman and Hall, 2003). The case of India suggests that there is a need to close the gap between policy prescription and policy implementation. The policy process probably needs to take stock of recent developments and experiments in the area of extension and think about ways in which it can create stronger functional links between ground level realities and policy formulation.

China

Agriculture accounts for about 15% of the GDP and employs 66% of the total work force in China. Since the beginning of the 1980s, a rural reform policy has been initiated. First, collectively owned land resources were contracted to individual households for long periods (more than 30 years) and farmers now have right to decide how to use the land. Government has also gradually reduced its control of the agricultural market. These reforms brought new challenges to the extension system. Since the market oriented economic system was established, the subjects of rural extension have been expanded and diversified according to local resource and market development. Current functions include: transfer of technologies; providing market information; creating market organisations; and assisting purchase of production inputs and promoting rural enterprises. Extension operates through technical demonstration households, village leaders, farmer associations and farm households. Since 1985, the central and provincial governments have invested about 1.2 billion Yuan (145 million US \$) for the construction of county centres and the number of extension staff paid by the government and working at the township level has reached 1 million (Yonggong,1998).

Apart from the conventional extension approach that implements government plans through public extension agents, China employs other innovative extension approaches, such as technical contracts between farmers and extension agents, the (private) company led extension approach and participatory extension approaches. Technical contracts are signed between extension agents and farmer households and under this approach the extension agent provides technical training, on-site supervision and

instruction during the production period. The approach is mostly applied in horticulture, cash crop production and livestock production systems. The agent and the farm household share profits and risks under this arrangement. Under the company led extension approach, companies provide relevant technologies, training and information to farmers who enter into contract farming arrangements. To develop farmers' abilities and skills in sustainable rural development, participatory extension programme has been introduced. The community is the basic unit for implementing participatory extension programmes and farmers participate in all extension processes such as project appraisal, monitoring and evaluation. Extension priorities have been identified for the 7 different geographical regions (based on agro-resource planning) and for the three economic zones (based on average income and GNP).

The national extension institution, the National Agricultural Extension Centre, working under the Ministry of Agriculture, formulates extension policy at the national level. This centre draws up extension programmes that link agricultural development programmes, connecting institutions with other national agencies and training and supervising provincial agents. Provincial institutions under the Department of Agriculture, act as professional agencies of the national extension centre and these centres are involved in formulation of policy, co-ordination of relevant agencies and training of lower level agents. There is a high level of governmental policy orientation and limited participation of farmers in the planning, implementation and evaluation of extension programmes. Recent analysis (Yonggong, 1998) suggests that some of the weaknesses of the Chinese extension system include: insufficient qualifications of extension staff; inadequate professional and institutional linkages between research and extension; and insufficient co-operation and co-ordination with other agencies involved in planning and credit. While the Chinese extension policy is weak, implementation and innovation in extension approaches at the local level is strong. Experimenting with such diversity of approaches would not have been possible within a centrally decided extension policy for all regions. This indicates the need for facilitating the local development of capacity to innovate appropriate policies and approaches.

Indonesia

Agriculture contributes approximately 35% of the total GDP and currently employs about 43% of the working force in Indonesia. Agriculture has a dualistic structure, i.e. small-scale agriculture involving nearly 24 million farm-households covering about 142 million ha, and plantation agriculture operated by about 2000 estates covering approximately 22 million ha. Under the second 25 year Development Plan which began in 1993, Indonesia moved from centralised planning to decentralised planning. Emphasis shifted from increasing agricultural production to increasing farm income; from production of primary commodities to agri-business in rural areas; from labour intensive technology to capital intensive technologies; from import substitution to one led by agricultural exports; and from a dominant government role in economic development activities to greater participation by the private sector.

The Ministry of Agriculture is focussing on creating a policy environment to foster private sector development and market efficiency. Steps to revitalise small-scale farming are being taken by introducing an agri-business approach to commodity based farming systems. The approach is to identify a primary commodity or produce based on market preference and co-ordinate groups of neighbouring farmers and make them into groups to realise economies of scale (Suryana and Erwidodo, 1996). To address the research-extension linkage issues, Indonesia has established new institutions called the Agricultural Technology Assessment Institute at the provincial level to bring together farmers, researchers and extension specialists (Kadir *et al*, 2003).

Law No 22 on Government Autonomy describes the responsibility and authority of central government, provincial government, as well as district government in implementing and in managing extension. The authorities decentralised to district governments are related to the planning and implementation of extension activities and provision of direct services to farmers and the community. Decentralised management of the agricultural extension programme predicted the following potential benefits: an opportunity for districts to select and decide on the activities to meet the needs of local farmers and a mechanism to increase farmers' confidence in implementing programmes by farmers themselves. However during implementation it has emerged that the agricultural extension institution was not fully prepared to manage decentralised extension (Zakaria, 2003). Many members of the district council do not have a correct or complete understanding of the concepts and roles of extension and agriculture development.

The responsibility to provide funds for salary and operational activities becomes the responsibility of the district government. Due to limited district government funds, many districts cannot provide sufficient funds to pay salary and operational costs of the extension staff. The allocation of available funds in the district depends on the political struggle and conflicting of interest of the members of the district council. At the same time the political voice of farmers is still weak. The success of decentralised extension implementation depends on the way the participatory extension concept and methodology is perceived and understood by members of district councils, district governments, top officials, officers, private sector, farmers and non-government organisation and there is a need for intensive socialisation of decentralised extension policy (Zakaria, 2003). So in one sense, decentralisation, while part of a process of introducing more democratic modes of public planning and service provision, also needs to be supported by the cultural and institutional changes at the local level required to accommodate such approaches. Extension policy clearly needs to facilitate these changes and incremental developments.

Iran

Agriculture contributes 27% of GDP and 27% of the workforce is engaged in agriculture in Iran. The Department of Agricultural Extension became a part of different organisations and Ministries during the last five decades. In 1953, the integrated institution of agricultural extension was formed within the framework of an independent instructional organisation under the auspices of the Ministry of Agriculture. In 1973, the implementation of projects to increase agricultural production was entrusted to the Agricultural Extension Department. This diluted its earlier educational and training role as it began to focus more on the provision of loans and credit, preparation and arrangement of works, and handling distribution of seeds. Following the objective of developing a meaningful relationship between research and extension, the agricultural Extension Organisation was merged with the Agricultural Research and Education Organisation in 1993 and the newly formed establishment was named Agricultural Research, Education and Extension Organisation (AREEO).

In 1978, after the culmination of the Islamic revolution a chain of establishments including the organisation of Jihad-e-Sazandegi was founded. The main objective of creating this organisation was to provide preliminary assistance for farmers and the rural community across the country and to rehabilitate and develop the rural areas. The Ministry of Jihad-e-Sazandegi implements its programmes through the Rural Islamic Councils (which are supervised by the Ministry of Interior), and work through rural co-helpers who are elected by the Islamic council as facilitators for rural development. This organisation was upgraded to the level of a Ministry in 1990. Thus there were two Ministries that were involved in agriculture in Iran until 2000; the Ministry of Agriculture that was mainly involved in agronomy, horticulture and related research, education and extension; and the Ministry of Jihad-e-Sazandegi that was in-charge of animal husbandry, fishery and natural resource management. In 2000, due to problems caused by the separation of two Ministries, it was decided to re-merge the two Ministries into an integrated Ministry of "Jihad-e-Agriculture" or Agricultural Jihad. This was done with the primary objective of downsizing governmental organisational structures; integrating plans and policies related to agricultural and rural development; and to undertake more projects and programmes by provincial and regional levels for decentralisation purposes (Heidary, 2001)

One of the major problems affecting agricultural extension in Iran is the ambiguity in its position (Gharehyazi *et al.*, 2003). Under AREEO, extension was linked with research and it has been doing more of professional extension and transfer of findings. Under the Ministry of Jihad-e-Sazandegi, extension activities were not combined and integrated with research and education. In fact, such activities were carried out under the supervision of Deputy Minister for Extension and Peoples' Participation. After the merging of the two Ministries, extension has become a matter of dispute. The issue of whether extension should be completely integrated with research or separated from it is yet to be fully resolved. Serious budget shortages and in particular lack of funds for hiring extension personnel and minimal access to transportation facilities are also notable.

The present confusion on where extension should be attached may not be fully resolved as long as the role and functions of extension remains undefined. Clearly it has roots in education, research and rural development, but locating it in any of these three camps will fail. Becoming a part of the wider rural development sector can potentially help extension to broaden its mandate. To play a meaningful role,

extension should ideally build relations with a wide range of actors in development and research-extension linkages is only one among them. Quite often, policy changes happen all of a sudden with total change in roles and functions implemented throughout the country. Ideally policy reforms should be a continuous process with experimentation of different kinds of approaches in limited scale and learning from these changes should inform the development of policy. Lack of such an approach is quite evident in this case.

IV. Emerging issues in extension policy in Asia.

Extension is clearly facing challenging times in Asia. The country studies illustrate four different and informative modes of extension and extension policy development. In the case of India, like a number of other Asian countries, extension policy is developed centrally in a fairly prescriptive fashion. Although approaches have evolved over the long term, it is not clear how implementation experience and learning informs policy development. In fact development fads and encouragement from international agencies seem to be a major source of implementation. From T&V, the approaches have now shifted to pluralism in extension financing and service delivery. While these new objectives might be laudable at a general level, ways of making them work on the ground is much harder to define. Furthermore these major shifts tend to lock up the extension in a particular mode of operation until yet another new idea comes along. For countries suffering from this policy trend, approaches that encourage learning and incremental institutional change are long over due.

The case of China illustrates a quite different approach to policy and practice in extension. In China the challenges of major economic and indeed social reforms over the last 20 years have galvanised local agencies associated with extension to respond in flexible and meaningful ways. Arrangements have been restructured to help farmers relate to new market opportunities more effectively. Arrangements have even been developed to provide incentives to extension workers through profit sharing with farmers. The extension policy on the other hand has been fairly haphazard and weak in prescribing what should be done. But it does seem to have been sufficiently reactive to provide the facilitating support to assist and presumably legitimise the types of pragmatic extension innovations that have been taking place at the local level. There seems to be much merit in an extension policy process in which it is extension agents, farmers and others in the rural areas who drive the development of new ways of approaching the topic. This seems to be particularly important in situations where the economic and social context is changing rapidly and in unpredictable ways.

The case of Indonesia again illustrates a trend that many Asian countries are following, namely decentralisation. The case highlights the gap between the broad policy prescription for an approach such as decentralisation and the reality of how these approaches can break down in implementation. While the policy was originally (and laudably) conceived as a way of devolving authority and decision making to local stakeholders and strengthening linkages in local knowledge networks, neither this vision nor the skills to implement it were shared by those at the local level. This seems to suggest that policy instruments such as decentralisation need to be accompanied by capacity development. In this case local stakeholders need to understand the importance and rationale for strengthening local network. And since the performance of extension is dependent on these systems, stakeholders need to have the skills to analyse these systems, diagnose system failure and design remedial measures. These types of capacity development are not only necessary to successfully implement these decentralised approaches, but they are also necessary if local stakeholders are to play a more interactive role the policy process.

The case of Iran is perhaps not as unusual as it seems. Many countries in Asia have undergone radical social change with the attendant process of fundamental changes in the arrangement of government departments such as extension. Perhaps what is even more familiar is the way extension has been passed between agencies responsible for education, research and rural development. The trouble is that extension belongs in all three and there is practically no way of reconciling a policy debate about which disciplinary or sectoral structure it best fits into. The possible way to resolve this seems to be for policy to start and think about extension in a more systems orientated fashion, working towards breaking down some of the disciplinary and functional distinction between extension and related responsibilities of government. As seems to be the case in so many instances, ways of doing this can't really be prescribed, but will need to be approached experimentally.

Given the above it seems that extension policy needs to tackle two major sets of issues. The first concerns the content of extension policy and the urgent need to redefine the role and form that modern extension arrangement should play in the contemporary development scenario. The second issue concerns the nature of the policy process associated with extension and the increasingly untenable approach whereby policy prescriptions (sometimes responding to international fads) are disconnected from ground realities and implementation challenges.

Policy challenges

The need for extension reforms in Asian countries is widely acknowledged. Driving this is the need to meet the diversity of objectives relevant to contemporary agriculture and rural development. Without reform, public extension services in Asia will become ever more irrelevant and will lose the political support needed to fund them. The new vision of extension has to pay much more attention to ways of addressing the welfare needs of farmers in rapidly changing rural scenarios. This may be related to accessing credit and other production inputs. It may also be about strengthening the voice of the farmer, particularly the poor. However the biggest change concerns helping farmers maintain and build profitability in increasingly competitive markets. Another feature, which now seems to be fairly universally acknowledged, is that extension will need to involve greater participation of a wider set of stakeholders including the private sector. A new vision of extension as a locally defined set of approaches that evolve and adapt to meet changing circumstances, suggest that having a national policy is not enough. The capacities of the state and district officials to innovate new and appropriate institutional arrangements need to be enhanced. The case of Indonesia amply illustrates this point.

Policy process challenges

Emerging from much recent experience is the need to move away from a prescriptive top down policy process to one which is more interactive and that iterates between policy and implementation experience. In fact conceiving extension as a set of approaches and tasks which are to a large extent locally defined, suggest that not only does the policy process need to be quite different, but that also the role of policy also needs to change. For example, at one extreme is the case of India with its centrally devised initiatives that can lock extension into long-cycle extension paradigms. At the other extreme seems to be the case of China where extension innovations emerge continuously from the extension practice, with extension policy providing an enabling environment. This is not to say that extension innovations in countries similar to India don't occur – they certainly do. The difference is the ability of the policy process to respond to these innovations and the understanding that the role of policy is to enable rather than only prescribe.

V. Ways forward

For many agricultural extension systems it is all too easy to define the broad contours of institutional change needed to reform agricultural extension to meet the changing demands placed on it. The current prescriptions include: decentralisation, pluralism, privatisation, cost recovery and so forth. The history and recent developments in Asia illustrates that reform processes only informed by these prescriptions is entirely misconceived and doomed to fail. Now as ever before, the message for extension in Asia it that the process of reform must be lead from within. And it must be driven by learning about what works and what doesn't and by the nature of local circumstances and context. An analogous initiative in the CGIAR known as the institutional learning and change initiative is trying to do precisely the same thing for agricultural research. These type of approaches stems from the realisation that improving the performance and capacity of a system concerns reflection, learning and incremental change. If extension policy is to pursue such an approach what practical steps could countries take?

A first step would be to undertake an institutional analysis of historical and current experiences of implementing different extension approaches. This should focus on successes and failure and should be undertaken in a constructive manner to devise ways by which these approaches could be modified, bottlenecks removed and institutional arrangements amended. It maybe surprising that currently there are very limited studies and analysis of the extension sector, and these are usually not used in extension policy development and planning. Once again this approach require capacity development as local expertise for analysing complex systems such as extension is lacking at the country and sub-country level(even in India). Without this sort of capacity development countries will remain dependent on international experts to suggest country strategies, models and blue prints.

The next step is to set up extension pilot schemes as experiments in extension. While this in itself is nothing new, such experiments coupled to local capacities in institutional analysis could be used to start and draw broad principles for promoting innovation in rural areas. The contrasts with the conventional approach of establishing pilot extension schemes with a view to refining a new model prior to replication across regions and countries. The final point is that these learning based approaches to reinvent extension need to battle for legitimacy in often highly conservative organisational cultures. Changing these cultures may yet be the biggest challenge of all for reforming extension.

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