Adapting Elements of the US and UK Extension Systems to a Chinese Market-Based Model

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Abstract
The agricultural extension system in China has gradually transformed from being administration oriented to income-generation oriented under a market-based economy. The current extension system addresses the importance of rural development in view of China’s overall economic development and this change reflects decentralization, cooperation, and commercialization in the system. Today, individual farmers and households have become more effective producers and better decision-makers compared to the directed labor force in the centrally planned economy. The government has, to certain extent, given up its centralized planning function. This paper is intended to provide insights to the changes in the extension system in China due to the evolving economic reforms. The mission and goals as well as four major extension approaches are discussed in this paper. By highlighting the features of US and UK extension systems, it is proposed that some of these new elements could be adapted into the evolving extension systems in China.
Introduction

China has the largest extension system in the world but it is organized and managed very differently from the extension system in the US and UK (Bartholomew, 1994). For a better understanding of rural extension reform in China, it is necessary to review the former extension system, which has existed for more than 30 years between the 1950s and the 1980s and is still a dominant structure in today’s system.

A top-down extension approach was adopted during the period of collectivization (1953 to 1958) and the People's Commune (1958 to 1982). The basic extension method used in the top-down approach was “administrative intervention.” Agricultural extension was seen as a government instrument for implementing the agricultural development program, and a number of extension programs were implemented as political campaigns. During this time, it was difficult to separate extension activities and government administration activities (Liu, 1998).

Programs concentrated mainly on transferring the technologies developed in research institutes to production brigades and teams. The goal of extension programs under such a system was to ensure adequate grain production. Research, demonstration and extension activities were established according to this policy. Extension system was narrowly defined to only promote grain production. Alternative programs for diversified sectors, such as cash cropping, animal husbandry, fruit tree cultivation, and off-farm activities were not included. The main role of farmers in the top-down extension system was to attend demonstrations and participate in trials, which were selected according to the government's priorities. Farmers were not usually involved in extension planning and evaluation (Liu, 1998).

As Liu (1998) notes, the advantage of this approach was that extension activities were linked to the administrative line (a four-level agricultural technical network), making it easy to implement programs. The disadvantage was that the programs were focused closely on government policy that different socio-economic conditions and resources in the communities were not given sufficient consideration and local interests were poorly represented. This sometimes led to conflicts and it did not improve agricultural productivity.

Purpose of the paper

The purpose of this paper is to provide insights to changes occurring in extension system in China due to the evolving economic reforms. By highlighting the features of the US and UK extension systems, it is proposed that some of these new elements could be adapted into the evolving extension systems in China.

Theoretical/Philosophical themes

Changing role of Chinese agricultural extension

Policy and system-wide changes in agriculture have been the rule in China over the past 20 years. The transition from a planned to a market-based economic system has shifted the Chinese extension system from administration-oriented to income-generation system. Initiation of the household responsibility system since 1978 further challenged the former extension system as collectively owned land was returned to the individual family farmer. Today, individual farmers and households have become more effective producers and better decision-makers compared to the directed labor force in the centrally planned economy. In other words, the government has, to certain extent, given up its centralized planning function (Wang and Van Den Ban, 1995).
Agricultural extension, as World Bank defines, is the process of assisting farmers to become aware of, and to adopt, improved technology from any source to enhance production efficiency, income, and welfare (World Bank, 1994). As Roling (1988) indicates, extension is a deliberate intervention system meant to achieve the intervener’s goal, but this can only be effective when individuals are willing to voluntarily change. Therefore, as Chinese farmers gain more freedom to make their own management decisions, extension should have more opportunities to play a larger role in helping farmers to make informed decisions.

US land-grant universities: an institutionally integrated system

In the US, land-grant universities have delivered extension programs for more than one century. As summarized by Seevers, Graham, Gramon and Conklin (1997), the Cooperative Extension System in the US is a national education network that links research, science, and technology to the needs of people where they live and work. The idea of taking the university to people is further stressed through the mission of the university. The mission of Cooperative Extension is to enable people to improve their lives and their communities. Cooperative Extension accomplishes its mission by offering practical education for Americans to deal with issues that impact their daily lives and the nation’s future.

Commercialization of British extension system

During 1946-mid 1970s (post war period and beyond), Britain established National Agricultural Advisory Service (NAAS) to fulfill their agricultural extension efforts. NAAS services were offered in four areas comprised of agricultural land service; veterinary service; land drainage and water supply service. NAAS work was aimed at maximizing food production. The methods used in their service included technical advice, research and development trial work, and subsidies.

In 1971, the Agricultural Development and Advisory Service (ADAS) was formed by unifying the four previous technical services to give a “whole farm” approach. ADAS roles were educational, advisory, service agency, public relations (promoting agricultural policies) and statutory and administrative arm of government. During mid 1970s to mid 1980s, agriculture entered the period of over-production due to the rapid development of technology and other social and economic changes at the time. As a result, increased cost of subsidies, and growing environmental awareness became a matter of concern. To deal with the problems, ADAS moved further away from government and commercialized their services in 1992. This reform has shifted agricultural extension services to a clientele-supported basis. In this system, farmers became clients and business prospects while the ADAS staff became advocates, endorsers, account managers, and relationship managers (Northridge, 2001).

The ADAS’s mission today as stated in its Web site “is to be the leading UK provider of research and consultancy to land-based industries, working with its customers through the provision of quality services for the benefit of their businesses” (ADAS, 2001).

The main goal of ADAS, prior to 1987, was to foster a competitive agricultural industry by transferring educational information and by promoting the adoption of sound business and marketing practices. Today, the main function of ADAS is to be the leading constancy to farmers and agribusiness in Britain by working with clients to provide quality services.
Results

Missions and goals

In response to the changes in economic and agricultural system, the missions and goals of public extension have been adjusted accordingly. The current mission and goals of extension system reflect the importance of agricultural and rural development in view of China’s overall economic development, diverse functions of the system, and emphasis of farmer’s interests and needs. Liu (1998) summarized missions and goals of public rural extension in China showed in table 1.

Table 1. Mission and goals of public rural extension in China

<table>
<thead>
<tr>
<th>Mission</th>
<th>Goals</th>
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<tbody>
<tr>
<td>Transfer advanced agricultural technology from research stations to users</td>
<td>Increase production, improve quality of the agricultural products, ensure food security for the large population</td>
</tr>
<tr>
<td>Assure the successful implementation of government rural policy by changing farmers' behaviors</td>
<td>Protect the environment and natural resources, reach the goal of sustainable rural development</td>
</tr>
<tr>
<td>Improve farmers' skills and knowledge in decision-making and farm management through training</td>
<td>Increase farmers' economic income, alleviate rural poverty, improve community organization</td>
</tr>
<tr>
<td>Provide an information and marketing service</td>
<td>Help farmers and rural entrepreneurs to make proper decisions on production, marketing and risk reduction</td>
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Structure and administration

The present extension system in China is administered through a hierarchy structure from state, province, prefecture, county and township to village. The National Agro-Technology Extension Center under the Ministry of Agriculture is the highest government agency responsible for planning, policy initiation, macro-management and supervision in agricultural extension. Provincial and prefecture agricultural departments have similar structure and functions for their areas as the national center for the whole country. They are more involved in formulation and implementation of policy, coordination of relevant agencies and training lower level agents. The county agricultural extension center is considered a main force in extension programs implementation and farmer training. The county agricultural extension centers now conduct trials, demonstrations and diffusion of extension programs to area farmers. They usually collaborate with township technicians, village administrators, farmers associations, and other administrative and professional links in planning, implementing and managing extension programs. Unlike, in the past, the new structure in extension ensures a distinct function and task for agricultural extension activities, and to some extent separates extension activities from government administrative intervention.

Extension approaches

Since the 1980s, apart from the conventional top-down approach, many other new approaches to extension have been developed and tested in different areas within country.
The following are some of the most important approaches summarized by Liu (1998) and Yang (1993).

*The conventional extension approach.* The objective of this approach is to implement the government's plan for development. Under this approach, extension programs are implemented by public extension agents and by government administrative interventions at different levels. This approach is the dominant form of extension and is still functioning well for some sectors.

*Technical contracts between extension agents and farmers' households.* Since 1985, government extension funds have been sharply reduced. Under financial pressure, some local extension agents have changed from providing free-of-charge services to entering paid service such as “diagnosis and prescription” (clinical service) and “technical contracts.” This extension model concentrates on the provision of technical advice during the production period to increase the output of products. Once a contract is signed between agencies and farmers (sometimes townships and villages), the extension agent is responsible for technical guidance and improving production levels. The farmers themselves usually organize their marketing plans. Farmers are required to pay the service fee to extension agencies after harvest. Agents are required to pay if a loss is due to a technical failure. In this approach, the extension agent and farmers share benefits and jointly take risks in production. This approach is applied mostly in horticulture, cash crop production and livestock production systems.

*Company-led extension approach ("dragon head" approach).* This approach was initially developed at the end of the 1980s in coastal areas by rural enterprises that use agricultural products and by-products as raw materials. Under this approach, contracting with companies reduces farmers’ marketing risks. Agricultural companies, as the "dragon head" of the whole system, provide relevant technologies, training and information to farmers. By providing services to farmers, companies ensure the supply of raw materials at fixed prices. This approach is implemented through contracts signed between companies and households, linking the two parties by a commercial mechanism.

*Participatory extension approaches.* This approach was developed in 1990s and introduced gradually by the Center for Integrated Agricultural Development (CIAD) from China Agricultural University. Its objective is to develop farmers' abilities and skills in sustainable rural development. In this approach, the community is the basic unit for implementing participatory extension programs. Farmers are the key actors, and they participate in all extension processes such as project appraisal, participatory monitoring and evaluation. Initiatives are started at the grassroots level and are submitted to higher levels (bottom-up approach). In this approach, the role of farmers is increased. The participatory approach requires multidisciplinary teamwork and multi-institutional involvement. There have been a number of successful examples of this approach in recent years, especially in social forestry and land reclamation.

**Educational Importance**

*Extension systems in the world*

According to Von Blanckenberg (1994) and Rivera (1988) (cited in Rivera, 1991), there appear to be at least four major structures of public sector agricultural extension worldwide. They are:

1. Central authority structures (used in most developing countries).
2. Parastatal structures (used in part of Africa and the Caribbean).
3. Cooperative government/farmer association structures (used in Taiwan and Korea), and cooperative government/farmer arrangements into “farmer circles” (used in Norway).
4. Overlapping (federal/state/local) authority structure (used in the United States).

The above classification appears to be shifting as public extension evolves and changes. As Rivera (1991) indicates, these models don’t take into account the trend toward privatization and the structured shifts that have resulted from this move such as British extension system. Obviously the Chinese extension system is adding another dimension to the above classification, as the technology contract is unique to China and popularly applied in today’s extension nationwide. Jones and Garforth (2001) predict, the future is also likely to witness a reversal of recent towards bureaucratization within hierarchical extension services and an overall reduction in their levels of public funding to support a free extension system.

**Trends and suggestions for Chinese extension**

Yang (1993) notices that China’s extension services have gradually shifted from being administrative or instructional-oriented to motivated or service-oriented, and from directing to influencing or advising farmers to adopt technologies to obtain higher production and profit.

In addition, Liu (1998) indicates that the central government has recognized a lack of cooperation between research, education, and extension since 1990s. A policy has been formulated to establish a multi-sectoral participatory social service system for rural development to address this problem. The system includes the policy of “combining extension, research and education together” to serve farmers and promote rural development. Cooperation between these three sectors has been improved. According to Ministry of Agriculture statistics, all 59 agricultural universities, 260 agricultural schools and 50 agricultural research institutions of Chinese Agricultural Academy have established research and extension bases in all of the provinces in the country.

In the past, the central and provincial government allocated funds for agricultural extension. Now, local governments are mainly responsible for funding the system. According to a report of a survey of 100 county extension centers in October 1993, funds were reduced by 33%, compared to the year before (Wang and Van Den Ban, 1995). Due to funding shortages, extension agencies, especially at the county level face great challenges to sustain their work. Their role has changed and their salary is no longer guaranteed. Now they have to find a way to “self-finance” or “self-develop” by running enterprises themselves and they must improve the effectiveness of their services (Yang, 1993). This change suggests that the extension staff should renew their attitudes and update their skills to meet the new needs of farmers and rural development since most were trained under the former planned economic system, their approaches and expertise are no longer effective under the current system.

The current extension system in China reflects a community-based cooperative extension approach linked with commercialization. This means that the central government no longer monopolizes the extension system. Government-financed extension agencies are still the mainstay of the system while extension programs collectively financed by the extension staff and through local organizations such as townships and villages are innovative ways to spread risk.

Both the British and American extension systems possess unique features, from which the Chinese extension could learn. However Falvey and Forno (1997) caution that it is
not appropriate to attempt to replicate the US extension model to other countries. At the same time, it is appropriate to elicit just the critical elements that can be successfully adapted to the needs in other countries.

The idea of extending the university to the people through an extension network is an appropriate model for Chinese extension to follow. This suggests that Chinese agricultural universities need to increase their roles in extension education and expand their access to include local farmers and rural residents to obtain practical information and knowledge to improve their lives. Integrating extension into agricultural universities is an important step to strengthen the linkages between research, extension, and education as teaching and research are more emphasized in the current system. University participation needs to be legislatively recognized to reinforce research, teaching, and extension as an organizational and interdependent continuum in order to ensure service quality and commitment. The experience from China Agriculture University in the past 10 years can be a useful case study for policy initiating in this regard (Li; Li; Liu; Wang and Jian, 1997).

The British are looking at educational needs in different ways. Harter and Hass (1992) argue that if clients of ADAS in Britain will pay for assistance they formerly received free charge, and then the fee system also could work for extension agencies in other countries. The British experience is an important consideration for financing agricultural advisory services everywhere.

Rivera (1992) notes that the British system promotes direct payment by users with privatization of extension services. The public agency responsible for research and extension, ADAS is responsible for such tasks and relies on government employees to carry out the work. Farmers now in China are beginning to be required to pay for some extension services. This is an emerging trend towards the commercialization of the extension organizations in China.

Fee-based extension is also being heavily considered in the US as a means to finance the system. Penn State, Iowa State and North Carolina are states that are moving toward fee-based extension (Hebel, 2002). Current practices show that in China, free extension services are not only too expensive to be founded by the government and they create more bureaucracy in the system. Extension services also cannot guarantee a success under current agricultural and economic situation (Yang, 1993). Company-led extension and technology contracts approaches in China reflect a commercial perspective and fee-based extension, and continue to play a role in extension, but they differ in their features from the British system. Over time, China is changing the extension system to move effectively, meet the needs of society and local farmers.

References
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