



# Agricultural Extension System in China

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Note, December 2009

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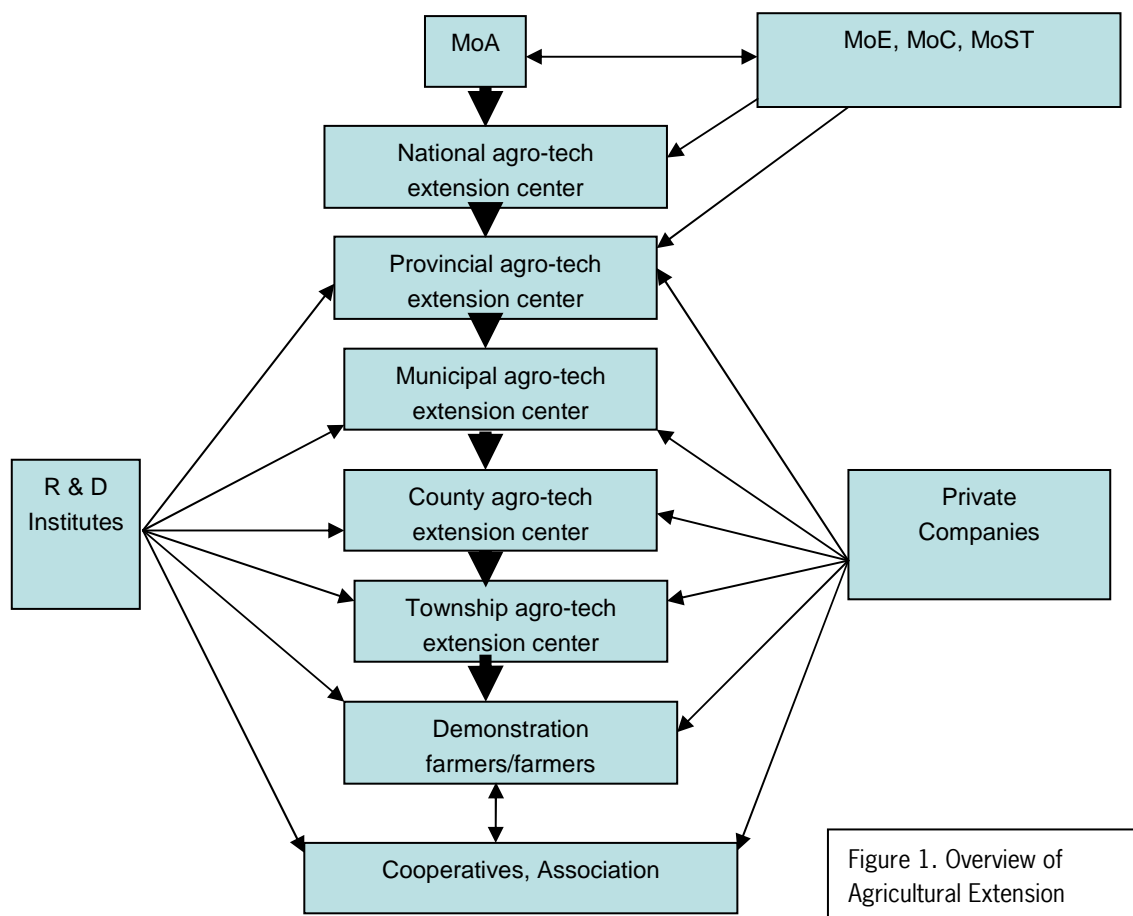
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# 1. General Introduction

When China started its rural economic reform in 1978, namely 'Household Responsibility System'(HRS), the old extension system which served to collective communes was no longer suitable for the individual household production unit anymore. The Chinese government started to establish its new agricultural extension system at the end of the 1970s. By the mid of 1980s, China had established a comprehensive extension network which covered all rural counties and townships national wide. Along the vertical line, under the Ministry of Agriculture (MoA), extension system has been set up at all administrative levels from national, provincial, city, county to township. The National Agro-Technical Extension and Service Center is responsible for formulating long-term development planning in the national extension work while other agents below are implementing such planning. The total employee at all levels has reached one million by the mid of 1990s. The domains of the new extension system are set fivefold: technology experimentation, demonstration, extension, training and input supply to farmers.

Although the government financed extension agencies are still the mainstay of the system, other modes of agricultural extension are emerging and co-existing as well. The other prominent players are mainly from three dimensions: R & D institutes, private companies, and producers' organizations. Figure 1 below presents an overview of the agricultural extension system in current China. The solid lines along the vertical administrations indicate the dominant role the public extension system plays under the MoA. Occasionally, some other ministries, such as Ministry of Education (MoE), Ministry of Commerce (MoC), Ministry of Sciences and Technology (MoST), will also participate in disseminating knowledge to farmers independently or joining forces with MoA. Comparing with the public sectors, three other forces (private companies, R & D institutes and producers' organizations) play minor but vigorous roles in disseminating information/knowledge to Chinese farmers. In the following sections, we will discuss each of them in detail.



## 2. Public Extension System

The public agricultural extension system (PAES) in China is organized according to its agricultural sub-sectors. Most counties have set up extension stations for crop protection, livestock, agricultural machinery, aquaculture, soil & fertilizer, and economic management. According to local conditions, more specific crop stations such as cotton may be established as well. Table 1 presents detailed staff distribution by administrative level as well as by their specialization from 1996 to 2006. It is logical to see that a large proportion of staff is at the township level, which is the lowest public administration in China. Each staff at the township extension centers is designated to be responsible for one or two villages. In some villages, model farmers are selected as demonstration farmers to others.

As we can see that the crop protection stations have the over 300,000 extension staff in China, well above all other sub-sectors. Besides the standard vertical system, there are around 600 regional pest monitoring stations under the crop protection stations of each province, which are monitoring and forecasting of major pests and diseases at regional level.

Table 1 Distribution of Governmental Extension Agents in China, 1996-2006 (1000 persons)

Year	Total	By Administrative Level			By Specialization				
		Above country <sup>a</sup>	County level	Township level	Crops	livestock	Agricultural machinery	Aquatic products	Agri. economics
1996	1025	69	375	581	421	332	139	24	109
1997	1013	66	378	570	417	312	161	30	94
1998	1058	60	358	640	407	338	183	34	95
1999	1035	65	356	614	411	329	168	33	94
2000	1013	71	353	589	415	320	153	32	92
2001	981	72	350	560	412	316	134	32	88
2002	934	68	343	523	401	299	119	30	84
2003	881	68	330	482	362	301	111	29	78
2004	832	66	320	446	345	292	95	29	72
2005	843	74	332	437	333	294	106	32	78
2006	788	73	318	397	326	266	97	28	70

Source: Chinese Ministry of Agriculture. Cited from Hu et al. (2009).

<sup>a</sup> Above county level refers to city, provincial, or national level agricultural extension units and agents.

Due to its rapid expansion of specialized stations (such as tea station, mulberry stations, etc), the whole system was soon becoming overstaffed and inefficient. The Chinese government has implemented a series of reforms for its public extension system since the late 1980s. After several years of experiments, the Chinese government announced its reform guidelines in the early 1990s by classifying extension work into three categories: fully funded agents, partially funded agents and self-funded agents. Tasks which have strategic importance and strong public good character will be fully funded by the government, while tasks that perform commercial activities will be stimulated to commercialize. Partially funded agents are somewhere between. The national government does not define which sub-sector to which categories. The final decision is up to the local governments. Thus each county has its own freedom to implement this policy. In most cases, crop protection stations are categorized as fully funded agents while input supply stations such as seeds and pesticides are classified as self-funded agents. Sub-sectors, such as livestock and aquaculture, are often classified as partially funded agents.

In order to improve co-ordination and efficiency among all extension stations, another reform is to merge various specialized extension stations into one-stop extension center. The merging is relatively easy for crop related stations since these are directly under the administration of agricultural bureau. This step has been carried out in most counties. But the next step where merges are involved across different bureau approves difficult. For example, livestock stations are normally under the Livestock Bureau and aquatic stations are under Aqua-cultural Bureau. Due to the administrative barriers, the process for a completed merging is still on-going.

### 3. Research results oriented extension

Parallel to its agricultural extension system reform, Chinese government also implemented similar program for its research institutes, which categorize research institutes as fully funded, partially funded and market oriented. Fundamental research and strategically important research are under the fully funded scheme. Practical research institutes from the second and third categories are encouraged to commercialize their research results directly in the market places. In these cases, scientists-turned extensionists are disseminating their knowledge, new varieties, new seeds, new machinery, etc to farmers. They may sign contracts with villages and farmers by providing services at annual or continual bases. Depending on their target scopes and objectives, these institutes may team up with extension centers at various levels. By directly contacting farmers, scientists get first hand information on their technical problems where farmers confront and subsequently search for solutions.

### 4. Agribusiness Funded Extension

Agribusiness enterprises in China, such as seed companies, pesticide and plastic film manufacturers, also participate in agricultural extension. Multinationals, such as Monsanto and Syngenta, all have their R & D departments and extension departments in China. Their extension workers pay visits to farmers in the fields and guide them how to apply their products. Small private businesses, who do not have enough resource to work independently, are collaborating with existing extension networks in order to reach farmers.

### 5. Producers' Organization Extensions

There are mainly two types of producers' organizations in China: associations and cooperatives (coops). The new Cooperative Laws was adopted few years ago which officially allows farmers to organize themselves or to link up with agribusiness. There are various types of coops, such as vegetable marketing coops, fish producer coops, etc. Most of these coops have mixed activities, like marketing products, providing training to farmers, etc. Because of being producers' organizations, coops understand better what is the real needs of their members and how to reach them. Coops may also invite technicians from extension stations or research institutes to provide technical and managerial trainings for their members. Coops may be approached by other extension agencies and be used as a platform to reaching farmers.

## 6. Methods to communicate with farmers

There are many ways to disseminate information to farmers in China, namely TV, Radio, internet, newspapers, bulletins, lectures, etc. Each will be discussed in details as follows:

**TV:** Chinese national TV network is called CCTV. Among the total 20 plus channels, CCTV-7 is specialized for agricultural and rural areas. Besides all other entertainments, there are substantial time located in providing information to farmers. Given the wide adoption of TVs at the household level, CCTV-7 is one of the most powerful means to reach millions of rural households in China. Furthermore, CCTV can also be watched via internet. In addition to the national CCTV, each province has their own TV stations and satellite TVs, where part of their programs is contributed to agriculture and rural areas.

**Internet:** Internet is widely accessible in the urban China and becoming more and more so in the rural areas as well. There is a National agricultural extension website in China [www.farmers.org.cn](http://www.farmers.org.cn). This website provides information on new varieties, new technology, essay from demo farmers, etc. There is also a Q & A program where farmers can submit their questions and experts will give their answers. Other important websites include the S & T website: [www.cast.net.cn](http://www.cast.net.cn), managed by Chinese Academy of Agricultural Sciences, the agricultural information web [www.agri.gov.cn](http://www.agri.gov.cn) managed by MoA, and agricultural product standards web [www.chinanyrule.com](http://www.chinanyrule.com)

**Newspaper:** There is a national newspaper called Farmer Daily, which provide news and information. There are also specific pages for each agricultural sub-sector. However, this newspaper is really targeting applied topics and questions of farmers. The content is more focused on government officials and agricultural bureau. Farmer Daily can also be read from its website [www.farmer.com.cn](http://www.farmer.com.cn). Beside the newspaper, there are numerous magazines focusing on agricultural, livestock, etc.

**Radio:** Radio broadcasting is still popular in the rural countryside. Traditionally there are Radio Broadcasting schools in China. These types of schools are now turning themselves into sort of distance learning professional schools, which provide trainings to farmers as well. The website is [www.ngx.net.cn](http://www.ngx.net.cn)

**Telephone:** There is a special telephone number in each province of China where farmers can call up when they have questions. The operators will direct your questions to relevant experts and farmers will hear the comments or answers from the experts directly on the phone.

**Bulletins:** Bulletin is the most traditional way in disseminating information to farmers. In specialized occasions, such as science days or marketing days, local extension agencies will hand out bulletins to farmers and explain to them about the new development and innovations in the agricultural sectors.

**Lectures:** Extension staff, scientist and other experts may go to the villages and give lectures directly to the farmers in the classrooms or in the fields. This is the most effective way but also most expensive one.

**Farmer Field Schools:** The approach of Farmer Field Schools (FFSs) has been expanded in China during the last decade as a new approach in getting relevant results from applied agricultural science to and with farmers. For example, in a program entitled 'Environmental Strategies of Intensive Agriculture in the North of China' supported by German GTZ, farmer field schools is being applied for several vegetables, including asparagus, tomatoes and eggplants.

**Decision support systems (DSS):** Regarding the complex decision support system, such as using infection prediction model on a PC, this is not happening at farmer level yet in China. DSS may be used at research level, such as at regional crop protection stations. However, this needs to be checked with researchers in China.



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