

# **The Comparison of Implementation of Rural Development by Agricultural Extension System at Grassroots Level between Thailand and China**

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## **ABSTRACT**

This study focused on the comparison of implementation of agricultural extension to rural development between Thailand and China. Thailand is distinguished from China in terms of approaches to implementation of agricultural extension. The noticeable distinction lies in that alternatives chosen by Thailand are public, participatory approach and need oriented way, while those chosen by China are mixed public and private, top-down, technology driven way. However, the conventional extension methods such as demonstration, mass media are still the major choice both in Thailand and China. Agricultural Technology Transfer and Service Center (ATTC), as the fundamental operational extension institution at grassroots level in Thailand, firstly makes developing plans, and then conducts the extension activities by steering committee under the help of facilitators in participatory way. ATTC conducts various well-planned training activities through learning by systematic observations, training by successful farmer and specialists by demonstration, mass media, and live project, but most important learning process is highly emphasized to build up the farmer's capacity of self-reliance. Meanwhile Township Agricultural Techniques Extension Station (TATES) is the fundamental, operational extension agency at grassroots level in China, which implements extension programmes under the top-down direction. It is noticeable that it is flexible, diversified extension approaches co-exist in China, such as "Technical contracts between extension agents and farmer households", "Technique and agricultural input combination approach", "Extension by Technical Association in the village", "the company-led extension", other than the conventional approach. Those approaches are really practical to accommodate the

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situation in China. The learning process is however, not so highlighted as in Thailand. Nevertheless, both Thailand and China can learn the successful experiences from each other.

**Key words:** rural development, agricultural extension, Agricultural Technology Transfer and Service Center, Township Agricultural Techniques Extension Station

## INTRODUCTION

Although extension organizations everywhere pursue the overall goals of technology transfer and human resource development, implementation of agricultural extension differs from each other including organizing approaches, plans making, operation at field level and evaluation. Undoubtedly implementation is the key part of agricultural extension that determines the efficiency of information delivery to the target clients.

The efficiency of agriculture extension derives from either institutional reform or extension approach reform. As discussed by Patana Sukprasert (2002), ATTC at sub-district level is the result of institutional reform in Thailand as the extension institution at the grassroots level, which was established in 1999 to fulfill the policies of decentralization, participation, bottom-up to top-down direction, and provide the integrated service to farmers through the form of “One-stop service”. The core structure of ATTC is the steering committee, who is elected from local farmers and other sectors that represent the community to make developing plans in a participatory way under the help of facilitators from governmental institutions and volunteer groups (The Operating Center for Agricultural Technology Transfer Promotion, 2002). ATTC is the center not only for technology transfer, but also for integrated service,

coordination and information. To the large extent, ATTC represents the broader socio-economic, people-centered agricultural extension. Meanwhile China has Township Agricultural Techniques Extension Station (TATES) at the grassroots level of extension institution in the context of multi-faced extension. Organizational structure of TATES was set up by the classification of differently agricultural sectors, like field crop, fishery, animal husbandry, agricultural machinery and agricultural economy, which are called “five stations” (National Agricultural Techniques Extension Center of China, 1995). In addition most of the TATES have the input sales branches. The extensionists in TATES are mainly the same responsible for transfer technology through direction to and cooperation with the demonstration farmer households as in ATTC. With the different organization of extension institution, Thailand and China have different choices to implementation of agricultural extension. So this paper aimed to compare the implementation of agricultural extension between Thailand and China in order to share the experiences with each other.

### Objectives of the study

Compare the agricultural extension implementation approach at grassroots level in Thailand and China in order to share the experiences from both countries.

## Methodology

This report was finished by adopting the following methods within the scheduled by eight-month study period during Nov, 2002 to Aug, 2003:

- \* Documentation by extensive literature review of relevant concepts, facts. Literature includes books, official reports, documents, journal articles, research reports, and conference and seminar papers.

- \* In-depth interview with officials, professionals in governmental agencies (Department of Agricultural Extension, Agricultural Extension Officers in Ayuttaya, Nonthaburi Provinces and ATTC at sub-district level), Subject Matter Specialists at Kasetsart University.

- \* Systematic observation to the work of ATTC and its training course

## RESULTS AND DISCUSSION

### 1. Implementation of agricultural extension at grassroots level in Thailand

Agricultural Technology Transfer and Service Center (ATTC): How does it work? (Figure1)

#### 1.1 Preparation for establishment of ATTC:

ATTC is quite a new concept of agricultural extension work in Thailand, though its philosophy and some working methodology system from extension practice in the past decades. The first principal task is to make agricultural officials, extension workers and farmers to understand well the reform of extension organization and working methodology. Patana Sukprasert (2002:8) revealed that the farmers

around ATTC would like ATTC to 1) be the center of knowledge and technology transfer; 2) develop the occupation and living standard of farmer and family; 3) assist the farmer and community to manage the natural resources and 4) solve the problem in the community. This is critical point to determine the success of ATTC, but it has taken time and will be to accomplish this task by offering training, meeting or dialoguing with the participants. Some successful examples of ATTC show that the participants' attitudes and ideas can be changed, and once they change, they will carry ATTC through to the aim.

Set up of steering committee: Under the guidelines of government, the procedure of steering committee set up varies slightly in different province. For example in one Tambon of Pattalung province, firstly 5-10 representatives were selected from every village by farmers, then among those representatives picked up one to be the member of the steering committee, plus other 7 representatives from different branches of government offices, 13-member steering committee were set up. The government officials organized and supervised the procedure of electing. The representatives who were selected must accord with the requirements, and from different sectors of agriculture such as upland crops, rice, fishery, livestock production, etc.

Facilities preparation: Office attached with a suitable meeting room of ATTC should be chosen and built in a convenient place where farmers can access conveniently. Then equip ATTC with requisite facilities like reading materials, instruments for some agriculture test.



**Figure 1** The flow chart of ATTC's work.

Source: adapted from Patana Sukprasert (2002: 98)

### **1.2 Construct database of the community such as resource, environment, economic and social:**

With the help of volunteers from NGOs, GOs and farmers, steering committee collect, clear up and construct the database system of resource, environment, economy and society in the community to set the database. Some ATTC had already connected to the information network all over the country; some keep the data in the office in form of paper table or map. The information is important preliminary materials for community planning, government policy-making and communication with other areas.

### **1.3 Make community development plans.**

Making community plans is the principal duty of the steering committee who adopts the participatory way. Usually the steering committee holds at least meeting according to the situation to make plans, solve problems and routine affairs. For instance, the steering committee of Bangnakhong Tambon in Nonthaburi province has eight time meetings all the whole year. In the meeting the members of steering committee discuss, analysis the situation of their own community together, access the needs of different target farmer groups, and vision the community plan. Then every member of the committee goes back to his own organization or village to discuss, communicate and make agreement of their ideas and vision of the community development plan. Then the committee hold meeting again to revise the vision of the plan, and document the plan by the secretary. The community plans include the long-term, medium and short-term plans which also

are classified into technology transfer and training plan, investment plan and resource exploitation and management plan. Some plans are supported by the community itself. Some plans are proposed to the government as the special projects. Once the plan is set down, the committee is going to hold meeting to make the action plan in terms of activity schedule, budget distribution and other affairs.

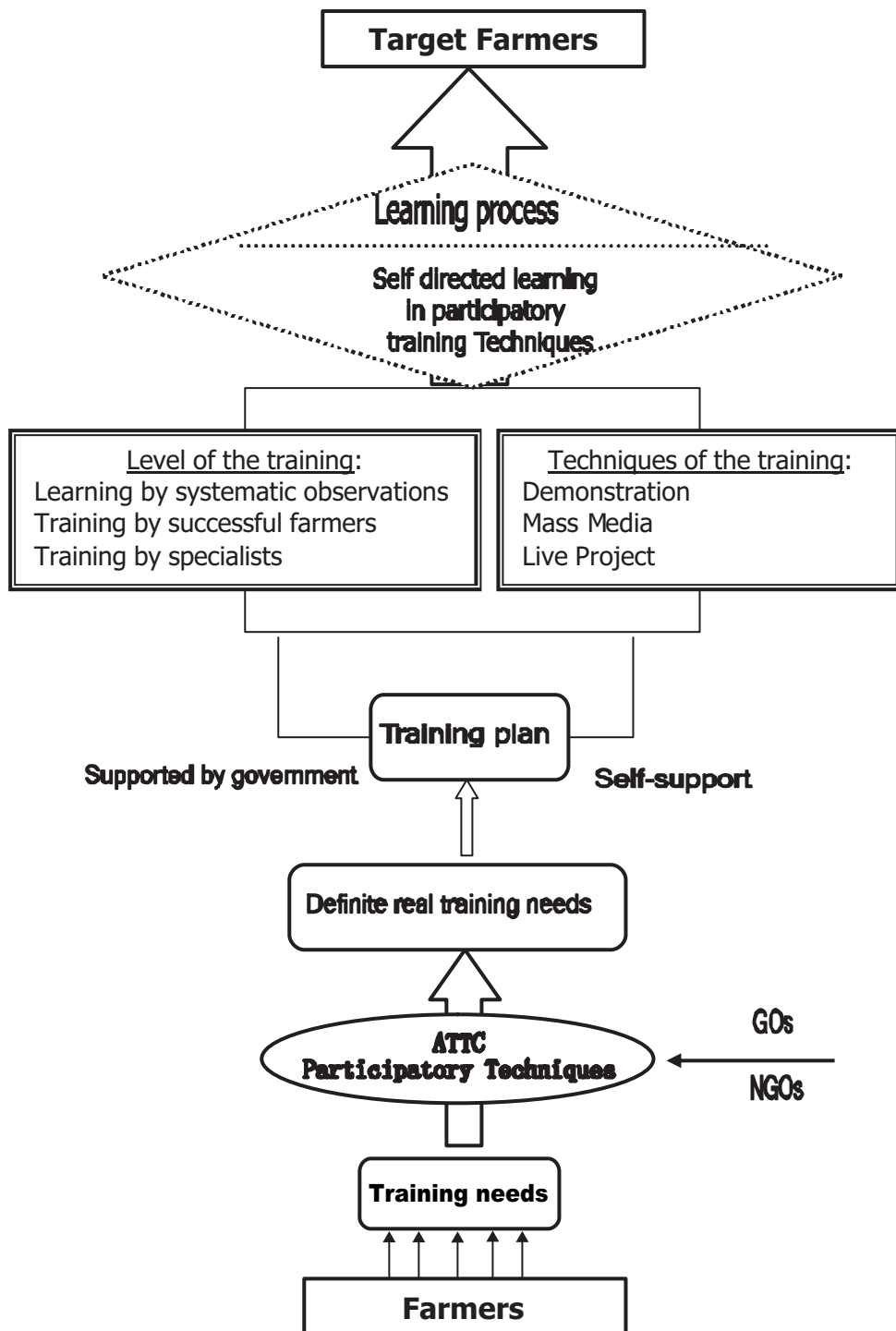
### **1.4 Offer one-stop service**

One-stop service means all-around service for farmers. Whenever the farmer falls across agricultural techniques and other problems, he/she can go to ATTC for help by discussing with other farmers or asking for the extension officer. If they can not solve by themselves, the extension officer or steering committee of ATTC collect the problems to consult the senior agricultural officers, research institutes or professional persons. After they get the answer, they will feedback to the farmer, or they make contact for farmer himself to consult directly.

Besides above-mentioned service, ATTC provides market information for farmers such as agricultural input purchase, agricultural products sale, etc.

### **1.5 Implement training plans (Figure2)**

During development of agricultural extension in Thailand, Thai government has never hesitate to renovate her philosophy and methodology for agricultural and rural development, from initial emphasis on the knowledge-base development (merely transfer of technology), to resource-base development, and now to highlighting on rural human resource-



**Figure 2** Training model of ATTC.

base development. It is gradually realized that capability of farmers in the final and pivotal factor to determine the proceeding and directions of rural development. So providing relevant training for farmers is a key role of the ATTC. Under the direction of bottom-up and learning from farmers' innovation, training is organized and implemented through a participatory approach involving assessment and planning by the steering committee. Firstly the steering committee investigate and discuss with farmers to access their training needs; then they hold meetings to make the training plan, including the topic, schedule, training manner and training site. Some training can be organized and conducted by ATTC itself. Some training plans are proposed to and supported by provincial agricultural extension office or Department of Agricultural Extension. Whatever the training is, learning process is highly emphasized and tailored in favor of increasing capability of farmer self-reliance. Nowadays in Thailand, the outstanding feature of learning process is incarnated by the style of "learning by doing" or "self directed learning". Learning is tried out from the practice and systematic thinking, not merely from the theory courses. By the following are training types discussed in terms of topic, target group and approaches.

According to the topics or techniques, currently training is carried out in the following areas:

- \* Agricultural production techniques: including crops cultivation, organic farming, animal breeding, fish farming, etc.

- \* Post-harvest techniques

- \* Agricultural value-added products processing

- \* Farm management and accounting

According to the target groups, training is classified into:

- \* Training for the trainer: ATTC officers and farmer trainers must have adequate knowledge, capability and correct concepts then they can train or transfer the suggestion to other farmers. For this reason the government holds training regularly to build their capability and renew their thoughts by workshop, lecture, visiting the successful place, etc.

- \* Training the target farmers: Farmers who are the target group, their capabilities especially for sustaining the life are expected to build up through training.

According to the level of concentration the training at ATTC is classified into:

Learning by systematic observation: Taking an example, study tour that target farmer group are organized to visit the demonstration sites or successful farms in their own district or other provinces to motivate for professional concepts in occupation.

Training by successful farmers: some skillful farmers or the owners of successful farms are often invited to teach by sharing the experience to other farmers in their skills, techniques, experiences or even the beliefs to confirm that module is a good way and is practical.

Training by specialists: ATTC submits the training needs of farmers to the relevant superior agricultural officers. These officers select, approve and coordinate the specialists to arrange the training course. Besides the lecture, the trained farmers practice in the field under the instruction of

specialists.

At the same time the training techniques that always used in training by ATTC is:

**Demonstration:** This is the conventional extension and training approach, but is still the important and effective one, because it makes farmers self directed learning.

**Mass media:** Thailand has seen quite long time to use mass media to diffuse agricultural technology and knowledge, such as radio, video, TV and published manuals, brochures, books. Mass media nowadays is the ultimately profit for farmers. It is can be used in any time and any place that meet the purpose of farmers.

**Live Project:** ATTC tries the best techniques to set up and support the environment for individual self directed learning atmosphere by Live Project such as Farmer Field Schools. Farmer Field Schools that grew out of projects supported by FAO in Southeast Asia, have been used mainly in integrated pest management programmes (Vanessa Scarborough, 1997). In some ATTC, this training method had been introduced as one of the modules of “learning by doing”.

## **2. Implementation of Agricultural Extension at grassroots level in China**

After entering 1990s, except the leading extension channel by Township Agricultural Techniques Extension Station (TATES), other new forms of agricultural extension had emerged promisingly, for which the extensionists in TATES have acted as the facilitators or middlemen roles. The following are some of the most important approaches

for agricultural technology diffusion.

### **2.1 The conventional extension approach Programme/project extension**

This approach is the most important one adopted by TATES. The objective of this approach is to implement the government plan for development under top-down direction. Through this approach, extension programmes are organized, implemented by the public extension agents and by government administrative interventions at different levels. Now, there are several momentous extension programmes at national level which are operated by this approach, like ‘Harvest Project’, ‘Seed Project’, ‘Vegetable Basket Project’, ‘Soil Fertilization Project’, ‘Project of Agricultural High-tech Garden Construction’, ‘Poverty Alleviation by Technology Programme’. This approach is the dominant form of extension and is still functioning well for some sectors. The steps of this approach are as follows:

- \* Informed and take up the allocated task of extension projects or programmes from the senior institutions that according to the policy of the government

- \* Develop especific project or operational plan under the huge programme that is suitable to the area context

- \* Conduct research and demonstrations

- \* Select innovators or skillful farmers at the target area as the diffusion center to target group.

- \* The technology is diffused and accepted by more farmers through demonstration and successful farmers.

- \* Offer specific guidance to farmers who are



waiting for the techniques.

- \* Supervise the feedback from farmers and report to the senior office.

## **2.2 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 practicing paid technical contacts, resorting to their advantage of professional technique. This extension model concentrates on the provision of technical advice during the production course to increase the output of the products. The extension agents offer specific technical directions to target farmer households, and the benefited farmers have to pay the service according to the technical contracts. Presently the prevailing technical contract forms are accepted as 'Payment by Fixed Production', 'Deduct a percentage money from the total production', 'Group Contract', etc. By the contract, the extension agent is only responsible for improving production levels because marketing is organized by the farmers themselves. The steps of this approach are as follows:

- \* Extension agent establishes contact with target villages or farmer households

- \* The contract is signed after negotiation between the extension agent and target villages or farmer households

- \* Relevant technical training, on-site supervision and instruction is provided by the extension agent during the production process.

- \* The outcome is evaluated; if it deals with

the contract, the payment will be cleared to the extension agent. And the technical contract may be extended.

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.

By this approach, some specialists in agricultural research institutes and universities can extend their skills and techniques too.

## **2.3 The approach of technique and agricultural input combination**

Under the situation of financial pressure, some extension agencies adopt this approach to carry out their extension work. When they introduce their preponderant techniques to farmers, they also provide the service of relevant agricultural inputs. This approach is popularly applied in the aspects of Crop Clinics, Directions for Fertilizer Application, the Use of new Agricultural Production Materials, etc. The typical method of this approach is through technical diagnosis for farmer's problem to provide the inputs service and relevant use directions, such as good crop varieties, fertilizers, pesticides, agricultural machines, plastic films.

This approach could profit the extension agencies from the input sales, meanwhile, benefit the farmers by convenient purchase and correct use of the good quality production inputs. Of course, sometimes this approach could produce some corruption behaviors in current reality.

#### **2.4 Extension by the Technical Association in the Village**

At the era of the Planned Economy, extension agents are only responsible for technology transfer, despite of the actual interest and needs of the farmers. But after reform of rural region and the market-oriented economy establishment, the farmers have to change their roles from the mere producer but also the producer and manager. They have been endowed the chance to make decisions for best profit from their production, but because of lacking knowledge and skill that confronted the extension agents to the challenges. At the same time the farmer's instincts of self-development have become stronger and stronger. This situation made the Technical Associations of Village established in the late of 1980s, and they were strongly developed in the 1990s and now it has got the approval and support from the government (Li Qian, 1996).

The formation of the Technical Association in China could be classified into two types, namely organized spontaneously 1) by farmers themselves and 2) by the government. The first ones emerged early and are principal. The voluntary initiators of the Technical Association were the skillful, innovative farmers who had grasped special techniques. Their techniques attracted athirst farmers to learn, and on this basis the beneficiaries were organized gradually to establish the association for the purpose of better communicating techniques, information with each other to improve their production. Some associations developed into economic entities as corporation or company; some drove the production specialization on a large scale, which has advantages to occupy the

market.

This approach is a promising one which extends so appropriate, profitable technologies proved by the initiators that they can be interested and accepted by farmers. It also has other important functions in the aspect of broadening extension service as marketing, and building the farmer's capacity. But up to now, such Technical Associations are not far enough. It is believed that they will be developed vigorously in the future.

#### **2.5 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. Currently it has spread throughout the country.

This approach is implemented through contracts signed between companies and households, linking the two parties by the commercial mechanism. The company is called "dragon head" of the whole system since it is important in this approach. In order to ensure the supply of raw materials at fixed price by the contract, the company usually provides relevant technologies, training and information to farmers. The contracted farmers must produce according to the technical requirements by the company. Otherwise they will be refused to sell the products to the company. In the immature market-oriented economy of China, the interests of farmers easily damaged. So sometimes the government, as the middle man, would like to help farmers to make contracts with the company to protect their interests.

Due to the rapid development of agriculture and the pressure from internal and external market, in recent years farmers confront the plight of selling their products. By contract guarantee, this approach not only solves the sales problem of farmer but also provides the enterprise fixed and cheaper raw materials for further processing. Under this approach, farmer's marketing risks are also reduced. So this approach is popularly welcomed by both farmers and companies. It is one of the promising extension approach, even not completely perfected

Nowadays the extensionists in TATES play the role in helping develop the farmer's technical association and helping farmers make contracts with the company, though there is no definite mandate from the government.

### 3. Comparison of alternatives to organizing extension between Thailand and China

In conclusion, Thailand and China choose quite different ways of organizing extension (Table1). Adopting public, non-profit extension service system, Thailand uses ATTC as the fundamental, efficient tool at the grassroots level to organize the farmers and resources persons from other sectors to participate in every extension activities. Extension activities in

ATTC usually are well planed by steering committee on the basis of needs of farmers. Comparatively, although agricultural extension in China is mandated the public and non-profit services, TATES at grassroots level provide some extension service through contracts with farmers. Meanwhile private sectors in China are legalized to conduct extension services. Those two approaches to organizing extension in China have really benefited stabilizing the extension troop at grassroots level and solving the market issue for farmers. Nowadays technology-driven extension programmes have still been the mainstream of agricultural extension approaches in China under the top-down direction.

## CONCLUSION AND RECOMMENDATION

Conclusions can be drawn from the discussion above that Thailand is distinguished from China in terms of approaches to implementation of agricultural extension. The noticeable distinction lies in that alternatives chosen by Thailand are of public, participatory and need oriented way, while those chosen by China of mixed public and private, top-down, technology driven way. However, the

**Table 1** The overall comparison of alternatives to organizing extension between Thailand and China.

Thailand	China
Public	Mix of public and private
Bottom-up to top-down (participatory)	Top-down
Non-profit	Mix of profit and non-profit
Need oriented multipurpose	Technology driven multipurpose

conventional extension methods such as demonstration, mass media are still the major choice both in Thailand and China.

The agricultural extension activities in ATTC are well planned by the steering committee and carried out by series of participatory training activities such as learning by systematic observation, training by successful farmers, training by specialists in the corporate techniques of demonstration and utilizing mass media or live's project, that all the learning process is emphasized on build up farmer's capacity of self-reliance. Various training subjects are given of such as pre-harvest and post-harvest production techniques, food processing, home economics, handicrafts, sustainable agricultural technology, etc. Whereas, technology transfer by TATES is carried out mainly through demonstration sites, demonstration households, agricultural techniques handout and mass media. The training tailored for farmers is quite not so many and the approaches usually pay more attention on the results other than the process. The farmers are not so well clear about why they were told to do. It is deserved to mention that China has diversified extension approaches, like company-led approach, technical contracts approach, except the conventional approach. Those approaches are the products of new situation, which can adapt and make better contribution to agricultural and rural development.

Based on the above analysis, some suggestions are tried to present for the policy makers, coterie who also work in the field of agricultural extension and rural development.

1) Thai government pays more attention and

makes great efforts on the farmer's learning atmosphere context and capacity-building through reforming the construct of its institutional organization of extension office and farmer's organization, extension approaches and training process. This also is the new and overwhelming trend in the agriculture based countries. This point is most useful one to be deserved learning by China and other countries. China is now realizing and beginning to make efforts to develop farmer's capacities. But until now there are no strong concrete sign to show the actions for this aspect.

2) ATTC is new but very important extension agent in Thailand at the grassroots level. It is used to integrate all the extension services, foremost motivate and offer facilities for farmer's participation in the community development planning. Now ATTC really gained positive effects in terms of technology transfer and capacity-building, especially in developed communities. But in some backward areas, it has not worked well. This reveals that this high level extension approach needs backup of high-quality farmers. Now in China, the farmers still lack enough knowledge in terms of decision-making and self-management. The model of ATTC can not be simply copied to China, but it is symbol of the major trend of agricultural extension. China government could try it in some developed regions, such as south-eastern China to do such a pilot project, but should make efforts directly to farmers going on this way.

3) The multi-faced of agricultural extension in China could offer useful reference to Thailand. Furthermore, the company-led extension has been proven in practice the useful, promising way in



**Figure 1** The Poster of ATTC's work.



**Figure 2** The supervision by officials in Department of Agricultural Extension at ATTC in Ayutthaya Province.



**Figure 3** The training for herb farmers organized by Monyong ATTC in Nonthaburi province.



**Figure 4** ATTC of Banheep District in Ayutthaya Province: Taking the photo with farmers and extension agents.

China to address the technology and market issues to farmers. Especially since economic crisis in 1997, agriculture extension in Thailand has confronted financial pressure. To some extent, it will ease the situation up to explore other agricultural extension approaches in Thailand.

## ACKNOWLEDGEMENTS

The writers would like to express their appreciation to Assistant Professor Dr. Thanwa Jitsanguan in Faculty of Economics, Kasetsart University for his valuable information and guidance.

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