The Lessons Learned and The Present Prospects: A Critical Review of Agricultural Education in Thailand

Pongpan Traimongkolkul
Associate Professor
Agricultural and Environmental Education Program
Kasetsart University, Kampaengsaen Campus,
Nakhon Pathom 73140, THAILAND
Tel & Fax: 66-034-281-081
E-mail: feduppt@ku.ac.th

Prasong Tanpichai
Assistant Professor
Agricultural and Environmental Education Program
Kasetsart University, THAILAND

Abstract

Thailand is one of the Asian leading food exporters. Evolved over a century, agricultural education has been instrumental to agricultural development of the country. With the on-going movements in educational reform and renewed direction of agricultural development, there is a need to holistically examine the system of agricultural education in Thailand.

This nationwide study reviewed the past and examined the present prospects of agricultural education at three levels: basic education, vocational education, and higher education. The research methods include an extensive documentary analysis, an empirical analysis with surveys and case studies, and reflections from opinion leaders.

Contemporary era of agricultural education in Thailand began in 1943 with an establishment of the first university specialized in agriculture, inspired by the US land-grant model. Stimulated by the green revolution of the 1960s-1970s, agricultural education during that period expanded rapidly to meet the nation’s demand for manpower and technology. Aside from the success on this primary role, critics have pinpointed the side effects of agricultural education on small-scale farmers.

The strength of Thai system of agricultural education lies in its comprehensive and diversified structure, a result of resource accumulation over the booming period. At present, the existing system is being questioned on its relevance. Higher agricultural education, being the spearhead of the system, has been a subject of criticism on “functional imbalance”.

To be relevant, agricultural education in Thailand must be more responsive to the changing contexts of national development, keeping equilibrium of competitiveness and sustainability of Thai agriculture. It is imperative that a national forum on agricultural education must be formed, serving as a task force to revitalize the total system of agricultural education. Recommendations are given for strengthening of agricultural education at all levels. Enhancing linkage between formal and non-formal education is also recommended.
Introduction

Over the past four decades, agricultural growth in Asia has been dramatic as a result of the Green Revolution of the 1960s-1970s. The Asian developing countries in particular have experienced a rapid expansion in agricultural exports since the mid-1970s (Itagaki, 1999). However, in this period of post-green revolution, progress on biological technology, increasing pressure on environmental problems, and high competition in international trade, altogether have a major impact on agricultural system of Asian developing countries.

Given the challenging milieu of tomorrow agriculture, agricultural education in Asia needs to be redefined and revolutionized. In regional forums, re-engineering of the agricultural education system has been echoed, and new models of agricultural education are sought for better functioning in a wider parameter of multi-functional agriculture (Mancebo et al, 2002). In so-doing, there is an urgent need for the region to “diagnose the root problems of the system, examine its strengths and weaknesses and project a future scenario to develop/or improve a responsive agriculture education system..” (Mancebo, 1999).

Thailand is a leading food exporter in south-east Asia. Since the nation’s first social and economic development plan (1958-1964), agricultural development has continued to receive due attention. Although economic growth has been more significant in the industrial sector over the recent decade, agriculture remains an important part of the national economy and the Thai culture.

Along the road to “progress”, the major economic crisis of 1997 evidently stirred up an intense awareness of critical problems that have accumulated from the four decades of mainstream path to development. Lending his thought to alleviate the crisis, King Bhumibhol issued his prominent philosophy of “sufficient economy” calling for the nation to seek alternative approach to development, with the goal of self-reliance, a balance of social and economic sustainability and contentedness. The King’s philosophy has been well received by policy makers, academics, and concerned development agencies, prompting a national agenda on a more balanced direction of national development. There was consequently a felt need for a rethinking of the country’s direction in agriculture. As a result, the latest national plan for agricultural development (2,002-2,006) has shifted from development that relies solely on the mainstream agriculture to a more balanced “dualistic approach” of Thai agriculture. Under this renewed direction, there is competitive “export-oriented” agriculture on one side, and “sufficient agriculture” for small-scale farmers on the other (Ministry of Agriculture, 2002).

Reviewing the past developments of Thai agriculture, Lindsey Falvey, a regional expert on agricultural development, noted that the future of Thai agriculture depends on its quality of education, general as well as agricultural education (Falvey, 2,000). Agricultural education must therefore be re-oriented to serve the future direction of Thai agriculture.

Beginning in the year 1999, Thailand has embarked on a holistic educational reform. To achieve the goal of this reform, policy research is needed in all areas of education to elicit information required for strategic planning. Perceiving the significant role of agricultural education in fostering agricultural development, the Thailand Research Fund (TRF) initiated a nationwide study entitled “A Critical Review: Status and Prospects of Agricultural Education in Thailand”. The study examined holistically the system of agricultural education.
**Purpose**

The purpose of this research was to review the status and prospects of agricultural education in Thailand. The end-result was policy recommendations for agricultural education that is responsive to the changing contexts of national development. The specific objectives were:

1. To review historical developments of agricultural education in Thailand, and to determine factors associated with the past developments as well as the lessons learned.
2. To examine the current status and prospects of agricultural education in Thailand.

**Methods**

*Agricultural education* in this study refers to formal education in agriculture delivered at three levels; namely, **basic education, vocational education, and higher education**.

The study was conducted during the years 2003-2004. The research process consisted of three consecutive steps. Extensive documentary analysis set stage for subsequent in-depth empirical analysis. Reflective accounts secured from opinion leaders further enriched the findings. (*Figure 1*).

1. **Documentary analysis.**

   Documents on past developments of agricultural education were extensively reviewed, dating back to the 1950s period when the country opened up for a “modernized” approach to national development. Documents on the current prospects of agricultural education were also reviewed. The documents consisted of various sources of information: policy and plans issued by the government, historical accounts, research reports, philosophical and concept writings, secondary sources of data, and international documents available on the internet. Content analysis was performed on the data.

2. **Empirical analysis.** Main findings on status and prospects of agricultural education were obtained through the following methods:

   2.1 **Initial survey.** A survey was conducted to gather an overview of current status from educational organizations/institutions in charge of providing education in agriculture. Mostly secondary data were collected at this stage.

   2.2 **Interviews of key informants.** In-depth interviews were conducted from 43 leaders in agricultural education, agricultural development and agricultural business.

   2.3 **Case studies.** Twenty-three case studies of schools and educational institutions were secured from in-depth field study by the researchers. On the basis of multi-case/multi-site approach, the 23 cases were purposively selected to yield a diversified sample of schools, vocational colleges, and universities delivering agricultural education programs/activities.
A multi-methods approach was employed for data collection in each case study, as follows:

1) In-depth interviews of instructors, administrators, parents and community members, local wisdom farmers, and engaged educational researchers.
2) On-site observations of agricultural activities in the sample schools, vocational colleges, and universities. Documents on curricula and agriculture programs were also collected.
3) Attitude surveys of students at each level, supplemented with individual as well as group interviews of selected students.

Triangulation of methods yielded validity check for each case study. A total of 3,781 participants took part in the case studies, providing information in one way or another. Data from case studies were analyzed with content analysis and descriptive statistics.

### 3. Reflections from opinion leaders

A forum of 39 opinion leaders was conducted to secure reflections to preliminary research findings of this study, and to share their thoughts on policy implications for agricultural education. The opinion leaders were selected from all parties concerned: agricultural educators, local wisdom teachers, agricultural business, and government as well as non-government leaders in agricultural development.

![Figure 1. The research process](image-url)
Findings

The Lessons Learned

1. A Historical Profile of Agricultural Education in Thailand

1.1 Basic Agricultural Education

Over a century ago, dated back to the year 1898, formal agricultural education was first established in primary schools, under the provision of compulsory education. Basic agricultural education began with school gardening with the purpose of orienting students with fundamental agricultural knowledge and practices as a way of life. Agricultural teacher training schools were set up to supply the much-needed teachers, but were ceased only a decade after due to abrupt change in educational policy.

Later developments of basic agricultural education were mostly influenced by the U.S concept of agricultural education. Among the most prominent is the “comprehensive school” model implemented in secondary schools. Like most imported ideas in agricultural education, the project was short-life due to change in educational policy.

1.2 Vocational Agricultural Education

Extended from the early vocational education delivered in primary and secondary schools, vocational agricultural education was later delivered in specialized vocational colleges of agriculture. The period of 1970s was considered the “high time” of vocational agricultural education, with a rapid proliferation of agricultural colleges in response to the high demand for vocational manpower in the government sector. The three corner stones of vocational agriculture “classroom teaching-learning, FFA, and SAE” have been adopted as the basic model for Thai vocational agriculture, with the mixed outcomes of success and failure.

1.3 Higher Agricultural Education

Contemporary era of agricultural education in Thailand began in 1943 with an establishment of the first university specialized in agriculture, inspired by the US land-grant model. Stimulated by the green revolution of the 1960s-1970s, agricultural education during that period expanded rapidly to meet the nation’s demand for manpower and technology.

The past two decades saw a proliferation of public universities offering programs in agricultural sciences and related disciplines. The programs vary distinctively according to the background of universities, grouped into 3 categories: the existing comprehensive universities, newly up-lifted universities with vocational foundation, and newly up-lifted universities with teacher training foundation. Presently, nearly all of the total 78 universities offer programs in agriculture or related.

In conclusion, over the past 100 years, agricultural education has evolved with noted policy fluctuations. Significant factors contributing to past developments are listed: 1) vision of the fore-founders and supportive political wills, 2) the green revolution movement in the region during the periods 1960s-1970s; and 3) international supports, financially as well as academically, which were heavily influenced by the United States of America.
2. Impact of Agricultural Education

2.1 Primary Impact: Development of Human Resources and Technology

Impact of the green revolution on Asian agriculture located in Monsoon areas has been well documented (Itagaki, 1999). In the case of Thailand, the green revolution, rushing into the country during the 1960s-1970s, changed the face of Thai agriculture from subsistent farming to commercial/export-oriented agriculture. Growing with the green revolution, agricultural education has been instrumental to the country’s agricultural development by “producing people to produce technology”, contributing significantly to the success of Thailand as a leading food exporter of Asia.

2.2 Secondary Impact: Social Aspects of Mainstream Development

With exception of a country like Japan and South Korea, agricultural colleges and universities in Asia were originally inspired by the US land-grant model with the trilogy of mission—teaching, research, and outreach/extension. In a review of agricultural colleges and universities in Asia, Bernado (1985) pointed out that attempting to adopt the land-grant mission resulted in varying degree of success. A considerable success was noted in the case of India. In most other cases, the coordination of research and extension was hindered by the country’s organization structure. Another UNESCO regional survey revealed that much of the information generated from research by universities and colleges did not reach the intended users, primary the farmers (Saguiguit, 1987).

A similar case of limitation was observed in Thailand. Senior professors from leading colleges of agriculture recalled the strong orientation of the land-grant mission in the establishment of the first agricultural university. One leading professor noted of the change:

In Thailand, research and extension in agriculture is the responsibility of Ministry of Agriculture. Unlike in the US system, there is no effective linkage between colleges of agriculture and the ministry to cooperatively carry out the functions. So, as time goes by, we [college professors] tend to lose our sense of research-extension mission.

Outreach is a university function expected most by the majority farmers. When colleges of agriculture cannot fully meet such expectation, the issue of educational relevance is often raised. Local wisdom farmers as well as NGOs echo the question of “agricultural education for whom?” Cited below are among the reflections secured in this research:

From the first National Education Plan (1960), the university people have produced personnel and technology to serve primarily the demand of agribusiness, rather than the needs of small-scale farmers.

The gap between the rich big farmers/agribusiness and the small-scale farmers are more and more widened.

Shifting to commercial agriculture, small-scale farmers have lost the love of land, together with the sense of self-dependency.

The cited comments center on the issues of equity and access to agricultural development, an often cited secondary consequence of the past green revolution (Jit-sanguan et al, 2001). GDP alone is not accepted as a valid indicator of development. Using SDI (Sustainable Development Indicator) in his analysis, Uan-Sakul (2000) concluded that the
decade of development prior to the 1997 economic crisis in Thailand, did not contribute substantially to the uplifting of farmers’ quality of life and sustainability of environment. On the contrary, over the 35 years of the past 7 national development plans, a gap in income distribution between agricultural and non-agricultural sectors jumped from a ratio of $1:6$ to $1:13$. This big gap is an indicator of adverse impact of agricultural development on the agricultural population, particularly the small-scale farmers.

The underlined consequence of past development programs on small-scale farmers has received much attention in the recent years. But is agricultural education to blame? “There are various factors involved in the sustainability and well-beings of farmers. Why should agricultural education be the culprit after all?”, asked some respondents from colleges of agriculture. To the same question, local wisdom farmers had this to say:

*Who have benefited most from our agricultural education? Surely, not the Thai majority farmers. Agricultural education has not been responsive to our real needs...*

*What is taught in schools and colleges is not relevant to the reality of Thai agriculture and Thai farmers.*

The dilemma of educational relevance may be viewed differently from another angle. Key informants in the agribusiness sector admitted that agricultural education has contributed greatly to the growth of agribusiness. However, at present, teaching and research in colleges of agriculture do not link well with what exist in the reality. In their opinion, graduates today are not adequately prepared for the world of work in Thai agriculture, let alone to be part of competitive agribusiness at international scale.

In sum, the impact of agricultural education in the past has been evident on development of human resources and technology. The social impact--responding to the needs of the agricultural population, is much in question.

**Status and Prospects**

The existing system of Thai agricultural education is described at three levels.

1. *Basic Agricultural Education*

   Within the realm of the on-going educational reform, exemplary cases of school agricultural program were identified. Eight illustrative cases were grouped as follows:
   - Innovative learning through agriculture-based integrated curriculum
   - Agricultural activities for the socially/economically disadvantaged learners in rural areas
   - Sustainable agricultural projects nurtured by external supports

   Success factors for these cases were identified as: 1) school readiness, with committed agriculture teacher and supportive administrator, 2) community support from school board, parents, community leaders, and local wisdom farmers, and 3) external inputs, in funding and other supports, provided by various parties involved.

   On the contrary, irrelevant and non-stimulating programs characterized the more typical basic agricultural education found in this study. Constraints in such cases consist of school limiting factors and lack of supports in agricultural learning resources. New problems
also emerged, associated with weak links in the current educational reform, and school’s placing more emphasis in general education.

Table 1. **Strengths and weaknesses of Basic Agricultural Education**

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<tr>
<th>Strengths/opportunities</th>
<th>Weaknesses/constraints</th>
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<tr>
<td>- The current movements in learning reform encourage a favorable environment for relevant agricultural education. Design of community-based curriculum in agriculture - Involvement of community members, especially local wisdom in agriculture - Local network for learning, actively stimulated by government and non-government organizations</td>
<td>- Limitations hindered by the curriculum reform - An orientation toward “returns-to-the basic”. Agricultural education in the new curriculum is reduced. - Weak mechanism at school level to assist teachers in management of school-based curriculum that is relevant to the community needs</td>
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<td>- School limiting factors: - Lack of trained agriculture teachers and adequate learning resources - Low attention/support from school administrators</td>
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2. **Vocational Agricultural Education**

With the saturation of manpower in the government sector, the high time of vocational agricultural education has passed. Vocational colleges of agriculture today are facing critical problems of declining enrollment and subsequent budget shortfalls. However, with capacity of reaching the local clientele, vocational colleges of agriculture have played a key role in providing educational opportunity for the lower population of youth, mostly from agricultural sector.

Falling enrollment lead to poor profile of entering students, and subsequently low funding budget. As an alternative for existence, these colleges have broaden their service area, extending to the more promising vocational programs such as business administration and computer education. In this regard, vocational colleges of agriculture are gradually moving away from its agricultural specialization, turning toward comprehensive vocational/technical education without adequate resources. This phenomenon will have significant impact on future development of most colleges of vocational agriculture and the nation’s vocational manpower in agriculture.

Table 2. **Strengths and weaknesses of vocational agricultural education**

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<th>Strengths/opportunities</th>
<th>Weaknesses/constraints</th>
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<tr>
<td>- Sound philosophical basis in vocational agriculture - Good educational infrastructure accumulated from past developments to support vocational programs in agriculture - Strong tradition in community outreach</td>
<td>- Limited agricultural resources, a consequence of the unfocused proliferation - Critical problems of entering students (quantity/quality) - Critical budget shortfall, limited resources and experiences to cope with new areas of education in agriculture - Unfocused direction, a result of expanding service areas to non-agriculture programs</td>
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3. Higher Agricultural Education

1) Programs in agricultural sciences were characterized by diversity among universities with different foundations and different stages of development as previously mentioned. The strength of such diversity is the potentials of higher education to meet the demands of wide-range clientele, and in technology development/adaptations at various levels of use. However, concern was raised among the university respondents on the issue of quality standard--competition is more evident on quantity, less on quality.

2) Critical problems facing higher agricultural education were identified:
   • Lower quality of entering students, due to declined interest in conventional agricultural sciences in spite of the proliferation of degree programs.
   • Decline in quantity and quality of professional resources, a task force needed to carry further the educational mission. Within a given decade will see a loss of critical mass, up to 30-50% of senior professors in major universities, due to retirement. Only partial substitution is anticipated.
   • Pressure on self-reliance caused by the government policy on public university autonomy. Anticipation of financial tight has lead to a widespread commercialization of agricultural programs, a move toward the “market-driven model”. Extra income is also a major incentive for many faculty members.

3) Ideally, most universities with colleges/programs in agriculture shared a common ground of guiding philosophy based on the US land-grant mission. In practice, the sense of mission has deteriorated. The trend is much in common with the market-driven dilemma facing the US land-grant institutions (Hutchinson and Illiot, 2004).

4) The agricultural professionals perceived the aforementioned critical problems, and several solutions were explored through academic forums. However, strategic movements were not evident. Overall, progress has been slow in adapting to the rapidly changing circumstances. Colleges of agriculture in leading universities, the corpus of the system, have not taken adequate initiatives in reform activities.

Table 3. Strengths and weaknesses of higher agricultural education

<table>
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<tr>
<th>Strengths/opportunities</th>
<th>Weaknesses/constraints</th>
</tr>
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<tbody>
<tr>
<td>• Sound philosophical foundation; guiding the mission on teaching, research and outreach, inspired by the US land-grant model</td>
<td>• Diversity in program quality, caused primarily by unfocused proliferation of universities/degree programs in agriculture</td>
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<td>• Quality of existing resources in the well-established universities, serving as the nucleus for development of the more recent universities</td>
<td>• Anticipation of budget shortfalls, leading to:</td>
</tr>
<tr>
<td>• Diversity of programs in agricultural sciences serving the varying needs of manpower and technology development.</td>
<td>-Widespread of commercialized agricultural education</td>
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<td></td>
<td>-Decrease in the equity of access to higher education of the disadvantaged population, especially farmer youths.</td>
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<td>-Functional imbalance, particularly on the sense of mission.</td>
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At the reflection forum of this study, the opinion leaders arrived at this conclusion: the new paradigm of Thai agricultural development has set stage for alternative models of agricultural education. On the contrary, the system of agricultural education itself is still attached to the conventional rigid model of education.

Agricultural education worldwide shares the common “gloomy picture” of such problems as “steady erosion of attention from policy-makers; declining enrollments; deteriorating infrastructure, unemployment of graduates, a changing profile of students/trainees...” (Maguire, 1999). This study revealed that the system of agricultural education in Thailand is facing similar problems, and that provocative movement is lacking.

Looking Ahead: Policy Implications

Education for the Future of Thai agriculture

The strength of Thai economy lies in the potentials of its food production cluster. For a country with a distinctively dualistic society and economy, three dimensions of agricultural development must be considered holistically. These are: agriculture for sustainable Thai society, agriculture for sustainable economy, and agriculture for sustainable environment. In line with the established national plan for agricultural development, a dualistic approach of agricultural development is therefore reiterated:

• **Agriculture for competitiveness.** To be more competitive, export-oriented agriculture must be strengthened, with the balance of economic and environmental sustainability.

• **Agriculture for sustainability of the Thai dualistic society.** Based on the lessons learned, agricultural development must sustain an equilibrium of: “globalization-localization”, and “economic returns” of large-scale farmers, versus self-sufficiency” of small-holder farmers

To be more responsive, agricultural education needs to be multi-functional, sustaining a well balance of academic and social relevance.

Recommendations

A concerted effort from the agricultural education community is needed in moving agricultural education forward. Two levels of recommendations are proposed:

1. **At macro level.** An “agricultural education forum” should be established. This task force of the professionals in agricultural education, should assume the following responsibility:

   1.1 Formulation of a national plan for agricultural education. Research and activities are needed to provide support for this master plan, some of which are proposed:

   • Formulation of an operational plan of dualistic agricultural development, with involvement from agricultural educators, policy makers, private sectors, farmers, and government/non-government development personnel.

   • Analysis of manpower demands in agriculture, leading to a master plan of manpower supply in the agricultural sector.

   • Unit-cost analysis of educational program, focusing at vocational and higher level of education in agriculture. The analysis will provide a baseline data for budgeting.
1.2 Formulation of a strategic plan for agricultural education. A set of policy measures and key performance indicators should be defined.

1.3 Determination of key channel and mechanism for mobilizing the plan into action.

2. At micro/institutional level.

2.1 Strengthening of formal agricultural education at every level.

1) At basic education. Agricultural education must be adapted to the new curricular structure. Through university-school networking, model curricular/model schools can be initiated for integration of agricultural content in other subject areas, reflecting the variety of programs relevant to different contexts and needs of students. More support should be rendered for school programs that help to empower the disadvantaged population in rural areas. Emphasis should be placed on the process of active learning (i.e. good working habits), rather than the output (i.e. farm products and income).

2) At vocational education. Expanding the service areas to non-agriculture programs must be carefully considered. To better function under limited resources, clustering of vocational colleges of agriculture is strongly recommended. The notion of local-based center of excellence should be mobilized, based on the strength of each existing college. More emphasis should be placed on a better way of serving the local clientele. Through academic initiatives such as small-scale and local-based R&D projects, community-based learning can be enhanced while meeting the real needs of the community.

3) At higher education. Well-established colleges of agriculture in universities should take the lead in reforming agricultural education that is more responsive to the needs of the society. Keeping the “balance” is the key concept, as follows:

- Balance of mission (teaching, research and outreach). Strong sense of mission must be enhanced in the system of professional promotion and rewarding for faculty members. Viable linkage with Ministry of Agriculture must be strengthened in research and extension, particularly when dealing with small-scale farmers.

- Balance of disciplinary orientation. For agricultural sciences to be most relevant to the needs of the country, balance in the content must be considered in such aspects as “specialized/integrated knowledge”, “import-based technology/local-based technology”, “mainstream agriculture/alternative agriculture”, and “conventional agriculture/hybrid agriculture”. To maintain a good balance, restructuring of academic units and innovative curriculum design are needed. Funding for research projects must also take into consideration the balance of disciplinary orientation.

- Balance of program diversity and quality. A quality forum should be set up to establish and maintain guiding principles and minimum standards to be imposed on the degree curricula. The standards should also reflect diversity of programs and their objectives.

- Balance of “academic/social-driven” and “market-driven” models of education. The proposed quality forum should assume an active role keeping the balance on this aspect. Restructuring of resource management is needed for rendering of quality programs. Further more, the profession must communicate explicitly to policy makers that higher agricultural education runs the risk of losing the balance if unit-cost budgeting is strictly imposed.

- Balance of competition-cooperation. Horizontal as well as vertical networking of educational institutions should be strongly encouraged with viable implementing channel. Area-based networking of institutions should be strengthened.
2.2 Enhancing linkage between formal and non-formal education in agriculture.

As a compulsory component of degree program, experiential learning for college students and faculty can be achieved through problem-based academic activities that link theory to practical reality of Thai agriculture. A sense of social service can be enforced through small-scale interdisciplinary activities reaching target farmers and local food industrial cluster.

In addition to the key concepts presented in this paper, an outline of policy strategies with corresponding measures were proposed in the full report of this research. Details of the proposal cannot be presented in this paper due to the space limit.

References


