

DEVELOPMENT OF RAJABHAT UNIVERSITIES' TRAINING CURRICULUM ON ORGANIC AGRICULTURE FOR THAI FARMERS

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Abstract This research aimed at alleviating both Thai farmers' lifestyles and the organic rice consumers in safety. The objective was to develop a curriculum for rice farmers in shifting paradigms from chemical to organic farming which is the national agenda declared by the Thai cabinet on June 23, 2005, regarding policies on reconstructing agricultural produce to eradicate poverty and to make implicit local wisdom in Thai rice culture into explicit knowledge. Data collected were documents from both agricultural field studies and curricula in Rajabhat Universities, human resource development programs for agricultural staff sponsored by the Ministry of Agriculture and Corporate. Instruments used were interview schedules, survey instruments and questionnaires. Data were analyzed by content analysis and factor analysis. Results of the study were: (1) Organic farming related to community service by Rajabhat Universities was directed at students and community leaders in traditional delivery by lecture, training programs and academic conferences. (2) Best practices in organic rice farming emphasized Thai rice cultural knowledge, improvement of agricultural knowledge in villages and stressing priorities in management, marketing and productivity. (3) Best practices in accordance with Thai rice culture were Thai local wisdom, attachment between the monarch as an institution and Thai rice farmers, self-contained lifestyles, reliance on the supernatural and resistance to urban domination, land and water sources development and modern technology. (4) The curriculum for training Thai farmers in organic rice farming was developed from factor analysis resulting in 4 modules, namely, production, funding, marketing to increase productivity from the total cycle management and Thai rice culture. As for instruction, five approaches were laid bare, namely, agricultural reconstruction policies, authentic assessments, integration of organic rice farming with the Thai rice culture, differential learning in formative evaluation and self-directed summative evaluation. (5) A quasi-experimental study was conducted to test viability of the curriculum with thirty chemical rice farmers as subjects. The training was conducted at the Northeastern Development Foundation, Amphur Muang, Surin Province. The pretest and posttest scores of subjects were statistically significant at 0.01. After one month, a follow-up study was conducted and discovered continuous concrete application of the training in terms of preparation. Among recommendations suggested were development of a curriculum with the total cycle in Rajabhat Universities for regular students and application to train grass-root occupations. Furthermore, a consortium between Rajabhat Universities and relevant ministries in research and development according to the national agenda was encouraged. There is a growing worldwide interest in diverting back from chemical fertilizers to the traditional organic agricultural practices. Farmers in Thailand are among the least formally educated group of the population. However, farmers are vulnerable in times of crisis concerning toxic agricultural treatment, polluting the environment and detrimental to human and livestock health. Providing education and training is an essential component in rebuilding and rein stilling safe, organic practices. Additionally, a clever picture emerges of the national policy issues that need to be addressed to provide for Thai farmers in organic agricultural contexts. According to the decree promulgated by the cabinet on June 25, 2005, a holistic curriculum development for training agriculturalists should cover the areas of (1) production, (2) value-added productivity, (3) funding, (4) processing, (5) managing and marketing and (6) Thai rice culture. Bearing in mind these aforementioned situations, the researcher decided to focus on Thai farmers, especially natural leaders, who would guide their fellow farmers in the formulation, implementation, sharing, monitoring and self-evaluation of knowledge in organic cultivation of rice – the main staple of Thai people.

Objectives

The objective of the study was fourfold. Firstly, it aimed to study state of the art of organic agricultural practices in communities. Secondly, to determine the best practices in essential organic rice cultivating cycles. Thirdly, the best practiced derived were to be integrated in alignment with the socially inherent Thai rice culture. Fourthly, a curriculum on organic agriculture for Thai farmers was proposed and validated.

Scope

This project involved the substance of the decree promulgated by the Cabinet in 2005. Data were collected only in the four faculties in Rajabhat universities, offering undergraduate programs in agricultural studies, totaling 15 universities. One university served as a try-out, leaving 14 for data sources. The curriculum developed is a short, intensive one specifically designed to serve rice farmers. Upon successful completion, a certificate is granted. Conditions for successful implementation lie in the entering behaviors of both the trainers and the trainees. It is mandatory that the trainers should have academic backgrounds in not only agriculture but also education.

Theoretical propositions

The research focuses on the power of training modules in enhancing competencies of rice farmers in organic farming as a mission on community service by Rajabhat Universities. Additionally, the mission in enrichment of culture is also fulfilled by the integration of the Thai rice culture in the proposed curriculum (Sinlarat, 1986; Achave-Amrung, 2002; Kerr, 1994). Significance of organic farming is studied in terms of sustainable development, increase in productivity and income, demands on the global basis, health and environmental studies (Saenpote, 2000; FAO, 2000; UNCTAD, WTO, 1998). Other theoretical foundations are cited in the topics of agriculture restructuring policy on the national level, knowledge in organic farming, best practices and the Thai rice culture (Pitawatthachai, 2005). Regarding curriculum development, theories and principles used were philosophical foundation on the nature of knowledge (Harnpanich, 2003) and process of curriculum development (Pratt, 1994; Henson, 2001). Moreover, considerations in designing the curriculum appropriate for function literate Thai farmer, built-in the training modules are environmental management for learning, (Netherlands Institute for Curriculum Development, 2001); Teaching adult learning (Abiko, 2002); Co-operative learning styles (Palincsar and Brown, 1984); Individualization in instruction (Tomlinson, 2005); Paradigm shift in agriculture (Koopman and Wilde, 2004), Constructivism (Devries, 1990 and Jonassen, 1992); Community education (Dewey, 1906; Roy, 2002) and Portfolio assessment (Nettles and Patrick, 2005).

Method

Developing a curriculum for the training of Thai rice farmers in the best practice of organic cultivation is crucial to Thailand, facing an increasing social demand for education for the grassroots and involving in reconstructing safe and productive agricultural system after intensive environmental pollution from chemical approach. The integrated qualitative and quantitative design is as follows.

1. Study state of art regarding organic farming relative to academic service and enriching culture in Rajabhat Universities.
2. Ascertaining essence in best practices of organic farming cycles.
3. Synthesizing best practice process with the Thai rice culture.
4. Development of the organic rice farming curriculum, encompassing its revision, validation, try-out and approval.

Data sources covered (1) twenty-five documents on organic farming and curriculum development; (2) five experts in higher education institutions; (3) six organic rice farming experts from the Rice Research Institute, Department of Agricultural Development Ministry of Agriculture and Co-operatives; (4) three-hundred and thirty-four faculty members from 14 Rajabhat Universities; (5) thirty chemically-practicing rice farmers and (6) thirty experts in validation and approval of the curriculum proposed.

Questionnaires and interview schedules were developed and used by the researcher. Documents and interviewed results were content analyzed and presented in dendrograms. Questionnaires scores were analyzed by factor analysis. Finally, a quasi-experiment was conducted to validate the training modules.

Results and discussion

The findings from this study offered strong support for the researcher's assumption on the need for a training curriculum, designed for rice farmers regarding organic approach. Results are presented in four sections in accordance to the research methods as follows.

1. Present organic farming relative to academic service and enriching culture in Rajabhat Universities. The majority of academic service and cultural enrichment were geared to students and community leaders and not diffused to the grassroots levels, including farmers. Most current trainers are leaders in business applications, administrator of village funds, biological science researchers and Thai kitchen to global franchise interested parties. Training techniques frequently used are lectures, and tradition dissemination of knowledge. Intensive, short courses are non-existent. No certificates of quality assurance or any other credentials are given. As confirmed by Prasarn Malakul and associates (1977), in the past University priority was lacking in the service of grassroots levels due to insufficient policy and planning, including necessary financial support Universities need to involve locality especially, the integration of local data and local wisdom to identify effective solutions to local problems (Sapnirun, 2001). Life-long education process should serve as the vehicle in organizing workshops, seminars, consultative sessions and the like (Malakul et al, 1977).

2. Essence in best practices of organic farming cycles. Rituals are prevalent in the Thai rice culture. Unfortunately, they approaching extinction and should be revived and enriched. The socio-economic national plan number nine highlighted such endeavors in promoting His Majesty the King's self-sufficiency economy as immunity for agricultural crisis and a guarantee for sustainable development. The process conceptualizes at the micro level of families to the community and finally to the nation at large (Jitsa-ngun, 2000 in Patanothai, 2001).

3. A synthesis of best practices with the Thai rice culture. Local wisdom is closely related to the Thai rice culture, as well as attachment to the royalty. An activity in agreement with the culture is self-containment, superstitious beliefs in the spiritual entities of the earth and water sources. Traditions against urbanization of agricultural land are still strong. Freedom is still the core element of lifestyles. The findings confirm significance of a synthesis of local

wisdom with modern technology in the revival of organic farming. Such local culture and rituals are symbolic of balanced system between man and nature and necessary for survival of the fragile earth in this age of climate change (Charoenrat, 2000)

4. *Development of Rajabhat Universities' training curriculum on organic agriculture for Thai farmers.* Finding highlighted as the basis for the curriculum development cover 15 main elements. Firstly, toxin-free agricultural production guarantees high quality produce. Secondly, specific strategies are inherent in agricultural processes which are nature-centered. Thirdly, agricultural production which stresses management of plants, soil and water optimally required by the needs of rice at particular time should be observed. These three points leads to a firm conclusion of chemical eradication in rice farming. Sustainable development is possible without chemical harms to the environment and living things. Appropriate saplings are to be selected for immunity to natural pests as well (Ministry of Agriculture and Co-operatives, 2004 and Arsaichao, 2003).

Public Sector	Creative self – directed learning	Outcomes from training in communities	Private sector
1. National agenda	Competencies in the complete organic farming cycle.	Competencies in learning as specified in curriculum and instruction.	1. Farmer Groups
2. Ministry of Agriculture - Academic Department - Agricultural Development - Rice Research Institute	- Production - Productivity - Funding - Processing - Managing and marketing - Thai rice culture	- The policy on agricultural restructuring -Authentic assessment - Integration of organic rice farming and Thai rice culture - Instruction and formative evaluation based on individual differences. - Summative evaluation on self-directed learning	2. IFOAM 3. Export-import enterprises both in Thailand and abroad.
3. Ministry of Commerce			
4. Ministry of Industry			
	Essence in Organic Farming	Essence in Curriculum and Instruction	

Figure 1: Essence of the Curriculum for training of Thai rice farmers in organic farming within the context of both the public and private sectors.

The fourth point indicates the necessity in quality control of produce by grading selection which goes together with the fifth point – the consortium among stakeholders, such as Ministry of Commerce, Ministry of Industry. Such cooperation facilitates *value – added productivity* (Ministry of Agriculture and Co-operatives, 2004). Handling process should meet the international requirements of evaluation, analysis, monitoring and quality control which were found in point (6) financing through village funds, (7) risk-management by produce price guarantees and (8) financial knowledge such as basic accounting (Varinrak, 2005).

As for *process*, point nine emphasizes the total cycle of productivity assurance by restructuring production processes towards a learning organizational paradigm. Knowledge sharing of successful practitioners is encouraged. The remaining points strengthen the process. They are (10) international marketing efforts of organic produce; (11) establishment of marketing network, involving the Agricultural Marketing Organization; (12) study of marketing mechanism is mandatory in successful local and international sales; (13) setting standards of produce by accredited

authority honored by all consumers and (14) consortium with the Ministry of Commerce and the Ministry of Industry in *marketing management* aiming at international markets. The role of such an authority covers standard setting, inspection, certification and accreditation similar to IFOAM and ECC (Agricultural Division of Surin Province, 2003). The last major point discovered concerns the Thai rice culture. All rituals are symbolic of wishes for the best produce returns, not contaminated by pests (Pitatawatchai, 2005). The Thai rice culture contributes to the rural lifestyles of freedom self-containment and attachment to land which is confirmed by land ownership in farmer hands for over a century as compared to other developing countries (Pongpaichit and Baker, 2003).

In conclusion, the curriculum developed, revised and validated comprises three main elements: curriculum, instruction and evaluation.

The curriculum contains two main parts. They are farming system and specific production techniques. Instruction focuses on coaching, authentic learning, constructivism and self-directed learning. Activities given are “physical knowledge activities” of hand-on time-on-task to facilitate not so literate farmers (Devries, 1992). As for evaluation, the method is goal-free or socially-negotiated goal with a variety of evidences, including portfolios, using real world criteria (Jonassen, 1992 and Khammanee, 2001).

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