

The Interdisciplinary Experience of the NERAD Project

บทคัดย่อ

โครงการพัฒนาการเกษตรอาศัยน้ำฝนภาคตะวันออกเฉียงเหนือ (NERAD) เป็นโครงการที่มีลักษณะผสมผสานงานด้านวิจัยและส่งเสริมระหว่างหน่วยงานต่าง ๆ ของกระทรวงเกษตรและสหกรณ์ โดยมีวัตถุประสงค์เพื่อยกระดับรายได้และสภาพความเป็นอยู่ของเกษตรกรรายกจนในเขตอาศัยน้ำฝน ภาคตะวันออกเฉียงเหนือ กำส่งดำเนินงานในพื้นที่ซึ่งมีลักษณะนิเวศน์เกษตรแตกต่างกัน 9 ตำบลใน 4 จังหวัดของภาคฯ

โครงการนี้มีลักษณะการดำเนินงานวิจัยในระบบการทำฟาร์ม กล่าวคือ มีกลยุทธ์ในรูปการปรับและประสานงานวิจัยกับงานส่งเสริมให้สอดคล้องกับสภาพการดำรงชีพของเกษตรกร โดยคำนึงถึงสภาพการณ์ที่เป็นจริง ดังนั้นในขั้นแรกของโครงการจึงมีการออกแบบเร่งด่วน โดยใช้ทีมสหวิชาของเจ้าหน้าที่จากหน่วยงานต่าง ๆ เพื่อให้เข้าใจสภาพการเกษตรและการดำรงชีพอื่น ๆ เพื่อศึกษาถึงลักษณะปัญหาและความต้องการที่แท้จริงของเกษตรกร ทั้งนี้เพื่อหา路子ทางในการกำหนดงานวิจัยและการถ่ายทอดวิทยาการที่ปรับใช้แล้วให้แก่เกษตรกร พร้อมกันนั้นก็เพื่อหาแนวทางยกระดับขีดความสามารถของเกษตรกร ให้สามารถประยุกต์ใช้วิทยาการแผนใหม่เพื่อเพิ่มผลผลิตในเขตเกษตรน้ำฝน

สำหรับรูปแบบของการจัดองค์กรนั้น การบริหารโครงการ NERAD ขึ้นโดยตรงต่อสำนักงานปลัดกระทรวงเกษตรและสหกรณ์ โดยมีสำนักงานเกษตรภาคตะวันออกเฉียงเหนือเป็นผู้ประสานงานอย่างใกล้ชิดระหว่างหน่วยงานต่าง ๆ ของกระทรวงเกษตรและสหกรณ์ กับส่วนบริหารราชการของ 4 จังหวัด ซึ่งทางโครงการมีพื้นที่ดำเนินการอยู่

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BACKGROUND

Approximately eighty percent or more of the land in Northeast Thailand is located outside of areas which are serviced by irrigation projects. These rainfed areas contain the majority of the poverty stricken farmers of the region. Most of these subsistence farmers have a rice-based farming system consisting of: some upland or vegetable crops before and/or after rice production; upland planted mostly in cassava or kenaf; animal production; fishing activities; some hunting and gathering activities, cottage industry; and off-farm employment. Historically, different types of farming systems have evolved in response to diverse agro-climatic, socio-economic and institutional conditions. Traditionally, the Ministry of Agriculture and Cooperatives (MOAC) has in most cases tried to develop agriculture in these rainfed areas with a commodity-oriented approach which encompassed a fragmented effort by experiment stations of the various departments doing research and by the Department of Agricultural Extension (DOAE).

Recently the MOAC has undertaken several projects which attempt a more holistic approach to the problem of agriculture development. Some of these projects are: the UNDP funded assistance to the Department of Agriculture (DOA) on rainfed cropping systems; UN/FAO support of rainfed research and development; general cropping systems work by DOA; the World Bank funded Rainfed Project, the EEC funded crop diversification project; and the Land Settlements Project, to name a few. Outside of the MOAC there were other systematic attempts to analyze cropping or farming systems, such as the Ford funded Multiple Cropping Project at Chiangmai University and the Cropping Systems Project at Khon Kaen University. However, it was not until the Northeast Rainfed Agricultural Development (NERAD) Project was begun, in September 1981, that the farming systems approach under varying the rainfed conditions of the Northeast was initiated. The goal of NERAD is to increase the economic well-being, security, and quality of life of poor Northeastern farm families on a sustainable basis. The approach being taken is to an adaptive research and

extension system which is readily accessible and responsive both to the individual needs of the farm family. Nine tambons (101 villages) were chosen in Chaiyaphum, Roi Et, Srisaket, and Nakhon Phanom. These tambons represent the major agro-climatological and socio-economic conditions of the region, as so-called pilot areas, in which to develop this adaptive research and extension system and subsequently the technology which would evolve from it.

The farming systems approach seemed intuitively best since farmers themselves look at their farms in a holistic manner. The strategy of NERAD is to forge a coalition of research and extension with the farmer in order to assess and solve the problems of his agricultural livelihood. This strategy has two focal points. The first is at the level of the MOAC departments and their capacity to develop the above mentioned adaptive research and extension systems to deliver relevant and appropriate services to rainfed farmers. The second focal point is the farmers' capacity both individually and as members of the community to confidently and effectively manage their resources under modern pressures to achieve productivity on sustainable basis. This capacity of self-reliance needs to be rekindled in villages so that MOAC services will be viewed by villagers as resources to them. A partnership of research, extension and farmers can accomplish this objective.

ORGANIZATION

One aspect of the uniqueness of NERAD with the farming systems approach, is its attempt to enlist most of the departments of the MOAC who play major roles in the development of Northeastern rainfed agriculture. The cooperating departments are: the Department of Agriculture (DOA), the Department of Agricultural Extension (DOAE), the Department of Livestock Development (DOLD), the Department of Fisheries (DOF), the Royal Forestry Department (RFD), the Department of Land Development (DLD), the Office of Agricultural Economics (OAE), and the Cooperative Promotion Department (CPD). The Project Director manages and coordinates the Pro-

ject from the Northeast Regional Office of Agriculture and Cooperatives (NEROAC) at Tha Phra, Khon Kaen. This is in line with the recent MOAC redefinition of the role of regional centers in integrated MOAC projects which cross departmental lines. Operational level coordination at the provincial level is then accomplished by four NEROAC-based field managers who spend about 70 percent of their time in their respective provinces. Their role is to facilitate and coordinate Project processes and activities into regular MOAC departmental activities. Assisting NEROAC and the departments is a technical assistance team which is composed of three specialists from the University of Kentucky in the fields of soil science cropping systems and economics; and one Thai national training specialist. The three specialists will assist NEROAC and the departments in developing their capacity to deliver responsive, accessible and relevant services. The role of the training specialist is to facilitate the development of community capacity to better manage resources through better utilization of MOAC services.

Coordination of the Project at the national level is under the Office of the Permanent Secretary with departmental coordinators representing the various Directors-General. Periodic meetings with these coordinators are held for strategic and tactical planning, to monitor progress, and to generally solve implementation problems. Local level coordination for NERAD is accomplished by a subcommittee of the Changwat Development Committee. It is composed of the provincial heads of the cooperating MOAC departments and chaired by the respective governors and the Field Managers are secretaries to this subcommittee. Their role is not only to approve the Tambon Development Plans from the field level, but to do operational level assessment, planning, monitoring and implementation of their respective departments' activities.

IMPLEMENTATION

From its inception there seemed to be common agreement that the "farming systems" was the most appropriate approach. As implementation

planning began the complexity of rainfed farming systems and the realities of integrating the efforts of the MOAC agencies necessitated a special elaboration of the Project strategy. Hence, a regional level Farming Systems Working Group was formed with persons from the various departments involved in the Project. The function of this group was, generally, to guide and facilitate the learning process of the Project, which can be viewed as adaptive and innovative learning. The adaptive learning component refers to the feedback of information to participating departments from the implementation of sub-project activities. These include sub-projects such as: composting, shallow-wells, native chicken inoculation, etc.. This information is used to redesign more effective and efficient activities. The innovative learning component refers to exploratory research and pilot activities which allow the participating departments to explore the needs and potentials of significantly new approaches in dealing with farming systems research and extension. Here there is an emphasis on the role of farmers as individuals and groups in assessing needs, planning, implementing, and evaluating processes and activities. This is all designed to facilitate the institutional learning process within the MOAC departments.

In order to develop a more responsive and adaptive systems at the village level, the problem was broken into three sub-system components which would at first facilitate administrative and technical simplicity. A better understanding farmers' wants and needs, existing farming systems, problems and constraints, and potential solutions. Ultimate integration of the three components in the future would result into a more cogent farming systems approach. These three components are:

<u>Component</u>	<u>Agencies</u>
1. Cropping Systems Research/Extension	DOA, DLD, OAE, CPD, DOAE, KKU, NEROAC
2. Village Water Resource Management (primarily ponds and community wells)	DOF, DLD, DOAE, KKU, NEROAC

<u>Component</u>	<u>Agencies</u>
3. Village Common Lands Management (primarily communal lands)	RFD, DOLD, DOAE, NEROAC

Each of these three components, actually working groups of the larger Farming Systems Working Group, would then manage the learning process for each component. The strategy of the Cropping Systems Working Group will be more fully elaborated since at the present time it is receiving emphasis of the three groups. The strategy and method of implementation of the other two working groups should prove quite similar.

Cropping Systems Strategy

To reiterate the project purpose with special reference to cropping systems, NERAD is developing an adaptive research and extension system which hopes to become readily accessible and responsive to the individual needs of the farmfamily in rainfed areas of Northeast Thailand. In order to achieve this purpose the institutional capacity in the agencies and villages has to be enhanced. Integration of the various agencies in the process can be viewed as a means of attaining the purpose rather than as an end in itself. There are several elements (or outputs) of the strategy to attain the purpose.

First, an effective process will be sought whereby the research and extension systems work with the farmers to assess their farming/cropping systems needs. This is operationalized by the use of multi-disciplinary Rapid Assessment Technique (RAT) teams and will be more fully elaborated later.

Secondly, a system will be established to identify existing technology or generate new technology appropriate to the needs assessed. Inter departmental collaboration with the farmer of on-farm trials and demonstrations will be emphasized in order to find a truly appropriate technology.

Third, a system will be put in place to deliver this appropriate technology to farmers. Here the purpose is to make this technology readily accessible to farmers through trials, demonstrations or training.

Fourth, the whole learning process needs to be institutionalized by feeding back the lessons learned and the knowledge generated into the research and extension system whereby agency programs and procedures to be adapted. For example, this feedback could change the training content or methods for the kaset tambon or specialist farmers. Or, research undertaken collaboratively with extension and farmers would become more flexibly problem rather than technology oriented.

Implementation Approach

Through the collaboration of research, extension and farmers, the locus of action, learning and responsibility will be shifted from the temporary project structures to those of the permanent structures, that is, those of the departments and NEROAC. Only through this integrated effort can the project purpose be attained.

To assist the Regional Cropping Systems Working Group will be that of a provincial one focusing on that particular province. This is not only an effort to decentralize but to also facilitate a multi-disciplinary, responsive effort at the local level.

The strategy here is to try to link up the farmers with local level experiment stations to solve their cropping systems problems. Extension should provide that link through the kaset tambon and the subject mater specialist (SMS). The kaset tambon is to serve as a broker encouraging direct contact between villagers and researchers. The interactions between researchers and kaset tambons is to acquaint them with new developments of possible interest to farmers in the region and familiarize them with sources of assistance available. When priority

needs are identified or farmers express interest in a new innovations, the kaset tambon could pass them on to the relevant subject matter specialist or other sources.

Selectively, interdisciplinary teams could respond to village invitations to work on farming systems problems suggesting recommendations for which the farmers may want to collaboratively test with specialist researchers. This not only encourages a more interdisciplinary approach within the research system but provides feedback into it in setting research priorities and providing a mechanism for more relevant research.

Rapid Assessment Technique

In this present year (FY 26) one village in each of the four NERAD provinces was selected to receive special emphasis for cropping systems activities. RAT teams were formed in each province along multi-disciplinary lines including: local experiment station researchers (DOA); a soil specialist from a local DLD center; an agricultural economist (OAE); a local marketing specialist (CPD); DOAE personnel, including an SMS, kaset amphur and kaset tambon; the Field Manager for the province; and several personnel from NEROAC including a member of the Technical Assistance team.

The purpose of the RAT team first was to examine existing cropping systems and understand the farmers' problems, constraints and decision making process. Then secondly, to examine any desired changes by the farmer. Then a dialog was to be set up with farmers as to needs assessment and possible solutions from both technical and practical perspectives. Subsequently, cropping systems patterns (trials and demonstrations), be they with single or multiple crops, would be collaboratively designed, tested, monitored and evaluated collaboratively by researchers, extension and farmers.

As of the present time initial reconnaissance and needs assessment have taken place. Tentative proposals for cropping systems activities, that is, trials and demonstrations, have been suggested. As yet the RAT teams have returned to the villages to review the proposals with the villagers. Mostly farmer-controlled trials will be made this year. The following general types will be undertaken in the four principal villages based on joint researcher, extension, and farmer assessment in the RAT process. At this point misuse of fertilizer seems to be a real problem in paddy fields, therefore, trials will be undertaken to compare the present use with a recommended type. Production of field or vegetable crops in both paddy fields before rice and in upland fields vary in the four provinces, but improved patterns based on existing cropping patterns will be tested. Some high-yielding rice varieties will be tested in some locations. Additionally, there will be some demonstration of proper pesticide application.

Conclusions

Throughout the period of formation of the Cropping Systems Working Group and subsequent RAT team planning, teamwork was emphasized. This was enhanced by establishing a dialog amongst the various departments about administrative, technical, or operational problems which were at hand or anticipated. This was not only done at the central department level but also at the local level, that is at the changwat and amphur levels. These field level officials seemed extremely anxious to cooperate with each other across departmental lines in the rapid assessment process. Even though these cropping systems trials have yet to take place, the local level personnel in the RAT teams have already assigned duties and responsibilities for trials implementation and monitoring which necessitates cooperation across department lines. For, example the monitoring of the trials will be done jointly by DOA personnel who are in charge of the trials, by OAE personnel who have monitoring and analysis responsibilities of cropping systems and by DOAE personnel, that is the kaset tambon who is the MOAC permanent representative at the village level.

While this teamwork and esprit de corps is not yet perfect it has come along way since the beginning of the project. If we can maintain administrative and budgetary flexibility to respond to farmers needs and encourage MOAC officials creativity and enthusiasm, this spirit should continue to grow.