

403002 * 2
1/2/87
50731

NERAD PROJECT METHODOLOGY DOCUMENTATION SERIES
WORKING PAPER NO.44*

*
* THE RAPID ASSESSMENT TECHNIQUE (RAT): A PROCEDURE FOR *
* IDENTIFYING FARMER PROBLEMS AND DEVELOPMENT OPPORTUNITIES *
*

Northeast Rainfed Agricultural Development Project (NERAD),
Northeast Regional Office of Agriculture,
Tha Phra, Khon Kaen 40260, Thailand.
May, 1987

Prepared by:

Charles T. Alton, formerly NERAD Project Advisor.
Iain A. Craig, Farming Systems Specialist T.A. Team, NERAD.

* Other papers in this series are listed in Appendix 4 of this report and are available on written request from the Project Director.

THE RAPID ASSESSMENT TECHNIQUE (RAT): A PROCEDURE FOR IDENTIFYING FARMER PROBLEMS AND DEVELOPMENT OPPORTUNITIES

BACKGROUND AND DESCRIPTION

The purpose of this paper is to review the Rapid Assessment Technique (RAT) conducted within the cropping systems (C.S.) component of the NERAD Project to document its successes, its shortcomings and the lessons learned in order to facilitate its use by other agencies or projects concerned with rainfed agricultural development and to gain feedback in order to improve the technique in the future.

Assessments of farmer problems are usually made from a commodity-oriented perspective of a centrally-located researcher or an experiment station researcher located in the provinces. Based on the problems thus perceived, on-farm cropping systems trials are similarly usually implemented by a single agency based upon the technologies available from its various experiment stations. This leads to trials that are invariably technology-based, usually mandated from the various commodity and technical institutes, with agronomists as the only discipline involved in trial implementation and thus linkages with extension and other agencies are often rather weak.

The Rapid Assessment Technique (RAT) is a tool which can be used to overcome these problems. First, it can be used as a means of determining the needs, problems and constraints facing farmers as regards agricultural development within the target area and as an effective tool for planning, implementing and analysing the R & E trials thus implemented. Secondly, it can help to promote inter-departmental cooperation amongst the relevant agencies thereby fostering an inter-disciplinary approach to agricultural research and extension.

RAT is a new technique, still undergoing development and refinement. It is essentially a needs assessment procedure utilizing semi-structured interviewing techniques conducted by a small group of experienced personnel who follow up on leads, revise questions and probe some areas in more depth than would be possible with a formal survey. The ability to submit the findings to rigorous statistical analysis is sacrificed in order to gain an in-depth, holistic understanding of the situation. At the same time it allows the researchers to learn from the farmers themselves who have considerable technical knowledge valuable to the research and extension process.

RAT has a number of advantages. Firstly, it is economical in its use of both time and manpower and the information obtained is such that it can be immediately used to specify relevant research and extension (R & E) priorities. Secondly, it promotes a highly effective interdisciplinary forum for problem identification and

solving which results in a much clearer 'system' understanding than can be achieved by the analysis of each component in isolation. This is compatible with the farming systems approach to research and extension and helps to produce a 'closer-knit' R & E system by being responsive to farmers' needs as articulated by the farmer himself, thus establishing a dialogue between R & E workers and the farmer. Finally the RAT process fosters the involvement of staff not only across a large number of concerned agencies but also the participation of staff throughout the entire departmental structure from national, provincial, district and local levels. In addition, it creates the opportunity for all concerned officials to participate at each stage of the R & E process from planning through implementation to eventual analysis and evaluation of results as opposed to individuals working solely on one stage and never fully understanding how it relates to the entire process.

METHOD OF USE

RAT's differ from traditional Rapid Rural Appraisals (RRA's) in that they cover the whole process of development in a dynamic and iterative manner. Ideally, they should be considered as part of an ongoing process of target site description, needs assessment, technology research and development planning, monitoring and evaluation. The suggested scheduling of the various stages of the process are presented in Appendix 1 and the remainder of this section describes the stages in detail with a summary of implementation guidelines for each.

1. DEFINITION OF OBJECTIVES

This initial phase consists of clearly defining the objectives of the RAT and can best be achieved by agreeing to a series of key questions that need to be answered during the needs assessment. These questions will vary according to the specific purpose for which the RAT is being conducted but as an example the following were found to be useful for a RAT aimed at identifying the cropping systems development needs of target farmers:

1. What are the existing cropping patterns and what are their relationships in time and space with local agro-ecological and socio-economic conditions?
2. Why is the existing pattern being practised?
3. What are the key problems and constraints in the current cropping patterns and how can they be alleviated?
4. What changes would the farmers like to make to these patterns and what is the technical feasibility of the desired changes?

2. ORIENTATION OF THE CONCERNED AGENCIES

The RAT process encourages the participation of field level staff as a means of incorporating local experience and expertise into the planning process and in order to achieve this it is necessary to delegate responsibility to local level personnel. It is essential, therefore, firstly to ensure support for this from the higher level, often centrally located, senior officials of those agencies involved in the RAT. This can be done by discussing concepts, potential advantages and tentative plans with responsible agency representatives, who will provide team members, to get their suggestions and feedback on the process. It is best achieved, however, by inviting active involvement of these officials in the implementation of the RAT. Although this is often very difficult to achieve, it is highly desirable in order to foster a future commitment for the process.

3. COLLECTION OF AVAILABLE DATA AND INFORMATION

The RAT process should not rely solely on the information gained during farmer interviews, and right from the planning stage as much use as possible should be made of the information and secondary data that is already available for the target area.

The availability of relevant data is quite variable depending on the purpose and target area of the RAT. However, all available information on: climate, soils, topography, land-use, socio-economics, demography, etc. should be collected and prepared for use. If time and resources permit, experience has shown that Agroecosystems Analysis is an extremely valuable tool in preparing for RAT's (Phreukantrakorn et al., 1987; Limpinuntana and Patanothai, 1982; Craig, et al., 1986, Conway, 1986 and 1987).

4. RAT TEAM FORMATION

Decisions concerning team composition should attempt to achieve the correct mix of disciplines, agencies and levels of official responsibility. For the purpose of cropping systems development, it was found that each team should include as a minimum the disciplines of agronomy, soil science, agricultural economics, agricultural extension and rural sociology or anthropology in order to ensure a holistic understanding of the target agricultural systems and to facilitate an interdisciplinary cross fertilization of ideas. Every agency that will be concerned with the implementation of development activities should be represented in the RAT teams and if possible officials from each level in the administrative hierarchy should be included. The balance of senior to junior officials should be very carefully considered, however, as the presence of senior officials can inhibit the active involvement of junior, field level staff whose participation is essential for the successful implementation of the RAT. If doubts exist, it is safer to favor field level representation on the teams.

5. TRAINING OF THE RAT TEAMS

It should be emphasized that the ability to conduct a successful RAT must be developed by giving the trainees 'hands-on' experience. Although classroom training in RAT procedures is important, the best way to develop individual skills in the relevant techniques is by providing the opportunity for trainees to conduct RAT's with experienced practitioners.

Classroom Training in RAT methodologies and techniques is best conducted in a workshop type setting with lecture sessions interspersed with workgroup tasks or reviews. The workgroup sessions should concentrate on developing the tools needed to elicit the key information pertinent to the objectives of the RAT. The workgroups should be formed to include personnel that will later comprise the individual RAT Teams so as to act as the forum for inter-disciplinary discussion where the seeds of true inter-departmental cooperation are sown as an essential prerequisite to a successful RAT approach.

The issues to be covered in alternating lectures and workgroup sessions should include:

- * Roles and function of the various disciplines in each team
- * Review and analysis of currently available data
- * Review of the relevant tools including: semi-structured interviewing techniques, crop calendars, mapping techniques, decision trees, labor and income profiles and rainfall graphs. (See Appendix 2. for a more detailed explanation of these).
- * Planning and scheduling for farmer interviewing and group discussion sessions during RAT implementation
- * Preparation of materials including: blank crop calendar forms, white boards, soil sampling equipment, graph paper, etc.
- * Defining criteria for the selection of target villages and farmers to be interviewed.
- * Drawing up tentative field schedules for each RAT Team.
- * Preparation of provisional travel and accommodation arrangements

By the end of the workshop the RAT teams should arrive at tentative hypotheses about system structure and performance for the target site. These should then be used to define the key questions that need to be answered by the RAT during farmer interviews.

6. FIELD IMPLEMENTATION OF THE RAT

RAT teams should spend about three to four days in the target site conducting intensive, semi-structured interview sessions in small sub-groups of 3 or 4 members with a limited sample of farmers. There are two major thrusts to the village assessment. First, interviews are conducted with individual farmers with the objective of gaining a farm-family-level understanding of the relevant farming system practices and problems. Secondly, questioning the village headman and integration of the farm-level assessments during plenary discussion periods allows a village-level picture of traditional practices and problems to be developed. A sample schedule for RAT activities during field implementation is presented in Appendix 3.

Early interviews and assessments sometimes reveal a skew in the initial farmer sample distribution often towards richer, large land-holders. In these instances, any bias should be corrected by adjusting the sample in later interviews.

During interview sessions it is essential to maintain a flexible approach and modify and refine questions throughout the RAT process, with the objective of achieving a less structured set of questions, and RAT team members more willing to follow up unusual or interesting answers and less pre-occupied with obtaining quantifiable answers to every question.

Farmer interviewing by the RAT teams should be interspersed with plenary sessions to exchange findings amongst sub-groups and for further discussion of tentative hypotheses. The group understanding emerging is then further scrutinized and questions formulated for the next day's interviews. This procedure is repeated until the team feels reasonably comfortable with common understandings of system characteristics.

Other activities that should be conducted during the village assessment include the production of simple maps showing major topographical and natural features relevant to the farming systems being studied and an attempt should be made to plot sample farmers' land-holdings on the map. This will help in locating fields for soil analysis and also enable the information obtained from farmer-interviews to be related to topographical or other physical features at the village level. Soil sampling should be a standard part of the RAT interview process and be conducted by the entire team with the farmer. Questioning should continue during sampling in the field where unusual topographical or soil features may prompt questions and where answers can be more easily related to actual land conditions. This is especially important in the case of sample farmers who mention specific soil-related cropping problems or who report unusually high or low yield levels in their current systems as field observation by the relevant discipline(s) on the team can often identify the source of any problem and suggest ameliorative measures.

7. PLANNING AND IMPLEMENTING DEVELOPMENT ACTIVITIES

Field assessments should conclude with a plenary session to discuss findings and form tentative hypotheses as regards the current constraints and problems, and to tentatively define and plan the future development activities needed for their solution. The entire team should then return to meet with villagers to jointly review the conclusions of the assessment and consider the proposed development activities. Revisions should be made in accordance with farmer comments and a first draft of an action plan for the target area should then be drawn up.

The potential feasibility of the proposed action plan should be analyzed as regards the organizational, budgetary, personnel and technological constraints before its submission to the relevant agencies for approval. Once the proposals have been approved, the RAT teams should return to the target site to discuss the plans in detail and make any necessary adjustments. Appropriate farmer-cooperators can then be selected for the development activities.

It is important to use the original RAT team members and interdisciplinary approach during implementation of the research trials and development activities in order to maintain and further develop the dialogue with the local community begun during the needs-assessment phase. All activities must have clearly stated objectives that are carefully explained to farmers and their agreement and commitment obtained before implementation. Clear agreement on the respective roles of the researcher and the farmer is also essential for each activity if later problems are to be avoided.

As results become available, the RAT approach can be used to evaluate their performance and to assess the extent to which they met their stated objectives as perceived by the local farmers. Plans and activities should be changed according to farmer perceptions and this is most easily achieved if the original teams are asked to assess the appropriateness of their own plans.

RESULTS AND LESSONS LEARNED

1. Most members of the RAT teams were at first uncertain about the validity of the approach and feared that without detailed questionnaires they would be unable to elicit the required information. But as they gained experience, they became more comfortable with open ended questioning and used such tools as crop calendars or maps to "prompt" both themselves and farmers. As a means of giving confidence to team members in the early interviews, pre-prepared questions can be prepared and utilized but their use should be discontinued as soon as sufficient experience has been gained.

2. The perception of the legitimacy of existing farming systems and the rationale of farmers strategies, gave most of the teams a new appreciation for the indigenous knowledge systems (IKS) of the farmers. The realization that experimentation is already conducted by some farmers helped in the choice of appropriate farmer-cooperators for technology development trials and provided a way to meaningfully utilize these farmer experiences.

3. RAT's can act as the beginning of a community-based information system as the holistic understanding of the local situation that they generate can be used for planning many development activities. Unfortunately, the ability of team members to conceptualize interactions within and among the physical, biological, and social systems in the target area is often slow to develop and opportunities can be lost by not viewing the RAT as an opportunity to continually dialogue with the farmers throughout the period of implementation of development activities in order to foster a mutual holistic understanding at the community level. It is recommended therefore that Changwat RAT teams be regularly reassembled in order to monitor results, assist in general implementation of the trials and development activities and agree on any modifications necessary.

4. After an initial period of adjustment different departments and disciplines worked together fairly well. However, younger and less tenured officials tended not to participate towards the end of the RATs-acquiescing to the elder or more educated team members. Thus, perhaps a good deal of information from those who are closest to farmers was lost. It may therefore be worth considering withdrawing the more experienced personnel from the teams once sufficient confidence in the approach has been gained by junior staff.

5. Experience suggests that the RAT process produces a different level of understanding from that achieved by conventional agro-economic surveys. There is a tendency, however, for rather a static picture to develop that essentially reflects the conditions pertaining last year which are most clear in the farmer's memory. RAT teams should be encouraged to use 'Triangulation Methodology' by which they elicit information for the last 3 years. Or alternatively, the following type of questions might be considered:

- What happened the year before?
- What do you intend to do this coming year?
- Was the information just given low, average or high for the longer term?
- Was that the same, more or less than in previous years or than for your neighbours?

POTENTIAL APPLICATIONS

There are certain pre-requisite conditions which need to be met for the successful implementation of a RAT.

The first condition: to be met is that of staffing. The local level RAT team members do not have to be the most senior, but should have sufficient technical expertise and practical experience to be able to effectively contribute to the team and later influence any field level decisions which need to be made concerning implementation of development activities subsequent to the RAT. There should be a fair complement of competent centrally-based, mid-level officials involved in the RAT. Not only will they contribute their experience, but will also be able to influence subsequent decisions at the central offices of their respective agencies.

The second condition: required is the analysis of secondary data in preparation for the RAT. A systems analysis has been found as the most useful. Agroecosystems analysis is recommended as the most appropriate means of preparing for a RAT. Key issues and constraints can be identified in preparation of hypotheses to be tested and verified in the field through the RAT.

The third condition: concerns the necessity of team building. The roles and functions of the various team members, including agronomists, economists, animal scientists, pathologists, extensionists, entomologists, aquaculturalists, etc., need to be clarified and integrated. Procedures and protocols have to be developed for the team's internal working and its external interactions with both other government officials and farmers.

The fourth condition: is that of RAT preparation and planning. Goals and purposes of the entire RAT process and how it fits with subsequent development activities must be clarified from the outset. This includes the basic groundwork that needs to be done within implementing agencies and also within villages in the target area to prepare all of those concerned for the RAT and subsequent activities.

The fifth condition: is that of training which should be done in cooperation with institutions experienced in RAT-type activities, such as the regional Universities. However, the needs of the implementing agencies must be reflected in the way the RAT training is conducted. Participating institutions should actively participate and provide guidance throughout the implementation of the RAT.

The sixth condition: Potential clients of the RAT technique are basically any group of agencies who have to implement integrated agricultural or rural development activities or programs. RAT's can also be used by a single agency which desires to achieve interdisciplinary analysis and coordinated actions. Potential targets would be farmer/villagers in rural Thailand.

CONCLUSIONS AND FURTHER DEVELOPMENT REQUIRED

RATs are not data but information gathering exercises. They are not substitutes for more formal surveys. They are not an excuse to be "quick and dirty" or to do what Chambers calls "development tourism". Many times RATs generate hypotheses that cannot be answered in a rapid assessment but require a formal survey.

Further use should be made of the more macro-level data after the RAT village assessment has taken place. It is recommended that time is put aside during the trial planning sessions to specifically assess how RAT findings are reflected in other available data sets. This should both increase the appropriateness of R & E activities initiated by the RAT process and also greatly facilitate future replication of the technology to areas where formal-survey data are the only information available.

Further work is needed on the general techniques and methodologies of rapid rural appraisals. Additional work needs to be undertaken on linking these appraisals with the design and planning process of activities. In fact this combination is the RAT.

More work is needed by social scientists on farmer participation in this RAT-type of process in rural development. This includes the development of more effective mechanisms for dialogue and communications between farmers and officials. Also, communication between field level staff and centrally-located superiors within the agencies concerned should be improved to ensure the delivery of activities which are more responsive to farmers needs and problems.

Finally, the problem of sustaining the interdisciplinary momentum generated during the needs-assessment component of the RAT needs to be tackled. With lack of care, activities planned on the basis of an integrated, interdisciplinary, inter-departmental needs assessment will be implemented in a disjointed, component fashion and as a consequence will fail to realize their potential for development of the rural community system for which they were targeted.

BIBLIOGRAPHY

- Alton, C.T., Pisone, U. and Prasertsri, C., 1986. The realities of conducting an RRA in a national agricultural program. Proceedings of the 3rd National Farming Systems Seminar, Chiang Mai University, April 2-4, Chiang Mai, Thailand.
- Chambers, R.C., 1980. Shortcut Methods in Information Gathering for Rural Development Projects. World Bank Agricultural Sector Symposium, January, 1980.
- Conway, G.R., 1986. Agroecosystem Analysis for Research and Development. Winrock International, Bangkok, Thailand.
- Conway, G.R., Husain, T., Alam, Z. and Alim, M., 1987. Rapid Rural Appraisal for Sustainable Development: Experiences from the Northern Areas of Pakistan. Paper presented at the International Institute for Environment and Development's Conference on Sustainable Development, 28 to 30th April, 1987. London.
- Craig, I.A. 1983. Rapid Assessment Technique: the process, lessons learned and recommendations for the future. NERAD Working Paper, University of Kentucky Quarterly Report No. 5 for July, August and September, 1983.
- Craig, I.A., Wattanabhuti, W. and Sukapong, C., 1986. A cropping systems technology development process: the NERAD experience. Proceedings of the 3rd National Farming Systems Seminar, Chiang Mai University, April 2-4, Chiang Mai, Thailand.
- Limpinuntana, V. and Patanothai, A., 1982. Handbook of the NERAD Tambons. Northeast Rainfed Agricultural development Project, Northeast Regional Office of Agriculture and Cooperatives, Tha Phra, Khon Kaen, Thailand.
- Phreukantrakorn, S. et al., 1987. Guidelines for Agricultural Development in Muang Suang District of Changwat Roi Et. Northeast Rainfed Agricultural Development (NERAD) Project, Northeast Regional Office of Agriculture and Cooperatives, Tha Phra, Khon Kaen, Thailand.
- Rhoades, R.E., 1985. The art of informal agricultural survey. International Potato Center (CIP), Apto, Lima, Peru.
- Vorasoot, N., Jintawet, A., Limpinuntana, V., Charoenwatana, T. and Virmani, S.M., 1985. Rainfall Analysis for Northeast Thailand. Faculty of Agriculture, Khon Kaen University.

APPENDIX 1.

SUGGESTED SCHEDULING OF MAJOR PHASES OF THE RAT PROCESS

WEEKS 1-4

- Planning Workshop to define specific objectives of the RAT.
- Contact individuals, institutions, etc. who will assist in the RAT training.
- Orientation of concerned agencies in the objectives, benefits and requirements of the RAT process.

WEEKS 5-8

- Collection and preparation of secondary data for the target area.
- Preparation of materials, schedules, invitations, etc. for the RAT training workshop.

WEEKS 9-10

- Conduct RAT training workshop at a convenient central location.
- Prepare for field implementation of the RAT.

WEEK 11

- RAT team village assessment (See appendix 3).

WEEKS 12-14

- RAT data analysis and planning of development activities.
- Preparation of action plan and approval by relevant agencies.

WEEK 15 ONWARDS

- Presentation of final plan to villagers for approval and modification.
- Selection of participating farmers and development sites.
- Implementation of development activities by RAT teams.
- Monitoring and evaluation of activities by RAT teams.

APPENDIX 2.

DESCRIPTION OF RELEVANT TOOLS AVAILABLE FOR USE BY RAPID ASSESSMENT TECHNIQUE PRACTITIONERS

1. SEMI-STRUCTURED INTERVIEWING TECHNIQUES:

Semi-structured interviewing is a technique whereby a small group of experienced practitioners informally talk to farmers in such a way as to be able to follow up on leads, revise questions and probe some areas in more depth than would be possible with a formal survey. The ability to submit the findings to rigorous statistical analysis is sacrificed in order to gain an in-depth, holistic understanding of the situation.

Semi-structured interviews can be divided into the five stages of Approach, Warm-up, Dialogue, Departure and Recording:

Approach: this should be made as un-intimidating as possible; avoid large interview teams, do not arrive in official looking cars, always use the local dialect of the area and if possible try to avoid taking notes during the interview. Timing is important; be sensitive of farmer work schedules and try not to disrupt farm activities, if interviews are conducted in the fields join in and help with the task at hand.

Warm-up: it is not advisable to go directly into the subject at hand but spend some time in casual conversation to gain the farmer's confidence. Spend time to explain the purpose of the interview but do not promise the farmer any help that cannot later be supplied.

Dialogue: during this phase the interviewer must try to establish a framework within which the appropriate information will be supplied by the farmer. At first sensitive questions should be avoided but rather try to guide the interviewee towards the central issues of concern. Let the farmer's responses wander a bit if he is talkative, as valuable insights will often be supplied in an un-threatening, roundabout fashion. Close attention should be paid to facial expressions as these can often reveal feelings that are difficult for the farmer to state directly. Interviews should not be extended for more than about 30 minutes and be wary of other villagers joining in to listen as this will often constrain the responses of the interviewee.

Departure: every attempt should be made to terminate the interview casually and do not depart abruptly even if all the relevant information has been obtained. Try to maintain links with the interviewee as follow-up questioning may become necessary at a later stage and any individual may turn out to be an appropriate cooperator for follow up activities at a later date. Ensure that any requests for information or assistance that can be fulfilled by team members are supplied as promised.

Recording information: as soon as possible after the interview memory prompting notes should be made and these can be used later in the day when full records are made of the information obtained. Continuous note-taking in the presence of farmers should be avoided if possible but final decisions on this will have to be made by the team depending on the topic in hand and the type of farmer being interviewed. Interacting with the farmer using a pencil and paper by drawing simple explanatory diagrams or field maps however can sometimes be helpful in an unthreatening manner and these can then be used later to extract the relevant information.

Further information on semi-structured interviewing can be obtained from Rhoades (1985) and Chambers (1980).

2. LABOR AND INCOME PROFILES:

These are simple line graphs or bar charts that plot labor use (or availability) or cash requirements over time (usually one crop year or more). They can be useful in identifying important labor or capital availability bottle-necks and relating these to farm activities and/or development opportunities.

3. CROP CALENDARS:

Crop calendars can be useful tools for eliciting and analysing information regarding crop production practices during RAT's (Craig, 1983). They can be of varying complexity but in their simplest form consist of a two-dimensional diagram with land area as the Y-axis and time (usually one crop year plus) as the X-axis as shown in the following Figure. They can be sketched with the farmers assistance either during or immediately after the interview and act as a means of ensuring that the basic minimum information regarding cropping activities has been obtained. They can also be useful in prompting questions as the relationships between arable-land, crops and time are immediately obvious from them.

Experience has shown that they are also extremely valuable tools for presenting and analysing the results of interviews in the plenary discussions with the entire team. They help to pinpoint: problem fields; opportunities for cropping intensification; crop production constraints caused by subsistence requirements and the benefits obtained by crop rotations over years. If combined with information on off-farm activities, they can also be valuable in identifying periods of under-employment and labor bottle-necks. Proposed new cropping pattern technologies can be superimposed onto them in order to see how these interact with the current farm system.

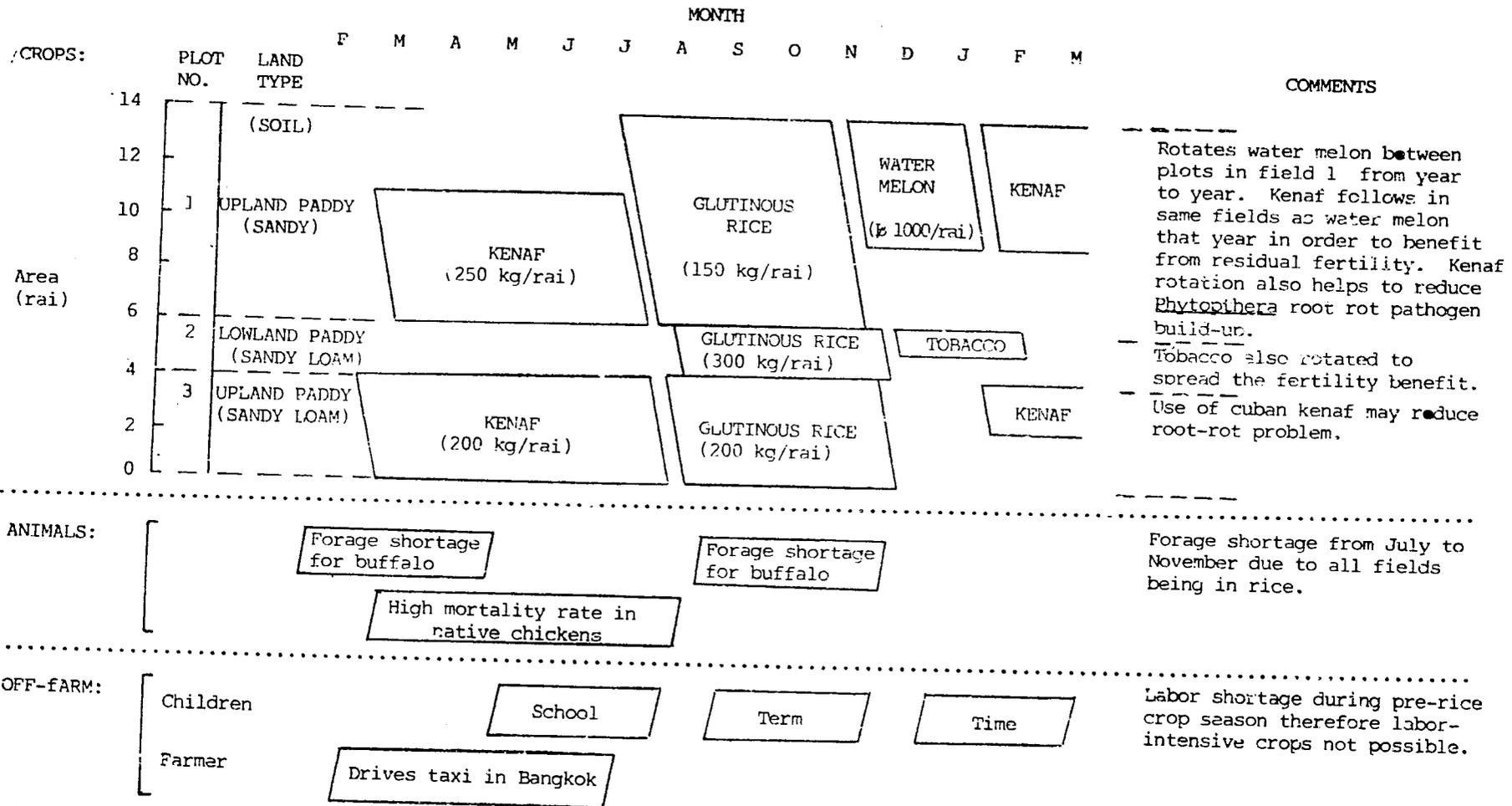


Figure Model cropping/farm calendar showing relationships among crop production, arable area, off-farm activities and time from an actual example (Source: Craig, 1983).

4. TARGET SITE MAPS:

Maps of the target site can be extremely useful for: conducting RAT's, organizing the information gained and relating it to topographical or other features, analyzing specific topography-related problems and planning and implementing development activities.

Maps do not need to be very accurate but should reflect the major agroecological and infrastructural characteristics of the target site. The maps should define village boundaries, streams, creeks, swamps and roads and tracks; they should show the major water resources in the area and give some indication as to land elevation, type and use. At plenary sessions individual sample farmer's fields should be added to the map and the source of all soil samples taken should be located on the map for future reference and comparison with natural features. At first maps will not be particularly detailed but as new information is gained, they should be continually updated and improved as the RAT progresses and as development activities are implemented.

Cross-sectional transects can be useful variations on the mapping theme especially for areas where discernable differences in elevation exist or where elevation is an important determinant of resource use patterns (See Conway, 1986).

After the needs assessment phase of the RAT, the maps can be a valuable source of information for choosing participating farmers and trial sites that are representative of the different agroecological zones identified within the target site. Similarly they can be used by extension workers or researchers for locating specific problem fields or research trials implemented as a result of the RAT. If facilities permit, production of maps showing different characteristics should be produced on transparencies and can then be over-layered during the analysis phase to explore the relationships between, for example, topographical features and production patterns.

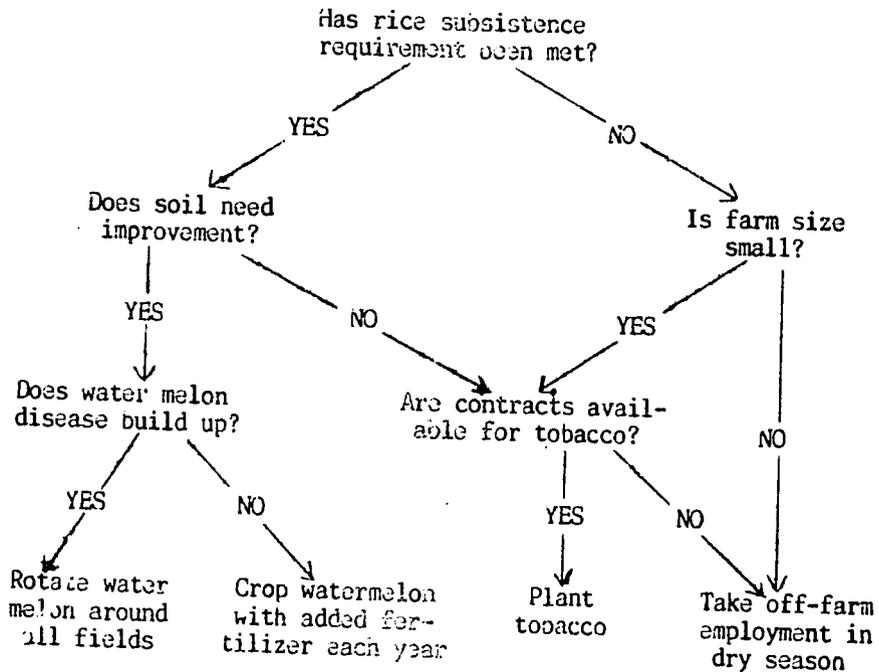
5. RAINFALL GRAPHS:

These are simple pictorial representations of rainfall distribution over the crop year. When related to other factors such as traditional or proposed cropping patterns they can help to explain the reasons behind the indigenous systems of production or help to identify likely problems with proposed development activities. In their simplest form, they can be graphs of total rainfall received by month, however, the probability of receiving a certain amount of rainfall (typically 100 and 200 mm.), each month although more difficult to compute, can often be of greater use to agronomists and crop development specialists. For further information on this subject, see Vorasoot et al., 1985.

6. DECISION TREES:

A decision tree is essentially a simple diagrammatic aid for understanding farmer decision-making. It depicts the options open to farmers according to their local conditions and farm resources and helps the researcher to define important constraints facing the farmers. Hypothetical decision trees can also be used to aid in interviewing by attempting to follow the farmers own decision making process by working through it with him. An example decision tree used to elicit information regarding constraints imposed by subsistence rice requirements is presented in the following Figure.

Figure showing decision tree for on and off farm strategies under rice subsistence constraints (source: Limpinuntana et al., 1982).



APPENDIX 3.

SAMPLE TIMETABLE FOR A TYPICAL FIELD RAT

- DAY 1 MORNING - Meet at conveniently located office facility in the locality that will be available for use throughout the RAT.
- Brief review of RAT objectives, schedule, responsibilities, etc. by team leader.
 - Selection/analysis of farmer sample and allocation of team members to sub-groups according to discipline and experience.
 - Travel to target village
- AFTERNOON - Village orientation and introduction of RAT team to villagers by local extension agent and village headman.
- Initial farmer interviews by RAT sub-groups.
 - Meeting in the evening of entire team to discuss interview results and modify approach accordingly.
- DAY 2 MORNING - Interviews by subgroups continue interspersed with soil sampling in farmers fields and mapping exercise continued by one subgroup.
- LUNCH - Presentation of subgroup findings and discussion of suggested changes in farmer sample.
- AFTERNOON - Extend farmer sample to ensure representative interview coverage.
- Village/Farmer interviews continued by sub-groups.
 - Plenary session of entire team to discuss findings and modify tentative hypotheses.
- DAY 3 MORNING - Village/Farmer interviews continued by sub-groups.
- AFTERNOON - Subgroup presentations and discussions on findings and development of a first definition of key problems and proposed ameliorative interventions.

- DAY 4 MORNING -- Presentation of major problems identified and proposed development activities to entire group of sample farmers for feedback.
- AFTERNOON - Revise definition of major problems based on farmer comments, refine development activities accordingly and draft action plan and implementation schedule for approval by relevant agencies.

APPENDIX 4

The following NERAD Working Papers are available on request from the Project Director:

NERAD Methodology Documentation Series

- M1. A cropping systems technology development process: the NERAD model. Craig, I.A. et al., 1985.
(Thai and English)
- M2. Triage: a methodology for screening agricultural technologies and prioritizing research and extension activities. Craig, I.A. and Sukpoag, S., 1987.
(Thai and English)
- M3. Northeast Regional Agricultural Development Information and coordination system (NERADICE). Pisone U. and Hopkins, J., 1987.
(English)
- M4. The Rapid Assessment Technique (RAT): a procedure for identifying farmer problems and development opportunities. Alton, C. and Craig, I.A., 1987.
(English)

NERAD Technology Documentation Series

- T0. Executive Summary of the NERAD promising technologies. Thamabood, S. (Editor), 1987.
(Thai)
- T1. Direct sown rice technology documentation. Craig, I. A. et al., 1986.
(Thai and English)
- T2. Modified shallow well technology documentation. Ragland, J.L. and Thamabood, S., 1986.
(English)
- T3. Demonstration farmer buying groups: a technology documentation. Meyer, L., 1986.
(English)

20