

PN-NEA-205  
1/1/85

RAINFED AGRICULTURE AND A FARMING SYSTEMS APPROACH  
TO RESEARCH: EMERGING LESSONS FROM  
USAID'S EXPERIENCE IN SOUTHEAST ASIA

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For presentation at the AID, Bureau of Asia Regional  
Conference for Agricultural and Rural Development  
Officers, IRRI, April 22-26, 1985

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I. INTRODUCTION

- Projects being implemented in the Philippines, Thailand and Indonesia are already producing results that could significantly change USAID approach to agricultural development in the rainfed areas of Southeast Asia.
- Given the relatively short history of these projects, most of these lessons are still tentative, and in many cases not yet fully articulated by participants in the projects. In some cases there is even disagreement among participants as to what are the issues.
- Presentation will not focus on describing the individual projects. Instead will draw heavily from the Farming Systems Development Project-Eastern Visayas, supplemented by the work that is just beginning in the Bicol region under the Rainfed Resources Development Project, and my limited knowledge of the Northeast Rainfed Agricultural Development Project in Thailand and USAID funded projects in Indonesia.
- The most important lessons relate to:
  1. improved understanding of the problems of rainfed agriculture and
  2. improved methodologies and approaches for better understanding and addressing these problems.

II. Improved understanding of the problems of rainfed agriculture in Asia

- Some of these problems are not unique to rainfed agriculture; but appear to be partially relevant to designing and implementing projects in the area.

1. Most of these systems are not stable, often characterized by declining productivity and increasing environmental degradation.

-- Rainfed areas where USAID projects are involved are generally recently settled (20-40-60 years). Often land that in the memory of present residents was virgin forests. Movement of people into these areas reflects population pressure and in some cases tenure problems on better lands.

-- Even in the few situations where swidden systems may be several hundred years old, population pressure is causing these systems to break down.

-- Declining productivity and increasing population are forcing people into even more marginal land, often with serious negative implications for the environment. Negative implications are not just for these limited areas, but for the more productive irrigated lowland and even coast zones and near shore marine resources.

-- There is a clear need for modification in the existing systems, including introduction of new technology, if these systems are to be made sustainable over time.

2 . In many cases, agricultural production is not sufficient to support the family. The farm unit, by itself is often not economically viable.

-- Off-farm income may account for an average of between 30 and 80% of family income.

-- Off-farm income may result in seasonal migration of family members or day labor.

-- Opportunity costs of labor may limit possible interventions that are labor intensive, especially that require labor when opportunities for off-farm labor are greatest.

-- Because of inherent risks associated with Rainfed Agriculture, for on-farm activities to compete for labor with off-farm salaries, returns to on-farm labor must be much greater than that of off-farm.

-- Because of migration, in many systems key decisions and labor are provided by women, young people and old people.

-- Off-farm labor complicates further already complex land tenure arrangements and decision-making systems.

3 . The role of the community and groups within the community are very important, since individuals may be constrained in the decisions they can make as individuals.

-- Strategies for water resource management, watershed protection, raising livestock, etc., may require cooperative action.

- Introduction of new crops, etc. may in some cases not be possible without group agreement that could ensure that labor, transportation, markets, etc. will be available when needed, etc.
- 4. There is tremendous variability within any given geographic region. Even neighboring farmers may face very different sets of constraints.
  - Variability in natural resources is particularly pronounced in upland hilly areas. On a single hill, systems can vary based on drainage, soil moisture, pH, rats and other predators, distance from road and whether on the north or south face.
  - Variability in systems reflect difference in:
    - land size
    - land tenure
    - access to irrigated land
    - family size, age of children
    - opportunity for off-farm employment
    - access to credit, etc.
    - etc.
  - Not only is there variability over space, but also variability over time as dominant cropping patterns are changed by farmers to respond to:
    - market forces, incentives
    - changes in climate, drought, floods, etc.
    - introduction of new technology
- III. Improved methodologies and approaches for better understanding and addressing these problems.
  - The challenge facing the AID-supported projects that have adopted a Farming Systems Approach is to get beyond the rhetoric.

- Existing projects are beginning to experiment with methodologies and to recognize problems with existing approaches.
1. Because of the complexity of the systems involved, the limitations of cropping pattern research, with its emphasis on achieving biological potential, is being recognized.
    - A major problem is that in Asia, much of the cropping patterns research is called Farming Systems Research.
    - There continues to be researchers who believe the goal is to identify new "Farming Systems" to replace farmer's existing system.
    - There appears to be a need to better define the role of cropping patterns research as part of a Farming Systems Approach to Research.
    - There are, increasing questions on the appropriate use of the concept of "Recommendation Domains."
  2. Projects are discovering that conceptual models of Farming Systems Research, with complicated diagram of arrows, solid lines and broken lines, have very little impact on the interventions that are being tried in farmers fields.
    - There is a need to continue working on explicit ways of getting conceptual models and site assessments factored into interventions, especially trials on farmers fields.
  3. Farming Systems Approaches to Research, with its focus on the identification of problems being faced by farmers is being recognized as critical for other parts of national

research programs. These links need to be made explicit and strengthened.

-- Farming Systems Approaches to Research have a major role in determining agenda for agricultural research on experiment station and at universities.

-- They have a major role in identifying areas for policy study and reform.

4. Problems with existing methods of site assessment and problem identification are being recognized.

-- There is increased attention to Rapid Rural Appraisal, not as an end in itself, but as a methodology for making decisions on interventions and on additional studies.

-- There is increased recognition on the need for multiple approaches to collecting information, the need for multi-disciplinary teams, the role of team interaction, and the multi-objectives that can be served by Rapid Rural Appraisal.

5. Much greater attention is being paid to the importance of the farmers, ways of increasing his or her participation in the research and ways of building on his or her knowledge.

-- Much greater recognition of indigenous knowledge and its relevance to identifying additional options for existing systems.

-- New definitions of what constitutes farmer participation are emerging. There is greater recognition that it is not enough to ask farmers to identify their problems and to make available their fields for trials.

6. There is much greater appreciation for the role of social scientists in understanding these problems.
  - Social scientists are seen as having a role in defining the parameters of the systems being studied.
  - Social scientists are seen as providing unique approaches for site assessment and problem identification.
  - Social scientists have a definite role in identification of others besides the male head of household who are critical for the system.
  
7. Projects are beginning to think through new approaches to technology dissemination.
  - Recognition of the limitations, because of variability in "Package of Technology" approaches.
  - Recognition of the need for approaches that presents farmers with options or alternatives that they can adapt to their existing systems, instead of with new systems that they are expected to adopt instead of their existing systems.
  - Recognition that because of the complexity of the micro-systems neither extension workers or higher level government officials can replace farmer as the best person to make decisions for his or her farm.
  - Recognition of the importance of farmers as intermediaries in both identifying the problems of others and in providing and verifying possible options for other farmers.

#### IV. Conclusion

Farming Systems Research in AID-funded projects in Southeast Asia also illustrates the problems with this approach:

1. Unrealistic expectations as to what can be accomplished in a short period of time.
2. Confusion between Rhetoric and Reality. Thinking that because an issue has been talked about, it has been addressed.
3. Inappropriate focus on methodologies as ends in themselves, as opposed to as tools for better decision-making.
4. Confusion as to what constitutes a Farming Systems Approach to Research.

#### V. Recommendation

-- USAID must develop ways of systematically considering those issues and of factoring them into our program. This can not be done completely by consultants and universities.

There is a need for a role by AID Officers. There are important implications of this issue for both existing projects and future projects.

-- Networking, especially setting up new networks, conferences, etc., are not a solution.

-- There remains a need for sharing emergin. knowledge between projects and countries and for getting the knowledge into the AID System.

Recommendation:

1. Use of project resources for informal visits between projects.
2. Use of project funds for regular participation at Kansas Farming Systems Conference.
3. Making Rainfed Agriculture and Farming Systems Research major topics at AID meeting such as ADO Conference.
4. Continued support for the Farming System Support Project as a means of disseminating information and bring people together.
5. Active involvement of USAID in helping articulate the substantive issues to be considered in project evaluations.
6. Use of project resources (instead of OE) to involve AID technical people (project officers) in other projects in other countries. This would include participation in the evaluations and also participation in training courses and conferences.