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SOME PROBLEMS IN THE  
IMPLEMENTATION OF AGRICULTURAL  
RESEARCH PROJECTS WITH A  
FARMING SYSTEMS PERSPECTIVE



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SOME PROBLEMS IN THE  
IMPLEMENTATION OF AGRICULTURAL  
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## 1. INTRODUCTION

- 1.1 Not all the possible problems discussed in this paper have been experienced by the author in setting up a FSAR (Farming Systems Approach to Research) type project in Botswana where the Government is very responsive and sympathetic to such projects and other similar projects that had earlier been implemented.
- 1.2 Because of limited agricultural research resources within national programmes, scepticism about the value of FSAR-type projects, etc., such projects currently receive substantial external funding. This complicates the problems of implementing such projects and therefore this dimension is considered in this paper.
- 1.3 For the purposes of the paper the problems are divided into three groups corresponding to stages in the implementation of the project, namely:
  - (a) Pre-project implementation stage
  - (b) Initial project implementation
  - (c) Continued project implementation

Obviously the severity and character of the problems at each stage will be determined in part by what happened earlier, while the way in which they are treated when they arise -- ignored or resolved -- will partially determine their magnitude and character at a later stage in the implementation cycle.

## 2. PRE-PROJECT IMPLEMENTATION STAGE

- 2.1 At this stage the crucial issue is for the various agencies/individuals to have a clear idea of:
  - (a) What FSAR is.
  - (b) What is expected of them during the implementation stage.

Problems arise during implementation if the above conditions are not fulfilled.
- 2.2 There are currently usually three different groups of agencies/individuals that are vitally concerned in FSAR-type project implementation. These are:
  - (a) Agencies within the national programmes involved in agricultural research, extension and agricultural planning/development.
  - (b) The donor/contracting agency responsible for providing the external funding/personnel.
  - (c) The team members, both national and expatriates, in the FSAR project itself.
- 2.3 The design stage for a project provides a good opportunity for ensuring that full understanding on both the conceptualisation of FSAR and the expected commitment by national and donor agencies is achieved. The recent introduction by USAID of the "collaborative

mode" in which the external contracting agency is, together with the national agencies, responsible for both the design and implementation of the project, potentially provides a good way of ensuring this understanding and should improve the probability that suitable expatriate personnel will be recruited to help in project implementation.

#### 2.4 National agencies.

2.4.1 The nature of FSAR means that to be fully effective it must have operational links with more than one agency at the national level. The argument for this is derived from the nature of FSAR which can be summarised as follows:

- (a) The primary aim of the FSAR is to increase the overall productivity of the farming system and, therefore, hopefully the welfare of individual farming families in the context of the entire range of private and societal goals given the constraints and potentials imposed by the determinants of the existing farming systems.
- (b) Increased productivity is achieved through two types of developmental strategies:
  - (i) Farming systems research (FSR) - involving the development and dissemination of relevant improved practices (technologies).
  - (ii) Farming systems perspective (FSP) involving influencing the development of relevant policies and support systems (external institutions).

Both developmental strategies have a "micro-macro" or "bottom-up" orientation compared with the more "top-down" or "macro to micro" orientation of research work that starts at the experiment station or in the upper echelons of planning ministries.

- (c) Given the right institutional setting and linkages, both FSR and FSP are possible. However, in general, because FSR programs have usually been located in agricultural research institutes - primarily crop oriented often with poor linkages to planning or policy-making agencies -- the FSP has usually not been operative. Thus, the support systems have been considered parameters (implying a submissive approach to them on the part of the FSR team) rather than variables amenable to manipulation (implying an interventionist approach on the part of the FSR team). An interventionist approach permits a wider range of possible improved technologies to be considered in the research process.

2.4.2 In planning the implementation of an FSAR-type project within a national programme problems will arise if the work of such a project is not perceived as being complementary to the work of planning/development, extension, and research agencies. If

FSAR work is mistakenly perceived as a substitute<sup>2</sup> for the work of any of these agencies then obviously they will be interested in maintaining the status quo and will vigorously oppose implementation of such a project. Even if FSAR is correctly seen as conceptually complementary to the work of such agencies, problems can still arise during times of constrained financial/manpower resources when FSAR will obviously be perceived as competitive in terms of resource allocation.

- 2.4.3 To improve the probability of operational linkages between FSAR-type projects and the various agencies it is important to plan for some logistical support from each agency although this complicates problems of coordination, management and control on the part of the FSAR-project team leader. For example in our project in Botswana local staff are being provided by the planning, research and extension agencies, office accommodation comes from the extension and research agencies, while most of the remaining local logistical support is provided through the research agency. An advisory group consisting of representatives of each of the agencies, plus the FSAR project team leader<sup>3</sup> can help in resolving problems that arise in linking with more than one agency.

## 2.5 Donor and contracting agencies

- 2.5.1 The perception and understanding of FSAR on the part of the donor agency and even more critically important, the contracting agency, is, together with their commitment, an important determinant of their effectiveness in recruiting suitable team members, providing sound back-stopping and support activities and providing timely and constructive evaluative functions.
- 2.5.2 Unfortunately it cannot always be safely assumed that contracting agencies fully comprehend how to implement FSAR projects in developing countries, while various disincentives often exist within the contracting agencies which discourage individuals in mid-career from taking long term assignments -- particularly for more than two years -- in developing countries.

## 2.6 Team Members

- 2.6.1 Obviously planning the implementation of a successful FSAR-type project involves recruiting suitable team members -- both national and expatriate. This is not easy because of some rather unique features of FSAR-type activities involving work on farmers' farms, a farming system focus rather than focusing on one commodity, the necessity of inter-disciplinary cooperation, and having an appreciation of the role of other disciplines. Unfortunately until very recently effectiveness in such work has been primarily based on longevity in the field (i.e., relevant experience) rather than through formal training programmes.

2.6.2 Substantial field work often under difficult circumstances, combined with considerable amounts of traveling and sometimes living in isolated areas, not only can preclude the identification and participation of suitable local staff but also, together with the nature of FSAR type work, often make it difficult to recruit suitable expatriate staff.

### 3. INITIAL PROJECT IMPLEMENTATION

3.1 At this stage the crucial issue is to initiate implementation of a project in such a way as to be compatible with the interests, commitments and obligations of the involved national agencies, the donor and contracting agencies and the FSAR team itself. Considerable misunderstanding and antagonism can arise and be perpetuated if mistakes are made at this stage. The discussion here can be divided into three parts as follows:

- (a) Setting up suitable administrative procedures and support systems necessary for the implementation of the project.
- (b) Ensuring relevant coordinating linkages within the national programmes.
- (c) Initiating a relevant and effective work programme by the FSAR team.

#### 3.2 Administrative Procedures and Support Systems

3.2.1 Initially project implementation involving setting up suitable administrative procedures can be very time consuming especially if the team leader has no prior experience in the country and the donor agency plus the contracting organization are involved. Communication systems, staff recruitment methods, satisfactory budgetary expenditure and bookkeeping systems, inventory acquisition and stock-taking systems, and reporting systems all have to be established that will satisfy the differing needs of the national agencies, donor agency and contracting agency. Numerous problems can arise at this stage although potential misunderstandings should be reduced through the use of the collaborative mode for awarding contracts referred to earlier (see section 2.3). Other factors that can be very important in reducing and/or resolving problems are:

- (a) Within the national setting a crucial factor is the nature of the relationships the team leader develops with the leadership of the different national agencies and the quality of the staff helping in the day-to-day administration of the project. A high-quality, locally-hired, administrative assistant can play a vital role at this stage.
- (b) The nature of the relationship the team leader establishes with the donor agency, and particularly with the representatives of the donor agency in the country, is of critical importance. In this respect in USAID the project manager (usually the Agricultural Development

Officer) can play a particularly significant facilitating role in the implementation of FSAR projects partially funded by USAID. In addition to such constructive relationships it is extremely useful if the team leader is familiar with the administrative and operational procedures of the donor agency which, for example, can be gleaned through prior work experience with the organisation.

(c) Establishing constructive relationships with the personnel involved in providing back-stopping activities of the contracting agency is obviously also of critical importance. Familiarity with the contracting agency of personnel involved is obviously highly desirable especially as it is easy for relationships to become strained through the inevitable difficulties and delays in communications over long distances.

3.2.2 Combined with administrative problems involved in setting up relevant administrative procedures is the provision of the requisite logistical support for the implementation of the project. Changes in circumstances since the project design stage plus oversights or faults in the original design can give rise to problems in provision of adequate logistical support such as housing, office accommodation, vehicles, equipment, staff, counterparts, etc. Some problems have resulted in our Botswana project because of the recession which coincided with starting the implementation of the project. Consequently there have been some problems in provision of the logistical support systems on the part of the government although by now these have been mostly resolved. One fallback strategy we have found particularly useful in our project is a small contingency fund for research and operation expenses which is funded from USAID sources and is channelled through the normal Government of Botswana channels using governmental procedures for expenditures. We have had considerable flexibility in the use of these emergency funds enabling us to buy small amounts of equipment, paying casual labor, etc. There is no doubt this fund has been extremely useful in terms of us being able to overcome short term crises. One of the problems expatriate team leaders have, who are funded by donor agencies, is the issue of how aggressive they should be in getting national agencies to fulfill their logistical support commitments. Overly aggressive strategies at this point can alienate and sour relationships which can have negative impacts on the functioning of the project. On the other hand too submissive an approach at this time can cause problems for the donor agency which has entered into a contract of agreement with the government over the provision of certain levels of logistical support. Thus team leaders are caught in the middle between the two parties and in the interest of the project often have to pursue a delicate balancing act!

### 3.3. Ensuring Relevant Linkages Within National Programs

3.3.1 The "bottom-up" or farmer-up orientation of the FSAR and its nature which involves inter-agency linkages demands special attention in the initial implementation stage. Regrettably perhaps most governmental organisations have within-agency operational procedures and lines of communication and authority which are vertical in nature and move down towards the farmer. Thus implementation of an FSAR project requires a cautious approach on the part of the FSAR team to establish operational links between agencies. Since FSAR teams are usually, but not always, officically located in technical research organisations, links need to be established between the FSAR team and planning agency (to enable the possibility of FSP) and between the FSAR team and the extension agency (to facilitate FSR). Meetings with individuals in these organisations, although time consuming, can be very important in establishing linkages even if they are informal initially.

3.3.2 For example in the case of extension personnel, who understandably can view the on-farm work of FSAR team members as an invasion of their territory, we have tried in our project to avoid the development of major misunderstandings in the following ways:

- (a) In the design stage it was agreed that DAFS (The Department of Agriculture Field Services which is the extension agency in Botswana) would second (sic) one extension worker for each project village to work with the FSAR teams while FSAR field teams would be officed at their district headquarters. This has been implemented.
- (b) A position called the Research Extension Liaison Officer has been established in DAFS which will help to bridge the gap between research and extension. This position is funded from our project funds.
- (c) The guidance and advice of the DAO's in the districts in which project villages are located have been constantly sought. At the same time they have been informed of what is being done by the FSAR team members.
- (d) Meetings have been held with all of the AD's in the districts where project villages have been selected to explain the aims of the project, to assure them we are not trying to take over their jobs or give them more work, and to answer questions that they may have.
- (e) In the project villages special attention has been paid to consulting and developing constructive relationships with the ADs stationed here. A particularly sensitive issue is to impress on them that we want their advice while at the same time we want freedom to choose which farmers to work with. We have been very careful not to carry out functions of the ADs stationed there but have referred farmer enquiries such as how to get loans, equipment, etc. to the resident AD in the village.

- (f) In June this year (1983) we are planning, in coordination with the other three FSAR projects in Botswana, to hold a workshop which will be attended by senior extension personnel from the areas where the FSAR-type projects are located. The objective of the workshop will be to acquaint them with what FSAR is and what the different projects are trying to do.

Only time will tell whether the above efforts will be successful in developing strong and effective links between the project and extension personnel.

- 3.3.3 The further linkage that is important to develop is within the research organisation itself. This involves development of a two way linkage between the field oriented FSAR researches and those working on the experiment station. Since the objectives of the two groups of researchers are complementary to each other, each group needs to be responsive to the needs of the other. Initial work is likely to emphasise testing and fine tuning at the farm level of technologies developed on the experiment station. However later on in the project there is likely to be increasing emphasis on feeding back requests to the research station based scientists to further modify the farm tested technologies and to perhaps modify the research priorities of experiment station researchers, based on needs ascertained at the farm level. This can be a particularly sensitive issue and becomes increasingly significant in the continued implementation of FSAR projects.

#### 3.4. Getting The FSAR Teams Started

- 3.4.1. Two major problems which often exist in the initial stages of FSAR projects are as follows:

- (a) Strains resulting from bringing together in field teams, national and expatriate individuals who are unknown to each other, and who at the same time are in the process of adjusting to living in unfamiliar environments often away from major centres of population.
- (b) The difficulties of ensuring that such a multi-disciplinary group of individuals can work properly as an inter-disciplinary team -- something which such individuals often have never done before.

- 3.4.2 Obviously in addition to trying to select individual team members whose personalities are potentially compatible and who have had relevant prior experience (not always easy to ensure) time is needed to get to know each other, to develop relationships and to develop a meaningful inter-disciplinary work plan. Unfortunately, at the start of many projects, time is a commodity that is lacking. For example in our project, delays in the signing of the contract and in the arrival of some expatriate team members, combined with an early start to the rains (which unfortunately later ceased leading to a severe drought) made the initial implementation stage

particularly difficult. Relationships were still being developed among team members<sup>6</sup> discussions were still being held on the proposed work plan, and the necessary logistical support systems were not in place. This led to numerous problems which have taken time to resolve. Two strategies however that helped prevent further exacerbation of the problem were:

- (a) The number of the villages worked in during this first year has been reduced.
- (b) In the design stage only one field team was planned during this first year with the second one being programmed for starting in the second year of the project.

#### 4. CONTINUED IMPLEMENTATION

4.1 Obviously the critical issues to be addressed during the continued implementation of FSAR-type projects are to produce useful results and hopefully to institutionalise the FSAR process within the national setting.

4.2 Useful results are of course important in order to establish credibility with farmers, national agencies and the donor agency. Factors important in obtaining useful results are:

- (a) The availability of improved technologies that, with only minor fine tuning, can be readily adopted by farmers. Such availability is derived largely from experiment station based research. The lack of these improved technologies will mean delays in improvement of the welfare of farmers, while research priorities fed back to experiment station based researchers will hopefully eventually result in the development of relevant improved technologies. However, critically important in determining the payoff from this role of FSAR is the strength and responsiveness of the experiment station based research organisation. In any case credibility of FSAR-type teams under such circumstances is likely to suffer especially in the eyes of national organisations and donor agencies, who are often compelled by their constituencies, to view useful results as increases in the productivity and hopefully welfare of farmers in a short period -- for example less than five years. Unfortunately, in Botswana, because of the difficult climate as far as crop production is concerned combined with relatively limited availability of improved technologies, our project is likely to have difficulty in establishing credibility in this manner<sup>7</sup>.
- (b) A major problem of many FSAR projects in terms of producing useful results is that of ensuring resource efficient (both in time and quantity) methods of collecting the necessary data and the timely processing of that data in order to provide an input into the next stage of the research process. Methodologies for FSAR type work are still evolving thus providing potential for substantial disagreements within FSAR teams while the

collection-processing link is often poorly developed. We have purchased an Apple III micro-computer plus a number of software packages in order to try to overcome this problem. At the same time we are trying to organise our survey and trial instruments in such a way that we can quickly process the results. Whether we will succeed in this remains to be seen!

(c) Useful results or the lack thereof can of course also be influenced by unexpected events such as drought, illness of key team members, etc. The drought Botswana has been experiencing this year has been a useful learning experience for us but has certainly inhibited us from obtaining much in the way of useful results from this year's work.

4.3 The likelihood of institutionalising the FSAR approach within national programmes is obviously heavily dependent upon the credibility it has achieved. In addition, however, two other factors are important:

(a) There have to be trained and motivated nationals to continue the work by themselves on the departure of the expatriates. Training, both informal (on-the-job) and formal in nature, must be a major component of FSAR projects. Identifying and training suitable individuals is a difficult process where many organisations are competing for a limited number of individuals. The issue of motivation to do FSAR-type work is likely to become an increasingly important one in institutionalising such work within national programmes. As indicated earlier, the personal inconveniences of such work plus the fact that it is not particularly glamorous in nature, may mean incentives will need to be considered to encourage nationals to participate in such work on a long term basis. This poses difficult problems for decision makers in national programmes.

(b) Many of the resources for FSAR type work in East and Southern Africa are currently coming from donor agencies. In view of the limited resources of the countries in the region there is an obligation on the part of current FSAR type projects to produce useful results with as few research resources as possible, in order to reduce the burden of institutionalising such projects within national programmes. In allocating research resources the criterion of the current FSAR type projects should be not what it is desirable to know, but rather what is the minimal level of resources that need to be expended in order to obtain useful results.

4.4 A crucial part of the institutionalisation process, early in the implementation process, is to make a conscious effort not to perpetuate a self-contained project, but to integrate and cooperate with other groups/organisations/projects within the national setting. This may come at a short-run cost but in the long-run can greatly facilitate institutionalisation. For example in Botswana efforts are currently being made to have some degree of coordination between the FSAR-type projects through inter-project meetings, to permit individuals from the various projects to participate in committees, in-service training courses for extension staff, etc. Also the

micro-computer we have purchased out of our project funds is to be used not only to process data from our project but also to help in processing data from the other FSAR projects and from experiment station based research.

## 5. CONCLUSION

Much of what has been discussed in this paper is obvious. However writing it on paper and implementing it in practise are two different worlds!

### FOOTNOTES

1. Complementarity in this sense would mean helping to increase the effectiveness of these agencies.
2. Unfortunately there does sometimes appear to have been a tendency for some donor agencies to consider on-farm FSR work to be a substitute for experiment station based research work.
3. In addition a representative from the donor agency is also important.
4. USAID funded projects often used to have a full time expatriate administrative assistant on teams in the field. However in recent years this arrangement has become less common. Obviously all other things being equal it is much better to have a locally hired administrative assistant who can play this role.
5. In our discussions with the ADs we have emphasised that we are testing improved technologies rather than demonstrating improved technologies. The latter is of course more the responsibility of the ADs although the distinction between test and demonstration can become rather difficult at times.
6. A particularly sensitive work relationship that needs careful nurturing is the critical one between national staff members who know a great deal about the local environment but often still have to acquire the technical and analytical skills, and the expatriates who have the skills but little or no experience of the local environment. Both groups need each other but unfortunately when time is very limited the quality of such relationships suffer and problems can develop.
7. The fact that the range of relevant improved technologies is currently limited in Botswana is due in part to the uncertain and harsh environment that prevails for crop production in the country.