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Good Review

REPORT OF A STUDY TO FOCUS THE F/FRED MPTS NETWORKS

October 1985 - January 1986

*Multi-Purpose
Tree Species = MPTS*

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10 January 1986

*Review
to Glossary
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1. Introduction

1.3 Methodology

The methodology in this study consisted largely in interviewing government officials, scientists, and (to a more limited extent) farmers in the countries visited. The data obtained in these interviews are utilized in two different ways in this report. First, much of it is considered to represent accurate, empirical assessments of institutions, people, tree species (etc.) of relevance to the F/FRED project, and it is included as such in this report. However, it is also recognized that some of these data represent less empirical and more subjective assessments. This latter sort of data is included in the report not because of what it tells us about the F/FRED project, but because of what it tells us about what people think of the F/FRED project. Such thoughts and perceptions merit our attention because, regardless of how valid or invalid they are, they will affect the way that people relate to the project, and hence they will affect the performance of the project itself. By presenting and discussing these perceptions here, it is hoped that the project can respond to them and thereby minimize the number of difficulties encountered during its start-up phase.

2. Review of Relevant USAID Projects

2.6 Mission Interests and Concerns

Most of the missions visited expressed a feeling that there had been insufficient communication from Washington regarding F/FRED. For example, one said that they were never really told what a 'network' is, and another said that they were never told in detail what 'buying in' to the project would mean. In addition, some of the missions said that too little of their own input was incorporated into the project. Suggestions that were supposedly made but not incorporated included, for example, focussing the networks not on MPTS but on research methodology, and allocating more of the budget to research. (Regarding the last

Mission objections

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point, the comment was made that it will be difficult for host country research bodies to participate in a research network if they do not have any money for this research.) On the other hand, some of the missions recognized that efforts had been made to incorporate some of their ideas into the project. In this regard, the Thailand mission spoke favorably of the addition of the personal service contract in Bangkok and the perceived decision to focus on extant research networks as opposed to creating totally new ones.

There is considerable variation among the missions insofar as current plans to participate in F/FRED are concerned. The Thailand mission sees some possibilities for F/FRED to support their policy-oriented approach to forestry problems, but in general they have limited interest in the project. They explain this by saying that there is no fuelwood shortage in Thailand, this is not a priority area for the Thailand government itself, and the mission does not have many resources to throw into this field. In addition, there seemed to be some sentiment in the mission that industrial forestry was the more desirable choice for Thailand's future development. Both the Phillipine and Bangladesh missions were more optimistic as to the possibilities for F/FRED supporting various mission projects. However, the feeling at the former mission still seemed to be that this support would not be important enough to justify 'buying into' the project; while at the latter mission there was a very definite feeling that the mission would neither 'buy in' nor participate in the project in any other way unless one particular demand of their's was met, namely for one visit per quarter (of 2-3 weeks duration) from the F/FRED staff in Bangkok. They want this support because of the lack of forestry expertise on their own staff. They made clear that this support could not be provided by short-term consultants whom, they said, they would have to 'lead around by the hand', provide with a lot of backstopping, and who could not come to know the needs of either their mission or Bangladesh in a single visit. They said that it might be acceptable, however, if the same short-term consultant came to them four times a year, for each year during the duration of

See p. 10, The Woodlot Rpt

Buy-in condition



the project. This mission in Bangladesh, along with some others, also expressed the worry that after they have been persuaded to buy into F/FRED, Washington will then turn around and cut back on the centrally provided resources, forcing the missions to then dip into their own, otherwise committed resources.

One of the most positive reactions to F/FRED came from embassy staff in Malaysia. They perceive this as the sort of S&T project that they can work on with the government of Malaysia. In the words of embassy personnel, this project is attractive because it represents a sort of joint, shared endeavor between USAID and the host country, as opposed to 'the usual one-way flow type of project'. The role that they envisioned for the Malaysians (and is envisioned by Dr. Saleh himself at the FRI) is as regional experts, who could be brought into the project, at least in part, as short-term consultants. In the words of embassy personnel, again, 'the hiring of Malaysians as consultants on the F/FRED project would be highly gratifying to the ambassador'.

3. Extant MPTS Networks.

3.3 Determinants of Success or Failure.

Some of the key factors in making a research network succeed were summed up by Dr. Saleh at the FRI in Kepong, in discussing some of the lessons of the IDRC rattan research network. He noted that a successful network must:

- Criteria for Success of a Network*
- (1) come from the bottom;
 - (2) have funds available for the use of its participants;
 - (3) involve the actual researchers in travel and meetings, as opposed to bureaucrats; and
 - (4) have not only regular meetings but also a newsletter to keep its participants involved.
- Most of these points were echoed by other people that we interviewed as well. Thus, the necessity for network coordinators to not dictate activities to the network participants, but rather to allow each participant freedom to follow his or her own interests (with only the very broad framework set by the coordinators) was mentioned by Dr. Carangal at IRRI with

regards to his Leucaena network; it was mentioned by Dr. Gujral at FAO regarding their fuelwood network; and it was mentioned by people in Thailand's Royal Forest Department with regards to their participation in an ACEAR research network. Speaking more generally of the 'loose' versus tightly organized character of research networks, some of the staff members at the UPLB College of Forestry noted that the loose organization of the SUAN network is one of its limitations but is also one of the keys to its success.

With regards to Dr. Saleh's second point, Dr. Carangal at IRRI emphasized that in order to (initially establish) his network he had to provide his participants with (minimally) seed money, and then help them to find more substantial funds on their own. The lack of such support was noted as a weakness in, for example, the UPLB's collaborative research program with a Japanese group.

With regards to Dr. Saleh's third point, virtually everyone interviewed on this topic ⁿstrongly emphasized the need to include the actual researchers in meetings and travel, and to exclude the bureaucrats who may be more senior but who have no practical involvement in the networking activities. The ASEAN-U.S. Watershed Project based in Los Banos seems to have developed a successful solution to this problem by setting up four categories of people, and then specifying which categories can and cannot be invited to particular international meetings. In addition, they give ultimate veto power over who will attend their meetings to their Los Banos-based steering committee. Another way to ensure that the right people attend international meetings and the ~~wr~~ong people do not, as noted by the mission in Manila, is for the network to focus on people (as participants) and not institutions. This focus on people was also cited in a more general context by many of the people that we interviewed, as one of the keys to a successful network. An example of a people-centered research network, given by the mission in Manila among other sources, is again SUAN. Another key to SUAN's success, as mentioned by Dr. Sajise at PESAM, is the inclusion in the network of people



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institutions that are already collaborating.

4. Potential F/FRED Network Institutions

4.8 Social Research Capabilities

Both the amount of social research being done by forestry institutes in the region, as well as the capability to carry out this type of research, are quite limited at present. This is evident from the following country-by-country review.

4.8.1 The Philippines

The UPLB College of Forestry has a department of social forestry, which offers a Master's degree. As an example of the sort of research that they are carrying out that is of relevance to F/FRED, they currently have an 'Indigenous Agroforestry Project', which is looking at traditional village uses of native MPTS's. They are carrying this project out in collaboration with PESAM, one of the other institutions in the area with significant capabilities in social research. FURI has one Ph.D. and several M.A.'s in rural sociology on its staff, and it lists as one of its research goals the study of the 'social-cultural impact' (of forestry policy). However, none of the twelve components in their actual research program, at the time of our interviews with them, related directly to the relationship between human communities and the forest or the impact on this relationship of government forestry policy. Rather, all of the components relate to what the FURI staff themselves acknowledge to be their principal interest, namely forest production as opposed to forest utilization.

4.8.2 Malaysia

The current research priorities of the FRI in Kepong, according to its director Dr. Saleh, are tree improvement and stock production. Social research appears to be neither an interest nor a strength. An example of this is given in their IDRC-funded rattan network, which endeavors (at least within Malay-

sia) to provide useful information to the 'rattan industrialists', and does not even presume to address the needs of (e.g.) the tribesmen and peasants who plant and harvest rattan on a traditional, part-time basis. In Kota Kinabalu there are a number of organizations involved in forestry research - referring primarily to the Sabah Foundation, Sabah Forest Industries, and the Sabah Forest Development authority - but none of them have as yet any marked strength in social research. This is evident from a joint proposal that these three organizations prepared for the World Bank in 1984, entitled 'Forest Plantation Development in Sabah: A preliminary Financial Analysis and Proposal for Implementation', in which the planting of oil palms on government timber plantations, to reduce the initial establishment costs, is called an 'integrated agro-forestry approach' (p. iv). Further on in the same proposal, they claim that the increased employment in the forestry sector and the savings of foreign exchange that will be achieved by the project represent its 'beneficial socio-economic effects' (p. 20). The Forest Research Center in Sandakan is no different in this regard. They have no agroforesters (e.g.) on their staff, nor do any of their research divisions include any socio-economic topics. (They have one division called 'Indigenous Silviculture', but it does not involve any study of the cultivation of trees by the native people, as might be inferred from the name.) As one staff member stated, they do not study man-forest relations, but instead restrict themselves to 'applied research' - which they define as including tree production, provenance trials, and silviculture. However, the head of research here, one Mr. Rahim, spoke very sincerely and convincingly of their desire to move beyond their traditional silvicultural research into agroforestry and related fields.

4.8.3 Thailand

Kasetsart University appears to have some capability to research the social aspects of forestry issues. The School of Forestry has two undergraduate and one graduate courses in agroforestry. In all of their cartographic projects

They pay explicit attention to social factors, using either their own forest
ists or outside sociologists (hired on a contract basis) to do so. As ev-
of this apparent expertise, the government has recently asked them to
an international, four-week course on 'community forestry'.
On the other hand, some of their staff members have made statements such as
there is no use working with small farmers [as opposed to large and wealthy
farmers] because they cannot develop anything, or 'It is too early for research
the use of MPTS by small farmers'; which suggest that they are still in the
early stages of developing a capacity to do social research.

There is little such capacity at the Royal Forest Department, whose two
main research groups are 'silviculture' and 'forest products'. There are some so-
cial scientists in the RFD, but their work is limited to such topics as supply/
demand for various wood products. Their strengths and priorities are reflected
in the fact that they are involved in a project entitled 'Australian Hardwoods
for Fuelwood and Agroforestry in Thailand', but their work to date has
been limited to species and provenance trials, leaving aside the agroforestry.

4.8.4 Bangladesh

The Forest Research Institute in Chittagong appears to have done little
research on social aspects of forestry in the past, but there seems to be consid-
erable enthusiasm for studying such topics in the future. They expressed great
interest to us in studying the use of MPTS for small farmers - including in de-
graded slash-and-burn agriculture areas. They stated that they want to carry
out base-line studies of farmer attitudes towards trees, species preferences,
traditional uses, and so on. They have reportedly started to do a little of this
sort of study already with specific regard to the jackfruit. USAID's upcoming
'Rural Homestead' project is supposed to set up an agroforestry cell here and
should therefore significantly strengthen their future ability to carry out this
type of research.

5. Network Participation

5.1 Social Aspects

5.1.1 Cultural Factors

There is an assumption in the background papers for the F/FRIED project that the values of research networking are universal rather than culture-bound. Thus, in Lundgren and Brister's background paper, entitled 'Multiple Purpose Tree Species Research in Asia: Priorities and Potential for Networking', they write that 'The words "network" and "networking" are current terminology for what has always been the rule, not the exception, in science (1984: 217). In fact, this is the case in the western world. It assumes that science in other parts of the world - such as Asia - is the same as science in the west, yet there is no a-priori reason why this should be true. Similarly does Rose, in his background paper entitled 'A Report to USAID/S&T/FNR to Support Development of a Project Paper ...', write that the motivation for research networking is the exchange and flow of information (1983:35). The purpose or value of this exchange and flow is, he says, in part to reduce redundancy in research and establish standards for the broader research community (Rose 1983:35; USAID Attachment E 1985:8). Again, there is no reason to assume that these motives and values prevail in the Asian scientific community, and there is some reason to think that they may not. As regards the flow of information, for example, the staff at FORI in Los Banos expressed sharp anxiety that any valuable research data of theirs that are entered into this flow might simply be appropriated by other members of the network. As regards redundancy or duplication in research, Davidson - working at the FRI in Chittagong - noted the prevalent belief that the results of research done in other countries are not acceptable until that research had been repeated inside Bangladesh - by Bangladesh scientists working with Bangladesh plants -

Good reason for fear - this would happen in LAC

thereby 'validating' the foreign research results. Thus, the assumption that the constraints of forest research in Asia will be the same as those in the U.S. (e.g., Lundgren & Brister 1984: 11, 197), is not necessarily correct, and a statement such as the one by Burch (in his background paper 'An Interpretation of Discussion at a Workshop on the Human Factors...'), that if the data base management system does not work 'it will not be the fault of the technology' (1984:62), becomes overly ingenuous. The challenge in establishing the F/FRED network is to overcome not technological obstacles but rather cultural ones (among others). The implication that it is the business of F/FRED only to provide the technology, and that it is up to the network participants to utilize it or not, represents a far too narrow view of the project and of the kind of efforts that will have to be made to make it succeed. This matter did not go entirely unnoticed in the various project papers. Thus McFadden (in his background paper entitled

Yes!

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'A Report to USAID/S&TFNR to Support Development of a Project ...') noted the poor rewards and incentives for researchers in Asia (1984:viii). Similarly Parker (in her background paper entitled 'AID's Approach to Common Theme Research and Networking'), wrote that 'The implications of incentive structures within the scientific research community must be understood' (1984:10).

In addition to the broad cultural factors that affect scientific research and networking in general, there are several narrower cultural issues that emerged from our interviews that will also be of relevance to F/FRED. One is financial in nature. Staff members at the UPLB College of Forestry expounded at length upon the fact that when they have traveled in the past with Japanese counterparts, they have received from the government a per diem far lower than that given to the Japanese researchers by their government. As a result, they were not able to stay or sometimes even eat in the same hotels and restaurants as their Japanese counterparts. This, the Thais said, was 'insulting' - and it clearly should be avoided in F/FRED.

*Financial
Differential*

Another cultural issue involving status is the fact that all of the potential network participants are not of the same caliber - or at least they are not perceived as such by the participants themselves. Thus, Dr. Pollisco at PCARRD in Los Banos suggested to us that all of the institutions in the network should be of the same caliber; and he specifically noted in this regard that the Indonesian institutions are not the equals of their counterparts in the Philippines, although he thought that they might be in five years' time. Dr. Sajise at PESAM also noted the problem of differences in caliber among the institutions that will be involved in F/FRED, but he suggested a solution as well: he suggested that these differences can be overcome by having more than one 'level' of networking, so that while institutions of very different caliber might not be able to collaborate at one very intensive level of research, there would also be less intensive or demanding levels of activity in the network where they would be able to collaborate.

A final cultural issue was raised by Bisson in the Phillipine mission: he noted that some of the best Phillipine scholars - meaning the most industrious, the most creative, and so on - work out of the mainstream of research in the Philippines, whether by choice or necessity. This phenomenon should be investigated in the course of the F/FRED project, because these isolated researchers - who will be left out of F/FRED if the project concentrates solely on institutions - may be not only some of the best researchers around, but they are clearly also the ones who could benefit most from participation in a research network.

Why?

5.1.2 Economic Factors

Economic factors are an important incentive for participation in the F/FRED network in most but not all cases. In the exceptional case of the Taiwan Forest Research Institute, for example, Dr. Hu went so far as to say that they could contribute some of their own funds to F/FRED activities if needed. (He gave as an example their readiness to provide a modest per diem to other F/FRED participants when visiting Taipei). This offer can be explained in terms of Taiwan's

relative prosperity, its political isolation, and the unusual character of Dr. Hu himself. However, it is also characteristic of a cultural attitude towards giving and receiving that prevails throughout Asia. Namely, even the most needy person or institution does not always want to be a recipient, but at least occasionally wants to be a giver - which bestows status on one - as well. Evidence of this attitude was given in the reaction of the foresters at Kasetsart University to being asked by the Thailand government to host an international workshop on community forestry. Again and again they expressed deep pleasure and pride over this - part of which had to do with the fact that they were chosen as the host by the government, but most of which seemed to be due to the fact that their country, although admittedly still poor, was going to spend its own resources on a development activity involving other countries in the region. The pride that this sort of activity generates is a resource that the F/FRED project should take note of and try to tap if at all possible.

This suggests a strategy for network meetings!

These points aside, most potential network participants view F/FRED as a source of much-needed funding, especially for research. For example, FORI in Los Banos specifically stated that they were hoping for research funds from F/FRED, and indeed that they were hoping that a greater proportion of the F/FRED budget would be devoted to supporting research by the network participants than was presently the case. The UPLB College of Forestry also said that they are hoping for research funding from F/FRED. They told us that with cutbacks in government funding, they have become more and more dependent on funding from international donor agencies. The deleterious impact of government budget cuts on research in the Philippines was echoed by Clark in the mission in Manila.

Tarrant in the Kuala Lumpur embassy made a similar point about research in Sabah (due to declining revenues from timber extraction). Not all outside observers accept this view that research institutions in the area have become strapped for funds, however. Thus, Bisson in the Manila mission rejects the contention of Philippine researchers that the biggest constraint on their research is scarce

funding (instead arguing that a far more important constraint is poor research methodology). An example that suggests just how difficult it is to determine if research funding is scarce or not was encountered by our team at FRI in Chit-tagong. As an example of how little money they had for research, the staff there told us about a three-year research project they had that was funded to the tune of 'only' \$50,000 dollars. When we then asked if F/FRED research money of a maximum of \$5,000 dollars per researcher would be valuable to them, they laughed ruefully. Our surprise at this assessment was later somewhat mitigated by an explanation from Davidson to the effect that the \$50,000 dollars had to cover not just research costs but also considerable additional staffing. On the other hand, Davidson also told us that his [?](IDA) project was going to provide the FRI with a total of 7.4 million dollars, as a result of which - in Davidson's opinion - they had (or at least would have) absolutely no shortage of research funds.

After funds for research, perhaps the next most important type of funding according to the potential network participants interviewed is funding for education, in particular for degree programs. FORI in Los Banos noted that the provision of scholarships is one of several major incentives for collaborative research with other institutions or agencies. At the UPLB College of Forestry, the staff emphasized that they lacked funding for research in their own degree programs (viz., carried out within the school itself), as a result of which many of the participants in their higher degree programs take longer than expected to complete their programs. Even at the TFRI in Taipei, which otherwise did not make a pitch for any F/FRED funds, they noted that they might be able to use some scholarship money for study in the U.S. (funds for which are also available from the Taiwan government, but often only after a wait of several years).

Other perceived or expressed needs for funding from F/FRED include equipment, travel, and honoraria. The need for funds to purchase equipment was cited by the UPLB College of Forestry; and Clark in the Manila mission in fact noted that institutions in the country have less and less foreign exchange to purchase equipment abroad. A desire for funds for international travel (viz., to attend seminars, etc.) was cited by both the UPLB College of Forestry and FORI. Finally, the staff of FORI also stated that the provision of honoraria is one of their major incentives for collaborative research with donor agencies.

(*) A special possible use of F/FRED funding is to provide some sort of honoraria or salary supplement to 'country coordinators' of the networks (assuming that this is how the networks are in fact set up). Dr. Carangal told us that he does not provide any such funds to the country coordinators in his Leucaena network at IRRI; and Dr. Surree at Kasetsart University stated that he would gladly act as a coordinator for Thailand in the absence of any such compensation. However, Dr. Surree also told us that he would drop or turn down invitations to participate in other activities - all of which are usually income-enhancing - if he indeed did become a country coordinator for F/FRED; and he also talked with us about all of the time and effort that such a job would require. For a variety of reasons, therefore, there is reason to suspect that if F/FRED does indeed make use of country coordinators, it should strongly consider the possibility of making them some sort of financial compensation. A case in point is the ASEAN-U.S. Watershed Project based in Los Banos, which - because of its ASEAN administration - has not been able to pay its country coordinators anything. According to staff members in Los Banos, this restriction has proved to be a problem, presumably because it has resulted in less activity by their country coordinators than would otherwise have been the case.

In general, two different attitudes towards the funding of F/FRED participants emerged in our interviews. The first, exemplified by the staff at FORI

Attitudes

in Los Banos, represents a feeling that the projected levels of F/FRED spending on participants is inadequate, or more specifically that too small a portion of the F/FRED budget is being allocated to the participants, to their research and institutional development. The second attitude, in contrast, is based on a feeling that the provision of funding is not necessarily a good thing. The most sophisticated statement of this position came from Dr. Carangal at IRRI, who noted that when activities at a research institution are completely funded by an outside donor agency, there is a danger that those activities will come to a halt when the donor agency finally terminates its funding: that is, an activity funded in such a way likely will not become 'institutionalized'. However, Dr. Carangal also noted that it is still usually necessary for outside donor agencies to provide 'seed money' to get the ball rolling (a point also made by Dr. Madamba of IUFRO). Both Dr. Carangal and Dr. Madamba also recommended that F/FRED help its network participants to find other donor agencies to fund their activities. And indeed, just such a function (one of many) for F/FRED was anticipated in Winrock's original project proposal (Winrock 1985: IV.25).

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Conclusion?

A final economic factor concerns not the ^{direct} incentives for participation, but rather the indirect incentives as well as disincentives. One indirect incentive will be mass pest attacks on the various fast-growing MPTS that are now being rapidly disseminated in the Third World. Dr. Brubaker of the University of Hawaii suggests that such attacks will inevitably occur and that when they do, they will drive otherwise competing research institutions together, based on mutual self-interest (as happened when mass pest attacks first hit the various Green Revolution crops). It may take such a situation to overcome some of the disincentives to collaboration that currently exist, in particular the fact that some of the participants are competitors in the international agricultural marketplace. Thus, Foty in the Bangkok mission noted that the Thais are usually reluctant to share any of their agricultural data with the Philippines because

the two are often competing for the same international markets. This issue of competition returns the discussion to one of the most basic issues of the F/FRED project, namely how to encourage collaboration in a research network without jeopardizing the legitimate rights of individual researchers.

Issue

This crucial issue received surprisingly little attention in the background papers for F/FRED. In Rose's paper, 'A Report to USAID/S&T/FNR to Support Development of a Project Paper for the F/FRED Project', he acknowledges that 'Priority use of data must rest with the collector' (1983:9); but no attempt was made either here or elsewhere to figure out how to ensure this while at the same time promoting research collaboration and networking. This is one issue that the F/FRED staff must address early on in the project, and in an explicit manner, so as to allay any anxieties and hesitance that potential participants might otherwise feel.

5.1.3 Political Factors

Two major political issues - affecting the establishment of the F/FRED networks and participation in them by Asian research bodies - emerged from our interviews. One is the general way in which Asian nations view their relationship with the West and the West's relationship with them. In the background papers, Rose (1983:13) acknowledges that F/FRED will have to take into account 'isolationist attitudes' among the potential Asian participants, whereas Parker (1984: passim) more openly and explicitly cites the possibility that some LDC's will suspect the West of using 'networks' to exploit and dominate them. The reality of this suspicion was confirmed during our visit to FORI in Los Banos, where at least one or two of the staff expressed their fear that the CIA or USIS was behind the F/FRED project and would use its data management component to misuse information of importance to the livelihood and welfare of the Phillipine people. (If there is no such ulterior motive to F/FRED, they asked, why should USAID not simply encourage the various national research bodies to exchange

Fears

data directly with one another, as opposed to going through a centralized USAID/Winrock office?) In light of such fears, Burch's suggestion in his background paper (1984:62), that 'A shared DBMS will liberate developing countriesⁿ institutions from having to depend upon the good will of North American or European institutions....' must be seen as a gross misperception of the actual state of affairs. Far from viewing F/FRED as liberating themselves from the West, some of the potential participants see it as tying them more tightly - perhaps with ill results - to the West. Dr. Sajise at PESAM in Los Banos agreed that these anxieties and suspicions regarding the true purposes of F/FRED are inevitable, and he suggested that the best solution is to build the networks on close personal relationships, and count on these relationships and the passage of time to build more positive attitudes towards the project. Another step, that I personally believe would also go far towards lessening some of this anxiety, would be to involve Asians more directly in the administration of the project. The long-term slots have already all been filled, so it is not possible to put an Asian scholar into one of those, but there still remain many man-months of short-term consultancies. Giving some of these consultancies to Asian scholars, themselves based in the region, and sending them from one participant institution to another, would I believe dramatically reduce the amount of anxiety about supposed CIA/USIS conspiracies.

A second, related political issue is the relationship that will exist between the F/FRED project and IUFRO. During our interview with Dr. Saleh at the FRI in Kepong, he noted that the intention of IUFRO had been to interest donor agencies in funding its research networks, not to set up independent ones - as USAID was doing with F/FRED, as he perceived it. Accordingly, during this interview he proposed that the F/FRED project be turned into a joint IUFRO-USAID project; one advantage of which, he said, would be that nations whose relations with the U.S. were problematic could be included in the network. (As it stood, one of Dr. Saleh's staff members acidly observed, one-half of Asia was going

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to be excluded from the F/FRED project.) As an example of IUFRO's political finesse and neutrality, Dr. Saleh noted that in a recent meeting held by IUFRO, representatives from both Taiwan and the Peoples' Republic of China had been persuaded to sit down at the same table.

Concern for the political implications of F/FRED's linkage to USAID may not have been the sole factor at work here, however. We were told at the TFRI in Taipei that Dr. Saleh is known to favor having Asians and not Westerners run the research networks to come out of the Kandy conference - which returns us to the tensions between the West and the Third World that were discussed in the previous paragraph. As noted in the previous paragraph, I believe that the best available means of allaying these tensions is to use some of the short-term consultancies provided in the project to involve regionally based Asian scholars in the higher-level planning and direction of the project as soon as possible.

5.2 Activities

5.2.1 Research

At the moment there appears to be very little genuinely collaborative international research on this this or related topics going on in Asia. Even in the case of ACEAR's research network, the member countries work out their research designs not with one another, but individually with ACEAR - according to our interviews with the RFD staff members in Bangkok who participate in this network. There are many different reasons for this state of affairs, one of which was mentioned earlier in section 5.1.1, namely the nationalistic attitudes that lead researchers to distrust research results from other countries and to insist upon repeating all research on their own in their own country. What this means for the collaborative research that is planned under F/FRED is that there is little predisposition in its favor, and there is some predisposition against it. Thus, staff members at the RFD in Bangkok flatly stated that they thought a common research design for the F/FRED participants would be

'difficult'; and at Kasetsart University the foresters said that they thought it would take them 'two years' of in-country research and preparation before they would be ready for any international collaboration on research. Even then, it was not clear if what they see as 'collaborative' research is the same as that envisioned in F/FRED: they described it as each participating country tackling a different aspect of one broad research problem.

Although this collaborative research may not be easy, there is much evidence to suggest that ^{it} may be very important. Davidson at the FRI in Chittagong told us that the simple coordination of species trials by F/FRED would represent a major contribution to this area of development in Asia.

Others, notably people in the Manila mission and at the UPLB College of Forestry, suggested that the holding of workshops and seminars on research methodology and priorities could have a major, positive impact on this field of development.

The potential importance of this aspect of the F/FRED project is indeed such that Dr. Saleh in Kepong said, in his opinion, the project should emphasize research as opposed to networking per se. This issue, concerning just what sort of a project F/FRED will be, was raised in one form or another in earlier sections and will be raised in succeeding sections as well. It is an important issue for the F/FRED staff at this time only in the sense that they should recognize that there are many different perceptions of and hopes for their project.

5.2.2 Data Banking

The researchers whom we interviewed expressed a moderate interest in improved access to the results of research in other countries in the region. Typical was the comment from staff at the UPLB College of Forestry that they in particular lacked data on those tree species that, while of only minor importance in the Phillipines, were of major importance in neighboring countries. Other institutions, such the FRC in Sandakan, noted that they lack data from research in particular countries, such as Indonesia and the Phillipines, where differences

Contribution

in language or bureaucratic idiosyncracies impede the flow of research data. As Dr. Sajise of PESAM in Los Banos reminded us, however, the difference between recognizing a lack of data from other countries and sincerely wanting to overcome it will be determined by whether or not the data involved are important to one's 'bread and butter'. Where this incentive is present, Dr. Sajise suggested, researchers will be sincerely interested in improved access to one another's data.

4 On the other hand, material incentives to acquiring someone else's data can be disincentives to sharing one's own data with someone else. As noted earlier in section 5.1.2, economic competition is said to be a major constraint on the sharing of agricultural data between Thailand and the Phillipines, as a result of which (e.g.) the data banking efforts of the ASEAN agricultural center in Thailand have not been very successful. There is general agreement that it is the commercial or private sector research organizations that are most reluctant to share their data with others (this was noted by staff at both the FRC in Sandakan and the UPLB College of Forestry); a fact that should be borne in mind if an attempt is made to involve private sector organizations from either Asia or the U.S. in F/FRED. While non-commercial ^esearch organizations such as FORI or the UPLB College of Forestry in Los Banos promise to be somewhat more open in sharing their data with others, even their staff noted that some types of data would have to be excluded from such sharing, specifically data that may be economically valuable, threatening, or etc. One of the inherent problems in the sharing of data on MPTS, as noted by Dr. Brubaker of the University of Hawaii, is that breeding trees (as opposed to annual food crops) requires a long-term investment of resources, and this naturally mitigates against the free sharing of data and genetic stock.

One solution to this problem is to ensure that, as Rose suggested in the statement quoted earlier, each researcher who contributes data to the F/FRED banks retains prior rights to ^{their} / exploitation. How to do this is no easy

matter, but it is one that must be tackled by the F/FRED staff early on in the project. If it is not, the most valuable data may be withheld from the F/FRED data banks. Alternatively, these data may be contributed but then misused by third parties, discrediting the project. In deciding how to protect the rights of the individual researchers, some thought must also be paid to what will happen after the termination of the project, or at least of USAID/Winrock's role in it. Dr. Saleh of FRI in Kepong raised this question with us, asking what would happen to the data banks at the end of the project, and it is certain that other potential network participants will ask this as well - and so an answer must soon be ready. In this and other respects as well, a central data bank is indeed problematic, as Dr. Madamba noted in our interview with him. As Dr. Madamba (among others) also noted, however, the most likely solution to this problem - as to most of the problems that F/FRED may encounter - is to make F/FRED a network of not institutions but people, and count on ^{their} personal relations to overcome suspicion and establish trust.

Answer needed

5.2.3 Seed Exchange

This is one area of projected F/FRED activity in which some truly international collaboration seems to be already taking place. The FRC in Sandakan is already engaged in some exchange of tree seeds with other ASEAN countries, for example, as is the FRI in Kepong. (The latter case involves rattan seeds, but the researchers involved said that they were exchanging these seeds on their own initiative, not within the IDRC rattan network.) This also seems to be one area of projected activity whose value is fairly broadly acknowledged and endorsed. Thus, such widely disparate institutions as the UPLB College of Forestry and Sabah Forest Industries in Kota Kinabalu stated that seed exchange and acquisition is an area in which F/FRED could be of great help to them; while Davidson at the FRI in Chittagong expressed the opinion that this is one of the two most important contributions that F/FRED can make to the development of

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MPTS in Asia.

While there is extant interest in and therefore support for this activity, it is not without its problems. As the foresters at Kasetsart University in Bangkok told us, the collection and exchange of tree seeds is 'expensive, hard to organize, and heavily regulated by the governments of the region' - as a result of which, they said, they could not foresee being able to exchange any genetic material before the third year of the F/FRED project. It is certainly true that the laws of some of the governments in the area are not conducive to the exchange of plant seeds: the FRC in Sandakan (e.g.) complained to us about a total ban that the government of Indonesia has supposedly placed on the exportation of rattan seeds. On the other hand, it is less clear why expense and organization should prove as serious an obstacle to seed exchange as the foresters at Kasetsart intimated, given that these are the very resources that F/FRED promises to bring to bear on this activity. It seems more likely that a major if unstated concern of the Thais is that seed stock is potentially if not in actuality a scarce resource, over which there is or may be competition. This competition was evident throughout the region, especially where commercially oriented organizations were involved (e.g., the FRC in Sandakan complained to us that the government owned corporation, Sabah Softwoods, is secretive about its seed stock and will not freely share it with the FRC). The conflict here, as also discussed in earlier sections, is between the manifest economic incentives for competition and the often less obvious economic incentives for collaboration. One solution, at least for the early stages of the F/FRED project, might be to concentrate on the collection and exchange of seeds of MPTS that are likely to be used for subsistence purposes by small farmers, as opposed to MPTS that might lend themselves to market oriented exploitation on large scale plantations.

5.2.4 Publications

Of the various types of publishing activities in which F/FRED might involve

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itself, the one that is of the most obvious value and is the easiest to carry out is probably a network newsletter. As Dr. Saleh said at the FRI in Kepong, a newsletter is necessary to keep the participants in a research network together. A somewhat more challenging activity is assisting in publishing the research results of network participants. Some potential participants, such as the FRC in Sandakan, claim to already have adequate outlets (at least in-country) for their research; while others, such as the UPLB College of Forestry, say that they do not. In the latter case, the major constraint to publication was said to be funding. This is certainly one area in which it would be easy for F/FRED to assist, although the ultimate value of simply assisting participants in turning out in-house publications is questionable. Far more valuable would be assistance in raising the quality of research reports, so that they could be published in a form adhering to recognized academic standards. An ambitious but potentially very important activity for F/FRED in this regard would be for it to assist in establishing in the region a refereed journal or occasional paper series on MPTS. Since the honor of publishing in a refereed medium is not as yet widely recognized in Asia, initial contributions could be stimulated by promoting the 'social status' of publishing there, and by providing substantial honoraria to the authors. A final type of publishing venture in which F/FRED might want to get involved would be a project reprint series. Articles, chapters, or papers written by network participants that are of high quality and relevance to the project, but that have seen limited distribution (such as the publication on nursery establishment by Mr. Das of the FRI in Chittagong), could be reprinted and distributed to researchers within as well as without the F/FRED network. In this case as well, of course, some peer review would be needed to determine which papers will be reprinted and which will not.

5.2.5 Translation

A necessary counterpart to the data banking and publishing discussed above will be an active program of translating. Mutual incomprehension of languages

Questionable

NO!

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is at present a clear, major obstacle to research networking in the region.

This was acknowledged to be an obstacle to the use of research data from other countries (especially Indonesia) by FORI and the UPLB College of Forestry in the Phillipines, and by TFRI in Taiwan. Interestingly, the staff of the latter institution asked the F/FRED project for assistance not only in translating research

reports (or at least abstracts of them) from other countries in the region, but also asked for assistance in preparing (or in their words 'editing') their own reports for publication in English. Precedents and models for this sort of activity are provided by a number of international research programs in the region, such as the ASEAN-U.S. Watershed Project mentioned earlier, or - most notably - BIOTROP in Indonesia. BIOTROP has probably the highest standing in the international community of any scientific organization in Indonesia, and its vigorous program of English language publishing is clearly one of the major reasons for this. English should probably be designated as the common language of the F/FRED networks, therefore, but this designation must be accompanied by the realization that many participants cannot operate in it and will therefore require a serious (and this means well-funded) translation program if they are to truly participate in the networking.

5.2.6 Meetings

As I noted earlier in section 3.3, one of Dr. Saleh's four key components in a successful research network are regular meetings among the participants. Without such meetings, for example, the RFD in Bangkok asserted that a common research design for participants in the F/FRED network would be impossible: with them, they admitted that a common design just might be achieved.

The research design aside, such meetings - and the international travel that they involve - also provide one very significant incentive for participation in the network. This was acknowledged to be the case by both FORI and the UPLB College of Forestry in the Phillipines (e.g.). At research institutions

Role
for
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with somewhat greater resources, such as the TFRI in Taipei, even just an official invitation from F/FRED to an international meeting would be valued, because this is a necessary prerequisite to traveling on their own resources. In some cases, notably for researchers in Bangladesh at the moment, attendance at international meetings might prove difficult even with an official invitation and outside funding in hand. A partial solution to this problem would be to ensure that at least some of the network meetings are held in Bangladesh, thus providing the researchers there with exposure that may otherwise be sorely lacking.

Rotate the meeting sites

As also was noted earlier in section 3.3, the question of who is to attend these international meetings is an important one. Their attraction to researchers does not mean that they are any less attractive to bureaucrats not involved in research; and the intention of using them as an incentive for the former does not mean that they will not be snapped up as a 'perk' by the latter. This, as everyone we interviewed agreed, is to be avoided at all costs. The attendance at meetings of the actual people engaged in research was cited by Dr. Saleh as one of the keys to successful research networking. The strategies that various organizations utilize to ensure proper attendance were discussed in section 3.3 as well. One that was not discussed is the naming of specific people in the invitations sent out. Staff in the Manila mission said that, at least in the Philippines, this helps to ensure attendance by researchers as opposed to their bureaucrat superiors. On the other hand, it bears noting that Dr. Ali at BARC in Dhaka views 'name' invitations as more problematic than 'open' ones. The politics of the research establishment there may be such that if the right people are named in an invitation, no one will be allowed to attend; whereas if the invitation is left open, then there is at least a chance that the right people will be allowed to attend.

5.2.7 Training

There is some demand in the region for the type of training that F/FRED will be able to provide, as evinced in Dr. Saleh's recommendation that it defin-

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itely be included as a component in the project. At the FRC in Sandakan, for example, we were told that, as a result of a government cap on the hiring of new staff, they are concentrating on the training of extant staff. To this end, they would welcome assistance from F/FRED for short-term nondegree training of junior staff, as well as for study tours by the more senior staff.

Even at the relatively well-endowed TFRI in Taipei, we were told that although their need for assistance with long-term degree programs of training is mixed, (given that their are also in-country government funds for this), they have a very clear need and desire for assistance from F/FRED with short-term training.

Some of the data gathered during our interviews suggest that the training provided under F/FRED should not all be structured along the traditional student-teacher lines that prevail in most developmental programs. It was evident to us that more innovative training programs are not only enjoying great successes, but are also necessitated by current cultural and political realities in the region.

Tutorial-style training

Thus, Dr. Ralston (USAID's man in the Thai Ministry of Agriculture) spoke of the considerable success that he has had with a training program that pairs one Thai scientist with one US scientist working in the same field, for one month - either in Thailand or the US. The 'collegial' aspect of this arrangement clearly contributes to its success and is a clever recognition of the sensitivities of senior Asian scientists, as well as an honest recognition of the fact that Asian scholars are capable of teaching, as well as learning from, Western ones. Precisely these sentiments lay behind Dr. Saleh's offer of assistance from his FRI for F/FRED's training program. He sees his staff, that is, as capable of training other Asian scholars - and indeed he sees them as more capable of conducting such training than the typical short-term Western consultant. At the same time, he exhibited a very sophisticated grasp of the effects of such training on the trainers themselves. Opportunities to carry out such consultancies and train junior colleagues are, he noted, a vital component in the professional develop-

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ment of a scholar. If all such opportunities are given to Western scholars, a key stage in the training of Asian scholars is thereby forfeited. In cases where a Western candidate for a training position has marginally superior credentials to an Asian candidate, this dual value of employing the latter (viz., with benefits for trainer as well as trainee) should be borne in mind.

5.3 Administrative Aspects

5.3.1 Administrative Relations

While all of our interviewees favor a focus on individuals as opposed to institutions and on researchers as opposed to superordinate bureaucrats, no^{ne} suggested that F/FRED should ignore or bypass the institutional establishment.

Quite the contrary, everyone with whom we discussed this topic emphasized that all F/FRED communications and actions must proceed through the proper channels. In some cases, this is dictated by official policy. Thus, in Bangladesh we were told by Dr. Ali at BARC that any F/FRED funding to the FRI in Chittagong would have to be channeled through BARC or, alternatively, through the Forest Service. Similarly in the Phillipines, any F/FRED funding to the UPLB College of Forestry would probably have to go through PCARRD. The formal arrangements for funding and cooperation aside, we were told that all F/FRED dealings with individual researchers have to go through official channels as well. Dr. Hu at the TFRI in Taipei said that this applied to all such dealings with researchers in his country, with the possible exception of inviting them to seminars. This is not to say that the national bureaucracies should be allowed to dictate the nature of the project's relations with individual researchers - this is to be avoided at all costs, as discussed in earlier sections - but only that recognition and sanction of these relations must be secured from these bureaucracies. Thus, Dr. Sajise at PESAM in Los Banos said that F/FRED (or any other research network, if it is to be successful) should specify not just the institutions with which it wants to work, but the specific individuals within them as well - but then F/FRED must

secure the approval of the institution for the individuals^{id} selected. Similarly, Dr. Carangal at IRRI noted that he chose all of the country coordinators for his Leucaena network, but then he had to 'sell' these choices all the way up each of the government bureaucracies involved. The lesson seems to be that it is necessary for a successful research network to be run with some independence of the government bureaucracies, but that this independence is possible only by obtaining the good will (or at least absence of rancor) of these bureaucracies through patient and determined political lobbying.

In addition to relations between F/FRED and the respective government bureaucracies, the question of administrative relations within F/FRED bears some mention here. Two important questions in this regard were raised by Foty in the Bangkok mission. First, what will the role of Kasetsart University be vis-à-vis other participants in the F/FRED network? That is, will it assume some special role owing to the fact that it houses the project team? Second, he asked, what would be the relation between the two Winrock employees on this team and the one person on a personal service contract from USAID? This second question is probably the more important one, since it involves the nature of the relationship that will obtain between Winrock and USAID in general. Without attempting to discuss what the nature of either this personal or this institutional relationship should be, suffice it to say here that the more this is discussed beforehand, and the more respective responsibilities are delineated and potential conflicts anticipated, the more auspicious it will be for the start-up of F/FRED.

Aside from the Winrock and USAID positions, the various other proposed positions in the project also received some comment during our interviews.

I have already noted Dr. Saleh's comment regarding the short-term consultants to be hired by the project, namely that they should be Asian scholars insofar as possible. Another proposed position, the so-called 'advisory group', was commented upon by Dr. Carangal of IRRI: he said that in general such groups are a bad idea, because they typically are made up not of the actual researchers but of bureaucrats. The only time that it makes sense to form an advisory group, he said, is when it is needed to fulfill the political purpose of selling a research project to a particular national government. The project position that received the most discussion was that of country coordinator, all those interviewed seeming to agree that this position is crucial to the successful functioning of any international research network. Strategies to enhance the value of this position - having the coordinators chosen not by their respective national governments but by the central project staff, and furnishing the coordinators with a salary if possible - have been mentioned in earlier sections. Another tactic for strengthening this position, mentioned by Dr. Carangal at IRRI, is to ensure that all communications to network participants are channeled through their respective country coordinators. The reality of the country coordinators in some extant research networks falls short of this ideal, in particular insofar as economic support is concerned. Due to bureaucratic or financial constraints, many country coordinators are not paid - those currently working in the IUFRO MPTS network being one example of this. Dr. Saleh of FRI in Kepong (an IUFRO executive board member) in fact asked us if the F/FRED project might be able to give some financial support to the volunteers who are now manning these positions (which are technically not 'country coordinators' but rather 'regional coordinators').

5.3.2 Financial Relations

One financial aspect of the project administration was just mentioned in the preceding section, namely the capability and advisability of paying the country coordinators. As also mentioned earlier, some pros-

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pective coordinators maintained that they would not have to be paid, and Dr. Carangal at IRRI also said that it was necessary. The latter's reasoning was that the people who become country coordinators are typically 'big guys', of position and wealth, and so they really do not need to be paid. The fact that this is in fact not always true is suggested by the earlier cited comment, from the staff of the ASEAN-US Watershed Project, to the effect that they felt constrained by their statutory inability to pay their country coordinators. This is also suggested by Dr. Saleh's request for financial assistance from F/FRED for IUFRO's regional network coordinators.

Probably more important than the presence or absence of pay for particular project positions, however, is the overall flow of project funds. Some of our informants intimated that this is a problem with any USAID-funded project. Thus, the ASEAN-US Watershed Project staff said that USAID budgeted plenty of funds for them, but they could not - in effect - get them when they needed them. Apparently with similar experiences in mind, Dr. Ralston at the Ministry of Agriculture in Bangkok suggested that it would be much more expeditious if F/FRED's funds could be channeled through Winrock as opposed to USAID. However, the most important aspect of the flow of project funds is not their speed, but rather their source and then routing. This is of critical importance in countries with which the US has no diplomatic relations and/or no USAID program. In the event of just the latter, as in Malaysia, F/FRED funds could probably be channeled either through the USAID office in Washington D.C. or through the ASEAN bureaucracy - in the opinion of Wojtasiewicz in the mission in Kuala Lumpur. In the case of a country without diplomatic relations with the US, such as Taiwan, F/FRED funds might be able to be channeled to network participants through US universities with which they are working. Dr. Hu at the TFRI in Taipei said that this route had worked successfully in past cases involving financial assistance from the US government. Another route,

in either of the above cases, might be to channel the funds through IUFRO. Dr. Saleh told us that IUFRO was willing and able to do this in countries where there is no USAID mission. Such an arrangement would seem to be the best of all, depending only upon what the specific constraints or ^erequirements of IUFRO might be in rendering this assistance.

5.3.3 Personal Relations

One of the four keys to the success of a research network, according to Dr. Saleh of FRI in Kepong (as first discussed in section 3.3), is that it must 'come from the bottom'. A 'bottom-up' type of approach was also recommended for F/FRED by Dr. Hu at the TFRI in Taipei, as well as by others whom we interviewed on this topic. For Dr. Saleh, this type of approach consists, at least in part, in limiting the western role in the project and increasing the role of Asians. Unless the Asian participants are given some responsibility, he said, 'they will not commit themselves'. (For this reason, he said, he was pleased to hear from us that there will only be two project people [here referring to the two Winrock positions] in Bangkok, and not seven, as he had heard from some other quarter.) For Dr. Madamba, a regional coordinator for IUFRO, a bottom-up approach means, in part, that the project networks should begin and remain at a personal level. If the networks ever develop in such a way as to involve governments, Dr. Madamba says, then bureaucratic rigidity will kill them. For Dr. Carangal at IRRI, a bottom-up approach means starting small and providing only limited funding to project participants. If the project provides too much funding, Dr. Carangal says, then its activities will never become institutionalized (e.g., the activities will have no life beyond the life of the project). The need to structure the project so that its activities will become institutionalized is a concern for the potential participants in F/FRED (see section 5.2.2) as well as a concern of extant participants in other networks (e.g., the foresters at Kasetsart University openly expressed their doubts to us re. what would happen to IDRC's rattan network when IDRC eventually withdraws its finan-

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cial support).

5.4 Impact of Participation in Other Networks

5.4.1 IUFRO Network

Many of the researchers whom we interviewed voiced criticisms of the IUFRO networks, and some expressed their readiness to join the F/FRED network on this basis. For example, the foresters at the UPLB College of Forestry told us that they prefer F/FRED to IUFRO because the former is focussed on the condition of the farmer, whereas the latter is not; and the foresters at Kasetsart University told us that they are happy about F/FRED because 'it will give us something', whereas IUFRO exists 'on paper only' (although, they added, it does 'provide direction'). The majority of criticisms of the IUFRO networks focussed on their selection of species and on the fact that this selection is being forced upon the network participants. Thus, the staff at the UPLB College of Forestry made it clear that, while they were preparing proposals for research on Albizia because this was assigned to them by IUFRO, many did not consider this to be the species of greatest interest or importance to them. Equally unhappy were the staff of BARC in Dhaka, who feel that jackfruit is the ideal MIPTS for Bangladesh, but see it being officially ignored by the IUFRO networks because it did not make it onto the final list of 'high priority' species at the Kandy conference. The response of a surprising number of research institutions has been to ignore (in part or in whole) the Kandy list. Thus, at the FRI in Chittagong, the foresters have unilaterally decided to add species of particular interest to Bangladesh to the Kandy list. The foresters at Kasetsart University say that Thailand will do the same (e.g., they are adding Tamarindus sp. because of the particular interest in it in Thailand). To these criticisms we would add the observation that the IUFRO networks to date contain little if any actual networking. In the country proposals that are being solicited by and submitted to Dr. Madamba, on behalf of IUFRO, there is virtually no mention of networking activities (at



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least among the ones that we examined): they are only proposals to do numerous, discrete research projects. And indeed, when we discussed the purpose of these proposals with Dr. Madamba, he stated not that it was to promote research networking, but rather that it was to 'rationalize the donor situation' in each of the countries involved - which is not the same thing at all.

These criticisms of the IUFRO networks have several implications for the F/FRED network. First, it is obviously important for the project staff to make it clear to all participants as soon as possible that the F/FRED network is distinct from (even if related to or associated with) the IUFRO networks. There is confusion on this point at the moment, the staff of the UPLB College of Forestry (e.g.) asking us if the two were not one and the same. On the other hand, the project staff should also make it clear that potential network participants do not have to choose between F/FRED and IUFRO: neither research network demands exclusivity. The second implication of the above criticisms of IUFRO is that the coordinators of the F/FRED network must not be dictatorial in dealing with the participants, particularly as regards such things as selection of species to be studied. This seems to be a clear error in the IUFRO administration, from which F/FRED can and should learn. Third, our critique of the IUFRO networks makes it clear that they are not - at least as yet - really 'networks' at all, at least not in the sense in which F/FRED intends to be a network. At the moment, therefore, there is little potential overlap and considerable potential complementarity between the F/FRED and IUFRO networks.

The complementarity of the two networks is recognized within the IUFRO administration. Thus, Dr. Saleh (a member of IUFRO's executive board) told us that the F/FRED project is 'just what the doctor ordered' to fill in some of the gaps (to be selected completely at the discretion of the F/FRED coordinators) in IUFRO's 'grid' of research priorities. This view is reflected in Dr. Saleh's offer to channel F/FRED funds through IUFRO in countries in which there is no USAID mission. On the other hand, it would clearly not be to the liking of either Dr.

Lessons

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Saleh or other IUFRO officers if F/FRED were to establish a research network completely independent of and parallel to their own networks. Thus, while making the offer described above, Dr. Saleh also told us that F/FRED 'should utilize IUFRO's long-established networks'; and at another point, he even asked if USAID could not just give these funds directly to IUFRO instead of setting up this new F/FRED organization - all of which suggest that F/FRED is already more independent of IUFRO than the IUFRO officers would really like.

5.4.2 IDRC Bamboo & Rattan Networks

Both the USAID and Winrock personnel involved in F/FRED to date have agreed that the project should not include either bamboo or rattan, perhaps partly because these plants are not really 'trees', but in largest part apparently because these plants are believed to be already covered by IDRC-funded networks. This latter belief is not really supported, however, by the data that were gathered in the course of this study. To take one example, when we asked BARC in Dhaka about the research on bamboo that IDRC is funding in Bangladesh, we were told that it all focussed on either bamboo propagation or preservation. Of the notable omissions from this research program, one of the most worrisome, according to DR. Davidson at the FRI in Chittagong, is that it does not involve any extension work or on-farm trials. When speaking with the foresters at Kaset-sart University in Bangkok, we were told that field activities (as opposed to laboratory research) were notably absent from their projects funded under IDRC's bamboo and rattan networks. (Research on the utilization of bamboo, for example for paper, was cited as the sort of project that these foresters would like to undertake but that is not supported by IDRC.) The most notable omission of all from the IDRC networks, from the perspective of the F/FRED project, is that they include virtually no networking activities per se. Thus, according to the information given us by the staff at BARC in Dhaka and Kaset-sart University in Bangkok, their IDRC-funded projects on bamboo involve no effort to coordinate research with other countries participating in the network, no plans for exchanging

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seed with these other participants, not even plans to visit the other participants' institutions. This information is supported by a reading of IDRC's own descriptions of the bamboo and rattan projects that they are funding in Asia: they are discrete projects, not inseparable components of some larger effort. The word 'network' might even be a misnomer for IDRC's current program on bamboo and rattan: it is a network only in the sense that there is a common sponsor. It is open to question whether this should be taken as sufficient reason to exclude bamboo and rattan from the F/FRED project.

Conclusion: F/FRED is the only network which will exist.

6. Network Recommendations

6.1 Network Establishment Other Than by Species

6.1.1 Problems with a Species Focus

In Winrock's proposal to carry out the F/FRED project (1985, Annex B: 1), as well as in Lundgren & Brister's background paper for this proposal (1984:194), it was noted that the Kandy conferees - although they ultimately endorsed a species-based focus for the proposed research networks - recognized that species-based networks would not cover all of the collaborative research on MPTS that needs to be carried out in Asia, and that this type of focus has other drawbacks as well. One of these drawbacks, as discussed in section 5.4.1, is that many network participants feel constrained by a focus on particular tree species, to the extent that some wind up ignoring the supposed focus of their network. In the face of doubtless similar dissatisfaction with species foci dictated by network coordinators, other research networks such as ACEAR have allowed their participants to select the species of interest to themselves.



There are other shortcomings to species-based networks, from the standpoint of the methodology of tree breeding. First, as Dr. Brubaker of the University of Hawaii reminded us, the study of a particular tree species in isolation is not recommended: each such study should include studies of that species' compet-



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itors as well. I would apply Dr. Brubaker's principle even a little more broadly, to suggest that each study of a particular tree species should include studies of the particular socio-economic contexts in which they are grown and utilized.

Good point

The danger in any species-focussed research activity like this, is that the plants will tend to be evaluated as good or bad in and of themselves, on largely or exclusively botanical criteria, on the assumption (which was proven false, at great cost, in the Green Revolution) that a 'good' plant can be plugged into any given socio-economic context. Another shortcoming of the species focus, from the standpoint of tree breeding, involves the great amount of environmental variation that prevails within each country in the region. Because of this variation, the researchers at most institutions cannot really confine themselves to any one species. Thus, the RFD in Bangkok is trying to establish research stations in each of Thailand's many environmental zones, with the aim of finding one or more fast growing tree species specifically suited to each (not every) zone. For the same reasons, the researchers at the UPLB College of Forestry told us that they are interested in not one or two MPTS, but in many. A final drawback to a species focus, from the standpoint of breeding, is that elimination trials might knock out a species that was designated as the basis for a network. What would then happen to that network ? (Winrock 1985, Annex B: 1).

6.1.2 A Problem Oriented Focus

This type of focus is not unknown among research networks. For example, Dr. Saleh spoke to us of an Australian Tree Improvement Network and a Canadian Seed Production Network, both of which are essentially problem oriented and cut across the species-oriented IUFRO network lines. One problem that was suggested to us as a potential focus is research methodology: as discussed earlier in section 2.6, the Manila mission originally recommended that this be the project focus as opposed to particular species. Another recommendation, made by Lundgren and Brister (1984: 16,249), is to focus on particular rural problems or

Advantages

- ① Eliminates possibility of some working on species not relevant
- ② Help alternate questioning of data showing

types of social research (also cutting across species lines). The singular advantage of these types of network foci is that they are inherently more suited to the general pattern of scientific inquiry: most scientific inquiry is problem oriented, not- even in the botanical or zoological sciences - oriented towards species per se. Consequently, more scientists share common interests in problems than in species, and it will be proportionately easier to establish a research network based on the former as opposed to the latter - a point made to us by Dr. Davidson at the FRI in Chittagong. .

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6.1.3 An Environmental Zone-Oriented Focus

An alternate to the problem-oriented focus that is more favored by many of the scholars who have been or still are involved in the F/FRED project, is a focus based on different environmental zones. Such a focus was recommended in Winrock's (1985: 1-3) project proposal, based on the likelihood that it would bring together scientists with the same site problems (1985: Annex B: 1). The problem orientation of this focus was also seen as a strength by Bisson in the Manila mission. Another advantage of focussing the networks on environmental zones is that much of the national forestry research in the region is already zone-oriented - as noted in the discussion of the RFD's research planning in the preceding section 6.1.1. Bringing this kind of orientation to bear on MPTS research would cast a new light on some species: for example, Leucaena has come to be seen as something of a 'wonder tree', yet it is actually - as Dr. Gritzner of the NAS/NRC reminded us - ^{one of} the least successful of the fast-growing tree species in tolerating different environmental zones. A final advantage of focussing the research networks on environmental zones is that this



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would facilitate the inclusion in the project of Asia's dry, montaine countries. These countries may otherwise be left out, as Dr. Saleh told us, because of the emphasis in the Kandy conference list on high priority, moist lowland tree species.

The use of environmental zones to focus the research networks is also not without its problems, however. One problem is that this, like any other focal point dictated by the network coordinators, may simply not suit the interests or needs of network participants. For this reason, Dr. Carangal rejected the initial proposal (from USAID) to base his Leucaena network on agroclimatic zones, and instead left it up to the participants (within broad limits) to choose their own topics of interest. A more serious problem with a focus on environmental zones is the conceptual exclusion of man from this schema. In Lundgren & Brister's (1984: 79-81) background paper, for example, they note that the major determinants of environmental type or zone are rainfall, temperature, soils, and drainage.

Thus, despite the fact that most of Asia is today covered either by the crops that man has directly caused to grow or the anthropogenic vegetation that he has indirectly caused to develop, he is ignored as a determinant of environmental variation. This point is not grasped even by those who realize that the classic environmental models are no longer usable. It is worthwhile to quote McFadden (1984:23) at some length here:

A major drawback to use of any of the environmental models reviewed is that they rely on climate/climax vegetation associations that existed at the time the model was developed. In some parts of the tropics today, deforestation has so changed existing climate and soil fertility that it is highly unlikely that the original climax vegetation could ever be achieved again. Consequently, it seems unlikely that predictions based on past associations will be valid and that greater reliance will have to be placed on soil/water relationships that exist today.

McFadden recognizes that deforestation has rendered environmental models of little use in many areas, but he ignores the cause of deforestation - human activity - in proposing his alternative model based on soil and water. The error is made clearer by asking whether, in a part of Asia whose forests or grasslands are periodically burned off by man (and there are many such parts), the surviva-

bility of an introduced MPTS will be determined more by its adaptation to the soil and water or by its adaptation to man and his fire? The answer is obvious.

Good point

Fire is probably the greatest single hazard faced by reforestation programs in Asia, yet only once in all of the background papers to the F/FRED project did anyone even acknowledge that the fire characteristics of the tree species under study should be noted (Rose 1983: 19-20). ^{CH} This could be remedied - assuming that the networks are indeed focussed on environmental zones as opposed to species - by subdividing these zones (which would continue to be based on climatic and edaphic criteria) into agroecological zones, based on agricultural, demographic, and botanical criteria. These subzones might include, for example, long-fallow swidden cultivation in secondary rain forest, short-fallow cultivation of grassland by hoe and fire, and intensive cultivation of wet rice in diked and irrigated fields. Selecting and breeding MPTS to fit into these niches is far more likely to succeed than selecting and breeding MPTS based only on the characteristics of the soil and water (e.g.) in each niche, completely ignoring the human activities that have created and are maintaining these essentially artificial niches.

Key suggestion

6.4 IUFRO Species Network

6.4.1 Advantages and Limitations

The limitations of the IUFRO network were largely discussed in preceding sections. In section 6.1.1, I noted the general problems of any species focussed network (such as IUFRO): potential network participants tend to feel that the species selected are too few in number and/or are not the ones of greatest interest or importance to them. In general, researchers seem to view the selection of particular species by the network coordinators as an unwelcome constraint on their (the researchers') work. A species focus also seems to be somewhat antithetical to the typically problem-oriented nature of scientific enterprises. The problem of this focus aside, another limitation of the IUFRO network is that

it involves (as yet) very little networking per se, as I discussed in section 5.4.1. Its primary goal if not activity at the present appears to be, as Dr. Madamba put it, to 'rationalize the donor situation' in each member country. Helping to pair different donors with different areas of research, thereby making the overall pool of research funding stretch farther, is certainly a worthwhile activity. Problems arise only if this pairing is taken too seriously. Thus, both the USAID's F/FRED project and the FAO's fuelwood project have taken IUFRO's Kandy list as a starting point, excepting only rattan and bamboo, on the grounds that these two species have already been 'taken' by IDRC. In fact, the true nature of IDRC's rattan and bamboo 'network' suggests that this out-of-hand dismissal by other donors - including F/FRED - was unjustified. As noted earlier in section 5.4.2, many important areas of research of these species are not funded by IDRC, including farm trials, extension work, and utilization studies. Of greatest importance, however, is the fact that IDRC does not appear to be funding any of the activities that will be most central to the F/FRED project, namely networking activities. As an example, the librarian at FRI in Kepong, who is in charge of the IDRC funded 'Rattan Information Network' that is based there, complained to us that IDRC would not buy the network a computer for use in her work. This is precisely the sort of thing that F/FRED was set up to fund but apparently will not, due to an overly arbitrary division of the field with other donors.

6.4 Social Considerations

6.4.1 Social Input into the Project Design

Since its inception, there has been an explicit social component in the F/FRED project; and as the project developed from one focussed on fuelwood to one focussed on MPTS, this component became even stronger - to the apparent satisfaction of many of the potential project participants. Thus, such key figures as Dr. Saleh and Dr. Sajise both expressed their strong approval of this shift from fuelwood to MPTS, Dr. Sajise noting on the one hand that fuelwood is not a high priority issue in many parts of Asia, and noting on the other hand that MPTS

target the high priority group of the small farmers. The RFD in Bangkok, in turn, observed that F/FRED's focus on human development is the one thing that is most conspicuously lacking from their other projects financed by international donors - those projects, they said, focussing only on such things as species trials and tree improvement. Given the favorable perception of F/FRED in this regard, it may be important to review the development of its social component.

Advantage

IUFRO, in whose activities lies the origin of F/FRED, is not particularly active in the field of social forestry. None of its six major research divisions focus explicitly on any social or cultural topics (Lundgren and Brister 1984: 229). This absence was reflected in Dr. Saleh's⁽¹⁹⁸⁴⁾ report on the Kandy conference, which failed to discuss any extant or traditional uses by small farmers of the MPTS under consideration; which offered no provision for farmer input and feedback on the selection of particular MPTS for intense study; and which did not mention the need to study and monitor the impact of MPTS programs on the levels of income and employment among the farmers involved. In another report by a IUFRO officer, Dr. Madamba (n.d.) notes the need to conduct a 'socio-economic study of the impact of the rattan industry on the rural population', but he ignores the need for studies of the past and present economics, ecology, and politics (etc.) of the cultivation and exploitation of native rattans. It is as though IUFRO sees itself as working with a 'tabula rasa' - as though it were introducing its MPTS into societies where no MPTS had ever existed.

Some similar perspectives can be found in the F/FRED project, perhaps inevitably, given that it is actually an outgrowth of IUFRO activities. In the project's background papers, there are some exceptional comments, such as the one by Lundgren and Brister (1984: 234), to the effect that the rural people in Asia have hundreds of years of experience with MPTS; and one in a project paper (USAID, Attachment F: 19), noting the relevance of 'current and traditional ethnobotany systems' (in particular for the land and forest management network). However, the rest of the background material for the project suggests that these

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isolated references to traditional knowledge and practises are pro forma only, and that no serious attempt is going to be made to address such matters in the project.

For example,^{iv} Lundgren and Brister's list of high priority topics of research on MPTS for F/FRED participants, there is not a single socio-economic topic.

This lack of attention to socio-economic factors also manifests itself in a number of naive conclusions regarding native peoples and plants that are strewn through the background papers. Thus, at one point in their paper, Lundgren and Brister

(1984: 123) write that 'It is assumed that a farmer's objective will be to maximize his crop production.' Virtually all of the research that has been conducted on

Third World farmers demonstrates that this assumption is invalid. Very often farmers choose to minimize risk at the cost of production, for example; and in those cases where it is production that is maximized, there are some farmers who will maximize production per unit of labor, others who will maximize production per unit of seed, and still others who will maximize production per unit of land. Of the three, the

last measure of production is often the least common, and yet this is likely the one that Lundgren and Brister had in mind.^{CH} Elsewhere in their paper, in a discussion

of the types of land that should be reforested, they note (1984: 69) that Imperata is a 'worthless cover'. In fact, in many parts of Asia Imperata is valued by the local people as a source of excellent thatch, an inexpensive source of fodder for livestock and browse for wild game, and a manageable and soil-restoring ground cover during fallow periods in the agricultural cycle; and in the areas where this is so, the local people actively use fire to manage the Imperata, to maintain it in a depauperate state, and above all to prevent its succession to brush and forest, which occurs whenever human interference is halted (Dove 1983; in press). According

to Lundgren and Brister's view of Imperata, there is no opportunity cost to planting trees on land that it covers, and there is no rational reason for local people to view this change in vegetative cover with anything but delight. According to the actual state of affairs, however, the opportunity cost of planting trees on Imperata land is relatively high, indeed it is often higher than the value of

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any trees that can be planted there in its stead; and hence the local people often have a very sound, rational reason for opposing the planting of trees on their Imperata lands.

This emphasis on introducing new plants into the Asian societies involved, with little real knowledge about how they will be received by these societies, reflects a pervasive if implicit belief among the contributors to the project papers that plant breeding is a task sufficient unto itself, and that the goals of plant breeding - in particular increased production - are universally desirable ones. Thus, in Lundgren and Brister's (1984: 159-183 passim) discussion of the 'economic justification' for the F/FRED project, they simply cite the prospect for increases in absolute yields of tree crops. They do not even raise the question as to how the various costs and benefits of these increased yields may be distributed among the different segments of the rural population. The prospect of increased yields, in and of itself, is assumed to be enough. In the same vein in another project paper (USAID 1985: Attachment F, 20), it is assumed that one research goal should be 'defining the cultural practises most appropriate to achieve optimum levels of production....' There is no mention of trying to define or select the species most appropriate to achieving optimum levels of production given extant cultural practises: rather, the trees and their breeding are taken to be independent variables, and it is man and his society that is taken to be the dependent variable.

It follows from this perspective that breakdowns in development are due not to problems with the plants, but rather to problems with the people who are supposed to plant them. As Lundgren and Brister (1984: 8) put it, 'Since existing knowledge and technology are not being fully implemented, there must be barriers preventing their use. These may be the lack of awareness of these technologies, or institutional, cultural, social, or economic barriers to their use.' All possible barriers have to do with man, therefore: the possibility of barriers being erected by the plants themselves is not even raised. It follows that the role of socio-economic research, according to Lundgren and Brister (1984: 5-6,167), is to identify

Erroneous assumption

x 1461/

these social-institutional barriers to the adoption of new plant technology. It goes without saying that one of the most important roles of socio-economic research, in fact, is to identify the problems in the plant technology that have caused it to be rejected - and properly so - by an observant and rational peasantry. ~~It~~ The misunderstanding here is a basic one, and it is by no means unique to the F/FRED project.

It has plagued agricultural development projects in the Third World for several decades. It is due to the fact that plant breeders assume that any advance in breeding will benefit the farmers. The problem with this assumption is that the breeders assume that the criteria by which they measure advances are universal, whereas in fact they are culture-bound. This was proven, at great cost to a great number of small farmers in Asia, during the course of the Green Revolution. One result of the advances in breeding rice (e.g.) was that labor inputs could be replaced with capital inputs. For the Western breeders, this was an advance; for large Asian landlords, this was also an advance; but for small Asian land owners and especially for the landless in Asia, this was not an advance: it was a disaster. The kind of plant-centered, sociologically naive research that led to this disaster must not be repeated by F/FRED. The possibility that it might be, and the need to ensure that it is not, is in fact noted explicitly in one of USAID's project papers (USAID 1985: Attachment F, 9). What is needed, then, is just to bring the various contributors and contributions to the project into line with USAID's forthright and informed stance on this point.

6.4.2 Swidden Agriculture in F/FRED

A good example of the current state of sociological input in F/FRED can be seen in the stance that the project has taken towards swidden agriculture. This system of agriculture is discussed in most of the project's background papers as one of the underlying causes of the forestry crisis towards which F/FRED is addressed. Thus, Lundgren and Brister (1984: 55) write of the 'devastation' caused by shifting cultivation in Indonesia and elsewhere. In none of the back-

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ground papers, however, did the discussion proceed beyond these perfunctory denunciations of this system of cultivation. Not one word was written about how F/FRED might specifically address some of the problems to which swidden agriculture gives rise. Rather, the stance taken towards swidden agriculture in this project - as in development projects in general - is that it is a destructive and profligate system of cultivation, and because it is destructive and profligate it will bring about its own extinction; hence the project does not need to develop swidden agriculture, but only to fill in the void that will be left when it vanishes of its own accord. The problem with this stance is that developers have been taking it for a good half-century in some parts of Asia, and swidden agriculture still shows no sign of vanishing: in Lundgren and Brister's paper, for example, they report that the number of shifting cultivators in Thailand increased from 300,000 in 1969 to over 700,000 in 1984 (1984: 131). This surprising persistence of swidden agriculture suggests that the popular views of its destructiveness and profligacy, and also productivity and sustainability, may be seriously flawed (see Dove 1983). Of more immediate relevance to the present discussion, its persistence suggests that the F/FRED project would do well to directly address this system of cultivation.

Need

Swidden agriculture is in fact an ideal candidate for some of the research and development in F/FRED. The fact that this has been overlooked is due in part to the sort of wishful thinking that was discussed in the preceding paragraph, and in part to a very elementary if common misunderstanding of this system of agriculture. Thus, most of the background papers to the project contain a statement to the effect that 80-85 percent of the wood harvested in the tropics in general, or Asia in particular, is used for fuel (e.g., Burch [1984: 5], USAID [1985: Attachment E, v]). This statement is fundamentally flawed, because it ignores the vast quantities of wood that are felled, dried, and burned by swidden agriculturalists, in Asia as well as elsewhere in the tropics. The purpose in burning this wood, as scholars of the subject have known since the beginning of this century, is to make

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its nutrients immediately available for consumption by annual food crops planted in the ashes. If by the word 'harvested' we mean 'utilized', therefore, then most of the wood that is harvested in Asia is used not for fuel, but for fertilizer.

Recognition of this fact opens up some very exciting new possibilities for the F/FRED project. The most obvious of these is to develop MPTS for use especially in swidden

Possibility

systems. The type of tree required is one that might produce fruit, fodder, and so on, but in particular would quickly produce a large amount of combustible biomass. This would allow swidden fallow periods to be shortened - without any attendant declines in crop yields or degradation of the environment - and the total area under swidden agriculture to be thereby diminished (cet.par.).

A case in which just this occurred, following the introduction of Casuarina equisetifolia into a swidden system in Tamil Nadu, is actually described in the background paper by Lundgren and Brister (1984: 140) - who apparently did not realize the full implication of this for the F/FRED project, however. Another case, which has been well documented, involves the very successful introduction of Leucaena into swidden systems on the island of Flores in eastern Indonesia. Despite the existence of such cases, we detected virtually no interest in developing MPTS for this purpose - or even awareness that they could be used for this purpose - among either the formulators of the F/FRED project or the potential participants in Asia. Among the latter, a common reaction was that of the foresters at the FRC in Sandakan, who exhibited no interest in working with swidden cultivators in particular, and who said of 'agroforestry' in general that it was not suited to Sabah because the population density is too low. This is an unfortunate stance to take, in a state in which there is open competition between government timber corporations and tribal swidden cultivators for the remaining stands of primary forest. The existence of such competition demonstrates that, however low the population density of Sabah may seem to be relative to some other Asian states, it is already high enough to think about the need to intensify the indigenous systems of swidden agriculture.

The F/FRED project is tailor-made to make a pioneering contribution to such efforts,

not only in Sabah but throughout most of Asia. It would, without exaggeration, ^{be} tragic if this opportunity is squandered.

6.4.3 Species Selection

In the course of our interviews with potential network participants and other researchers in Asia, we received a wide variety of suggestions as to what MPTS would be good for the development of the small farmers and what MPTS would be bad. Good ones include ^(e.g.) jackfruit and pigeon pea, according to the researchers at BARC and the FRC in Bangladesh, and Leucaena according to the researchers at IRRI in the Philippines and the TFRI in Taiwan. At IRRI we were told that Leucaena is more suited to the small farmers than to big farmers or industry, because it can be used as green manure, it can be used to supplement cattle feed, and it can be sold for firewood. At the TFRI we were told about an interesting program, whereby the Taiwan government subsidizes the establishment of Leucaena plantations on the more marginal agricultural lands of the aboriginal peoples. The aborigines favor this program because, while it is land extensive, the opportunity costs of this marginal land are low; and also because it is not labor intensive, since the opportunity costs of their labor - given the availability of relatively high paying factory work - are high.

The MPTS that are bad for small farmers include (e.g.)

mahogany, according to the foresters at FORI in Los Banos - because you need a permit from the government to fell it - and Acacia mangium, according to the foresters at the FRC in Sandakan - who say that its only use is as firewood, and it is not even the preferred choice for that purpose among the local people.

Albizia is a bad or at best indifferent choice, according to researchers at both BARC in Dhaka and FORI in Los Banos - the latter of whom told us that it is really only suited for use as paper, and for other uses it is inferior to the native MPTS that the farmers already have. Of most interest, however, is the fact that some of the MPTS that were evaluated as bad by certain researchers, were the same ones that other researchers evaluated as good. The outstanding example

of this is Leucaena. In the preceding paragraph I cited the opinions of researchers in the Philippines and Taiwan, who laud Leucaena as an ideal MPTS for the small farmer - an opinion that is shared by many other researchers in both Asia and the US. On the other hand, Dr. Kovith of TISTR in Bangkok stated to us that Leucaena is of no value to farmers, with the possible exception of those who are very hard up for a source of fodder. This exception aside, he said, any fruit tree will be of greater value to small farmer than Leucaena. The dean of the faculty of forestry at Kasetsart University, Dr. Somsak Sukwong, also told us that Leucaena's only value was as fodder. Its wood is not valued by the Thai farmers, its charcoal is thought to have a bad taste, and in fact, he said, Leucaena is now regarded as no more than a weed in many parts of the country. Dr. Gritzner of the NAS/NRC views Leucaena as not merely a useless weed - as do the Thais - but as an unwanted source of competition to annual food crops, given that these crops and Leucaena both need to be grown in the best soils available.

This wide divergence of opinion regarding the same MPTS, appears to be due to the fact that the benefits and beneficiaries of a given MPTS can vary from place to place, and can vary even in the same place over time, as a function of changes in the social, political and economic context. One example of this was given to us by Dr. Ralston, in the Ministry of Agriculture and Cooperatives in Bangkok. He referred to their 'Northeast Rainfed Project', which was very successful in establishing woodlots in the villages of the area, until new regulations were passed by the government that prohibited the villagers from felling any of the trees in these woodlots. At the start of this project, therefore, the woodlot trees had a high value for the local villagers; but after the change in government regulations, this value plummeted and perhaps even reversed itself. An even more illustrative example was provided by Dr. Davidson of the FRI in Chittagong. He related to us the story of a project in Gujerat, which involved the planting of Eucalyptus trees. The plantings were designed to provide fuelwood, but they soon attracted the attention of pulp and rayon mills in the area. With the encouragement of these

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mills, the local farmers started to plant Eucalyptus as a cash crop, displacing for this purpose the annual food crops that had been traditionally planted in the area. This presented the local landless laborers, who had previously obtained employment 3-4 times each year in the cultivation of the annual food crops, with an opportunity for employment only once every five years. As a result, they started to uproot the Eucalyptus trees, and the government - fearing further unrest - felt obliged to cancel the whole project. In retrospect, local officials said, Eucalyptus was not the right species for the area. In fact, the dispute arose over a basic conflict of interest between mill owners, landlords, and landless - not because Eucalyptus is an inherently 'bad' tree. The fatal trait in this instance, namely that a crop of Eucalyptus requires less labor than annual food crops, applies to all other tree species as well. The real problem, as Davidson put it to us, is that any fast-growing tree that can be profitably planted on a small farm for subsistence purposes, can also be planted on a plantation for use in (e.g.) a pulp mill.

The real problem is that fast-growing trees, and especially MPTS, are very 'plastic' in terms of the production systems under which they can be exploited. Consequently, the social value of these trees, for example their value to small farmers, is also plastic: it can vary from place to place, and from one time to another. This value is not a 'constant'. This kind of observation is anathema to plant breeders, who interpret it as an imputation of 'variation in the species'. There can be no such variation, they argue, and correctly, so long as it is biological variation to which they refer. The problem is that biological properties in and of themselves are irrelevant to development. They become relevant only when someone plants a tree, cultivates it, harvests it, and then puts it to some use. These actions are social and economic in nature, they confer social and economic properties and values upon the tree involved, and they can vary from place to place and from time to time. To ignore this variation because it is not biological in nature, is to profoundly confuse the proper relationship between man and plants. To suggest, in the case of a species with good biological values but bad socio-economic ones, that the

Good point!

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solution is to change the latter, is to suggest not only that people are easier to change than plants, but also (albeit implicitly) that the object of development is plants as opposed to people.

An example of the proper as opposed to perceived relationship between people and plants was given to us by Dr. Kovith of TISTR and Dr. Somsat of Kasetsart University, both in Bangkok. Both of these scholars told us that a major problem with the development of fast-growing trees in Thailand today is that trees are being planted for which there is no desire and no market, which efforts cannot succeed. Market appeal, they said, should be the principal criteria in the initial selection of the species to be planted - not something to be developed after the fact. This is a direct criticism of the developmental paradigm in which plants are developed in the laboratory according to laboratory criteria, and then the socio-economic context is changed as needed to receive them - e.g., where markets do not exist for the plants, they are 'developed'. What the Thai scholars cited above are saying is that when a market has to be 'developed' for a species, it is the wrong species for that situation. What they are saying, that is, is that the socio-economic situation must be the determinant variable, that the social values of the plant take precedence over its biological values, and - ultimately - that people are more important than plants. This simple, crucial and yet easily forgotten principle must be borne in mind as the F/FRED project proceeds.

6.4.4 Species Rejection

The development of forestry projects in which the emphasis is on trees as opposed to people - and at the expense of the welfare of these people - is followed, as often as not, by the rejection of both project and trees by the people. One example of this, involving the Eucalyptus project in Gujerat, was discussed in the previous section. Many more such examples were encountered in the course of this study, most involving the use of fire. Thus, in the Philippines, Malaysia, and Thailand, the officials and researchers whom we interviewed all claimed that the des-



Yes
Do not warp
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truction of government tree plantings, by fires set by local peoples, is a major problem. An illustrative example comes from the Lat Krathing region of Thailand, where we inspected commercial tree plantations established by both public (viz., government owned) and private corporations, on land acquired from local farmers. The local farmers have purportedly caused great problems for these plantations by intentionally setting fires in them. One forester described this as a 'problem of communication', while another said that the main cause of forest fires in Thailand, in general, is weeds. These analyses notwithstanding, the response of the foresters to the plantation fires in Lat Krathing involved neither greater communication nor more weeding, but rather the purchase of fire engines (and the digging of pools to supply them with water), the erection of watchtowers, and the arming of the resident foresters. All such measures betoken a forestry program that is

~~All such measures betoken a forestry program that is~~
not in the best interests of the local people: if it is truly in their best interests (as opposed to what some forester merely thinks is their best interest, or should be their best interest), then the program will be accepted; and if it is not the then the program will be rejected and the trees destroyed if at all possible. It is that simple. All of the common rationalizations, attributing farmer hostility to 'poor communication', 'strength of tradition', 'lack of education', and so on are merely that, rationalizations and nothing more. We conducted one interview that was exceptional in the lack of recourse to such rationalizations, with Dr. Hu of the TFRI in Taipei. He noted to us that there is relatively little cutting and burning in Taiwan's state forests, and said that there are two reasons for this: first, the high level of return to labor in rural wage labor has made swidden agriculture much less attractive than it used to be; and second, the low cost of bottled gas has made the gathering of firewood in the forests much less attractive than it used to be as well. Dr. Hu attributed the absence of illegal cutting and burning not, *therefore,* to greater communication with the rural people, or to their higher education or greater enlightenment, but simply to the facts of their economy (in particular the opportunity costs of their labor). When forestry policy and activities are in

the economic interests of the rural people, they will go along; and when they are not, they will not go along. This principle provides a very reliable method for monitoring the actual as opposed to the intended impact of the F/FRED project on the small farmers of Asia.

6.5 Ecological Considerations

Some of the most important (albeit little discussed) determinants of species selection are ecological in nature. As noted by Dr. Davidson at the FRI in Chittagong, the parts of Asia that have been deforested are no longer 'natural' environments; rather, they have become 'exotic' environments - and consequently they can only be reforested with exotic tree species. This is his reply to the Bangladeshi scholars and officials who ask why native dipterocarps cannot be used for reforestation in their country, as opposed to foreign exotics. Dr. Davidson also notes that the possibilities for using native species may increase as reforestation progresses: he says that there is already evidence of native dipterocarps seeding naturally under Eucalyptus planted in formerly deforested areas of Bangladesh. The resurgence of nonexotic species, as the environment itself returns to a less exotic state, is therefore both predictable and desirable, he suggested.

Some scholars feel that the original purpose in planting exotic fast-growing trees has been lost sight of in the enthusiasm for tree breeding.

Thus, Dr. Gritzner of the NRC/NAS told us that he sees rather limited use for Leucaena, because it is one of the least adaptable of the fast-growing tree species - in terms of the number of different environments in which it can grow well. He is very critical of the current research to adapt Leucaena to some of the environments in which it does not do well (e.g., those with acidic soils), because other species of fast-growing trees, which are well adapted to each of these environments, already exist. In an environment in which reforestation is needed, but in which Leucaena does not do well, therefore, some other species should be planted. To instead insist on the use of Leucaena, and to devote scarce resources to breeding it for this purpose, is

to subsume the problem of reforestation to the problem of the adaptability of Leucaena. (This criticism does not apply to research - for example, on Leucaena's natural competitors and pests - designed to improve its adaptation to its own proper environment.)

Another important consideration in the planting of fast-growing tree species is not their adaptation to the environment, but rather their impact on it. One potential problem is that a species will be introduced and will fail to perform its intended function, but will hang on as a pest or weed - as the dean of the Kasetsart School of Forestry maintains is now the case in Thailand with Leucaena.

Another, more important potential problem with the introduction of fast-growing trees involves nutrient depletion of the environment. This is a problem peculiar to these trees, Dr. Gritzner of the NAS/NRC told us, because of their very rapid growth and harvesting (in light of which he thinks that the research and development focus should be shifted to slow-growing trees). The only other scholar who discussed this topic with us, throughout the course of our study, was Dr. Hu at the TFRI in Taipei. He has carried out research on Leucaena in this regard and has found that at least four croppings or rotations of Leucaena can be carried out on their soils, before it is necessary to start putting some nutrients back in.

He added that the problem can be mitigated if, during harvesting, only the main stems are removed and all of the branches and foliage are left to be returned to the soil. The trend in fast-growing tree technology does not seem to be in this direction, however. With the introduction of portable chippers that can process (for pulp) branches as small as one centimeter in diameter, the trend is towards taking more and more out of the environment and putting less and less back in. This is clearly an area of research to which the F/FRED project should devote some of its attention. What is the extent of the nutrient depletion problem? How can it be mitigated? And what are the implications for the costs and benefits of planting fast-growing trees in the long-term? All of these questions are pertinent to the avowed concerns of F/FRED.

But how can this be a problem if tree is used in agriculture? (fertilizer)

Research question

7. Critical Considerations for Network Success

7.1 Summary

The factors that have been found in this study to be potentially critical to the success of the F/FRED networks can be grouped into three categories: project activities, project relations, and project foci. Project activities should include meetings, and there is unanimous agreement that it is important for these to be attended by the actual researchers, as opposed to the bureaucrats who merely supervise them. Another important activity is publishing, which should include network newsletters, reports on the research results of network participants, and extensive translations of these reports into and out of the region's various languages as well. The most important activity of all, of course, is research, and there is some sentiment to the effect that F/FRED should itself fund as much of this as possible, and more than it is currently planning to fund.

Regarding project foci: since economic competition will otherwise be so inimical to network activities, it is recommended that commercial species and commercial researchers [&] institutions be excluded from the network as much as possible. One topic that can be recommended for inclusion, on the other hand, is swidden agriculture: if there was ever a problem for which fast-growing trees posed the solution, this is it. Also recommended for inclusion are the bamboos and rattans: the extant research networks do not appear to be providing anything like exhaustive coverage of these two very versatile and widespread plants. The problem of having to exclude particular species because another network has 'taken' them arises only if the F/FRED networks are species-based: for a variety of reasons, this species focus is not recommended. More desirable would be an orientation based on different developmental problems, or on different environmental zones - providing, in the latter case, that the zones are further subdivided into anthropogenic zones. Whatever foci are decided upon, it is of utmost importance to remember that the object of the project is human development, and that the development or breeding of trees is only a means to that end, not - at least in this project - an end in itself. The rejection (e.g., burning)

of project trees by the local peoples can usually be taken as a sign that the means have become confused with the ends.

Regarding project relations, it is apparent that relations with the regional missions are currently a little problematic, and that one likely way to improve these relations is for the project to increase its communications with the missions and attempt to be more responsive to the latter's opinions and concerns. Regarding project relations with the regional governments, there seems to be general agreement that it is important to keep the project free of governmental bureaucracy, at the same time as it is recognized that it is essential for the project to observe all governmental rules and protocol. Regarding project relations with Asian researchers and network participants, the most important conclusion to draw at this point is that there are inherent, structural barriers to smooth relations and participation. Thus, the fact that many of the potential network participants are competing economically with one another will mitigate against their joint participation in the F/FRED networks, as will the fact that some of them are suspicious of the political and economic motives of the US government's involvement in the project, and also the fact that scientific culture is not the same in Asia - where the networks must operate - as it is in the West - from whence comes the network model that is being used.

These are serious constraints, but the means for overcoming them are already clear, at least in part. One of the first and most straightforward steps should be to establish formal, legal safeguards for the prior rights of each network participant to the results of his/her own research. A second step should be to bring as many Asian scholars as possible into the project administration, in particular in the role of consultants. This would immediately help to allay some of the incipient East-West suspicions and tensions; and it will also contribute to the further professional training of the Asians thus employed. A third, related step is to develop the networks from the bottom up, making sure that the project administrators take much of their direction from the network participants. The experiences of other projects

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clearly demonstrate that network coordinators are most effective when they limit themselves to 'coordinating', and least effective when they try to rule by fiat. Finally, as regards both relations between network coordinators and network participants, as well as relations among the network participants themselves, it is clear that a crucial step is to establish personal relationships. There is strong and widespread agreement that this is the only way to overcome the competition and suspicions that are otherwise likely to hamper any international research effort of this sort. Indeed, it can probably be said that the success of the F/FRED project will vary directly with the strength of the personal bonds that are formed among the scientists who participate in it.

7.2 Project Evaluation

In a timely reminder at the end of their background paper, Lundgren and Brister (1984: 254) write as follows:

In setting priorities for establishing and supporting forestry research networks in Asia, it should be kept in mind that the goal is not just to do research, but to do research that will best help solve Asia's most critical problems relating to forest resources and the use of multiple purpose trees.

As regards the problem of differentiating the latter from the former, earlier in their paper they cite two indices by which the benefits of forestry research can be measured: one is the change in outputs and/or inputs made possible by a given piece of research, and the other is the dissemination of this change. The task of evaluating the benefits of the F/FRED project are still more difficult, however, because it is devoted not just to research, but to research networking. Lundgren and Brister are less sanguine about evaluating the benefits of a research network than the benefits of research per se. They write (1984: 220):

Experience with research networking in agriculture and other fields indicates that research networks have been effective in increasing research efficiency and increasing international collaboration, but that it is difficult to quantify these benefits.

They go on to make the following statement, the candor of which is to be admired, but the implications of which are worrisome (Lundgren and Brister 1984: 238):

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... there is no acceptable way to directly link specific networking accomplishments with specific improvements in forestry research performance... or to tie such improvements in research directly to the improved social well-being of the rural people of Asia. The linkages are too indirect and take place over too long a time period. Analytical justification of research networking, based upon benefit-cost evaluation, seems to be inappropriate at this point in time.) !

In short, Lundgren and Brister are saying that there is no way to evaluate the performance of the F/FRED project. This opinion appears to be shared, albeit implicitly, by USAID: among six different results that are expected from F/FRED at the end of ten years, not one is easily verified, and not one has any explicit relationship to rural employment and income levels - ostensibly the central concerns of the project - or even to more immediate goals of areas/rates of deforestation and reforestation (USAID 1985: Attachment E, 19). In fact, it should be possible to specify more concrete goals for F/FRED and more explicit measures of whether they have been attained or not. Ample evidence of this is provided in Rose's (1983: iii,36-37) background paper, in which he lists eight specific criteria (many quantitative in nature) for measuring the success of the DBMS component of F/FRED. It should be no more difficult to list similar criteria for the other components as well. Having these criteria in hand, not just for post-project evaluations, but also for monitoring of the project as it develops and progresses, will be a considerable asset and should enhance the project's chances of success. It may be wise to conclude this discussion of evaluation with the advice of Dr. Ta Wei Hu of the TFRI in Taipei: he told us that if one-half of F/FRED's projects are successful, that will be 'OK'. The one-half that fail, he said, can be regarded as a 'tuition fee' for the network participants and coordinators both.

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