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# GOOD PRACTICE IN COMPETITIVE GRANT-MAKING APPLICATIONS TO ASARECA-AFFILIATED NETWORKS

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# GOOD PRACTICE IN COMPETITIVE GRANT-MAKING APPLICATIONS TO ASARECA-AFFILIATED NETWORKS

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# 1 INTRODUCTION

## 1 1 Purpose of This Paper

ASARECA's 1997 strategic plan states that a key objective is "to create a consolidated funding mechanism for agricultural research" (ASARECA, 1997, p 82) A longer-term ambition stated in the plan is the creation of an endowment fund, perhaps as a final result of a regional research fund Such a research fund is one of many possible services that ASARECA can organize for the research community

This paper arose out of ideas discussed among the ASARECA Executive Secretary, USAID, and Abt Associates First, ASARECA did not wish to assume the burden of directly managing a consolidated research fund Second, the concept of a competitively awarded grants system needed to be explored further Third, the steps that need to be take to develop such a fund needed to be laid out in greater clarity Hence this paper was commissioned

This paper is intended as a discussion document that reviews international best practices with competitive financing and makes initial first-step recommendations to ASARECA for setting up a competitive, regional research grant system It also suggests some guidelines for judging among ASARECA-affiliated networks in an initial, low-key competition that would be a precursor to a competitive, consolidated regional research fund

## 1 2 Organization of the Paper

To accomplish these ends, the paper is organized in four sections The first gives a general introduction to why competitive grant-making is useful compared to other models of funding research and what conditions need to be in place to make a competitive system work The second section provides a summary of a typical process of competitive grant-making, broken down into ten steps At each step, I review the generic management challenges that arise within the step, and refer to the range of practice found in different agencies to address them Those readers who are already familiar with grant-making and the scientific traditions of merit review might skip sections one and two and go directly to section three, which discusses ASARECA's options

Section two draws on a solid base of existing documentation provided by grant-making organizations as well as the consultant's discussions with grant managers The documentation includes proposal guidelines, grant administration manuals, governing documents, requests for proposals, and some confidential internal and external evaluations of grant-making in private

funding agencies Competitive grant-making has been around long enough that the documentation is somewhat repetitive, hence the approach here is merely to summarize rather than present detailed arguments with citations attributing particular views to particular authors A partial annotated bibliography and list of useful resources and contacts is provided at the end of the paper

When preparing section two, it quickly became evident that there is only modest variation in management practice for competitive grant systems - regardless of the content or nature of the grant Also, there is not yet a set of "best" practices A better phrase might be "better practice" The limited range of practice among grant-making organizations reflects adaptations to specific situations of time, funding goals, perceived quality of in-coming proposals, communication costs, distance, and level of funding rather than a continuum of worst to best practice This is not to say poor practice does not exist At various points in the text I mention pitfalls and give examples of ways grant managers handle them Note also that better practice in competitive grant-making is not necessarily fixed in time and tends to improve with experience Grant programs that have public oversight are usually evaluated and modified every few years This is itself good practice

The third section takes a look at how competitive grants might operate in ASARECA and be applied to the next round of support to the research networks affiliated with ASARECA while a regional research fund is built

The third section concludes with draft guidelines for network program proposals It illustrates nine possible funding criteria as they might appear in a grant competition organized under ASARECA auspices ASARECA's donors, Board, and network steering committees should feel free to debate these criteria, use them in part or in their entirety, or make up their own altogether The intention of the author is to advance ASARECA's discussion with donors and networks about what funding criteria might best help networks adjust to ASARECA's research strategy without neglecting the relative strengths of the networks to date

### 1 3 Summary of Key Recommendations

Key recommendations to ASARECA can be found in sections three and four and are summarized here

1) Follow the model of the Inter-American Development Bank (IDB) Regional Fund for Agricultural Technology (FONTAGRO) in setting up a regional research fund This would mean using FONTAGRO's governing documents, its signed protocol with the IDB, and its procedures manual as a concrete model that can be easily adapted to East Africa Such a fund might eventually attract donors interested in contributing endowment capital

2) Given that setting up such a fund is time consuming and might well take longer than a year, the problem of the coming year for ASARECA is how to introduce a competitive element to the next round of funding for its affiliated networks This consultant suggests setting up an Advisory Committee for Competitive Funding to Networks The committee would agree on mutually acceptable criteria for judging among four-year network program proposals A separate, independent regional and international merit review panel should then rank, evaluate, and comment on the proposals in a two-stage process described in section four of this paper The donors on the Advisory committee would then agree to use both the set of criteria and the merit review results for their funding decisions to networks in 1998 -- while the regional fund is under construction

3) The Advisory Committee would consist of one representative of each donor interested in participating, one appointee from the ASARECA Board (perhaps the ASARECA Executive Secretary), and two or three representatives from the community of network coordinators and steering committee members This group would agree on criteria and a request for proposals, and hire a short-term local consultant for the rest of 1998 to manage the competition (housed by anyone willing to give the consultant office space and logistical support) Such a local consultant would set up a merit review data base, and organize the work of the proposed international and regional merit review panel

4) The merit review panel proposed here would be temporary and voluntary The local consultant would present the Advisory Committee with c v 's of a group of at least ten possible candidates from the database and the final selection of six would be done by the Advisory Committee The panel would consist of a six person inter-disciplinary group of researchers and research professionals, all with PhDs and research management experience Two would come from the ASARECA research community but must not be representatives of networks submitting proposals in the competition Two members might be drawn from the international pool of researchers and professionals working in the large number of international organizations with offices in East Africa, and two additional members might come from the research community in countries neighboring ASARECA Each network proposal might also have an additional ad-hoc reviewer This last panelist might review by mail and not come to the merit review meeting This person could be an internationally respected scientist with a specialization in the commodity-sub-system under review and should have a track record of publications in peer reviewed journals Networks would receive copies of the merit reviewers' evaluations

5) A two-stage screening process is proposed for the networks during the 1998 funding cycle In the first stage, networks who wish to compete would submit short, 10-page pre-proposals and an estimated budget for a four-year program These would be subject to merit review, and the top ranked networks might then be invited to submit full proposals These full

proposals would also undergo a second merit review by the same panel These second-round finalists would receive variable funding levels based on the merit reviewers assessments of the quality of the proposals That is, networks that submit weak proposals at this second stage would get less funding per researcher/member than networks that submitted excellent proposals Of course, funding levels will ultimately be donor-determined and dependent on availability of funds, but would follow the merit review results as much as possible

6) The Advisory Committee could also serve as a task force to lead the strategic planning and document preparation necessary for the creation of a regional consolidated fund for research

**Box 1 Competition for Research Funds inside ASARECA Networks**

Many but not all ASARECA-affiliated research networks use elements of competition inside the network as a means to allocate available research funds How does this work? Typically, network steering committees determine general research priorities in the commodity sub-system and then the institutions, research teams, task forces, or program members of the network write up proposals that fit the priorities The steering committee (or ad-hoc research committee) allocates the funds according to availability or a pre-approved plan Sometimes, in the case of network-administered small grant funds, network coordinators obtain outside, ad-hoc commentary on the proposals, relying on their own knowledge of contacts and experts in the region In practice, the version of merit review used inside many networks is very similar to that used inside the national research institutes teams and researchers submit work plans and proposals to the senior research staff and institute directors who accept, reject, request modifications, and allocate available funds (source USAID's evaluations of networks and conversations with ASARECA network coordinators and stakeholders) Not all networks have written guidelines for obtaining funding through the network, nor clear, written evaluation criteria for judging among projects and ideas submitted by network members A common concern that has arisen with the networks is that this current setup favors germplasm work to the exclusion of other research and technology transfer themes and that very often the funds inside the network get allocated on the basis of equity -- a way of helping out weaker players -- rather than on the basis of genuine merit and quality

## 1 4 Basic Concepts Structured Competition Versus Other Grant-making Models

This section reviews basic concepts of grant competitions Most grant programs use one of the following ways to determine who gets a grant and for how much

### 1 4 1 Unstructured Competition

In this model, the donor organization typically hires program officers (project development officers, project managers, etc) of varying levels of experience and seniority to fix priorities, inform the potential beneficiaries of the grant opportunity, and screen in-coming proposals The degree to which the program officer has authority to act independently varies widely by donor agency In some funding agencies, the program officer plays only an administrative role, carrying out procedures and policies determined by an oversight Board or senior management group who reserves all decision-making powers In others, program officers have a wide field of action and can proactively lobby their senior managers for certain funding priorities, set proposal screening criteria, and can even make certain levels of funding decisions alone without recourse to an oversight body

In this model of grant-making, the funding process is not very structured This means that criteria for choosing among applicants are not clearly stated or change wildly from year to year and from program officer to program officer -- even in the same funding agency It is common to find in an unstructured competition situation that scanty or unclear guidelines are given to applicants Applicants are often told only that the funding agency is looking for proposals on a particular subject or theme, but no more or even contradictory criteria are mentioned Vague criteria are mentioned and nobody is told who exactly makes the decisions In these situations, competition exists only in the sense that many people submit proposals and few get funded

From the applicants' point of view, this model is like the lotto Many try to raise the probability of winning by cultivating relationships with donor staff and becoming a favorite Others try to submit proposals that reflect whatever the donor wants to hear The disadvantage of this system is that is gives no meaningful guidance to applicants, and the funding process is subject to the whims and fancies of program officers and their immediate colleagues and superiors, many of whom get carried away with fads or "solutions" or who firmly believe that they know what is best for grantees Also there is no way to evaluate whether or not the grant-making program is funding the best proposals Worse, this approach induces a kind of cynicism among grant applicants, even successful ones, many of whom tell the donor one thing to get the funding and then do another This is wasteful of the applicant's time as the funding process requires mobilization of considerable thought and effort on the part of applicants Donor organizations moving from unstructured competition to structured competition often

have trouble, for adding structure takes away program officer "freedom" to "respond to program officer determined needs" by applying the program officer's "solution"

However, unstructured competition can work in situations where the field of potential grant applications is so small (3-5 grantees) that the intention of the donor is to give money to everyone anyway Good practice in such a situation still calls for use of merit review to improve proposal quality and provide assistance to applicants as they plan their proposals and programs

### 1 4 2 Formula Grants

Formula funding refers to grants that are allocated on the basis of demographic, regional, or even political formulas For example, a donor may allocate a pool of money for university research and will specify that the money get divided up among universities on a per-student basis Formula funding is most suited for situations where donors are more concerned with some form of social equity rather than quality and concrete results

### 1 4 3 Structured Competition

In this model, the kind of grant that will be given and the criteria that will be used to decide among proposals are announced ahead of time Applicants make requests and an independent jury separate from the funding body evaluates the merit of proposals, ranks them, and the donor or funding agency uses the results to make the funding decision The jury is independent in that it is not affiliated with the funding agency Structured competition is widely considered to be the most effective form of grant-making when there are enough applicants to compete, where quality of the proposal is important, and where transparency of the decision-making process is a serious consideration It has long been the "gold standard" in theoretical and fundamental research and in recent years the model has made headway in public funding for applied research and technology development The popularity of the model is that is seen as fair and seems to generate higher quality proposals Whatever problems are in it are often considered to be manageable and still an improvement over unstructured and formula funding

### 1 4 4 Mixed Models

Some competitive grant systems mix elements of all three of the above models For example, applicants may be told to submit pre-proposals for funding using Board-determined priorities and eligibility criteria The pre-proposals might be subject to a structured competition with an expert jury reviewing the best pre-proposals, and then the winners invited to submit full proposals These would then be subject to formula funding or unstructured competition under

program officer guidance Mixed models usually reflect specific institutional circumstances such as weak proposal writing skills among the grantee community

## 1 5 Advantages of Having Some Degree of Structured Competition

The advantages commonly cited for structured competition in research are

1) researchers who participate in merit review as reviewers gain rare access to the most up-to-date information on their field of work,

2) researchers whose proposals go through merit review get the unusual opportunity to receive written feedback and commentary from an expert panel of reviewers,

3) the discussion and debate that merit review uses -- the feedback given to proposal writers, and the very act of writing lengthy, detailed proposals -- is all said to sharpen the wits and arguments of the participants, resulting in greater clarity of goals, purposes, and hypotheses, which in turn yields greater quality in the field of endeavor This is said to be true not just for fundamental science, but in social science, humanities, and applied technology development,

4) research information flows more freely and openly,

5) despite some charges of cronyism (linked to assuring transparent management), competition with expert review is widely seen as fairer than other systems

## 1 6 Institutional Preconditions for a Competitive Grants System (CGS)

There are four principal institutional pre-conditions that need to be in place to make a competitive grant system operate well a legitimate governance apparatus and some kind of grant management capacity, a large enough pool of competitors and reviewers for the competition to have meaning, and a management regime that supports the competition by explicitly addressing inherent dangers of self-dealing and conflict-of-interest in the grant-making decisions, and last, a cost-effective communications infrastructure for the various players to use while the system operates A few comments on each of these is merited

### 1 6 1 Large Pool of Competitors and Reviewers

Most well run CGSs rely on a fairly large pool of potential applicants for grants A good indicator of meaningful competition is what percentage of applicants get funding? Obviously, the lower this percentage, the fiercer the competition As a point of reference, the National Research Initiative (NRI) in the U S found that in its first year, 50% of its in-coming proposals were accepted for funding Over four years this figure went to 25%, indicating an increasing degree of competition for research funds

### 1 6 2 A Fair Playing Field Absence of Self-Dealing, Discrimination, and Conflict-of-Interest

For competition to work well, there also have to be enough reviewers in the research system for it to operate smoothly without complaints of bias In small research systems, reviewers are also the proposal writers, the bosses of the proposal writers, or the students of the proposal writers This creates substantial conflict-of-interest Even in a large research system, reviewers must be frequently changed to avoid biasing the system with the views of a just a few people

Small countries with a tiny research community are unlikely to supply the necessary degree of competitiveness for a research fund This suggests that in such situations it would be wiser to put the grant competitions on a regional basis

For real competition to take place, members of a review jury also cannot be put into the embarrassing situation of reviewing proposals that they themselves figure in This would be asking them to be judge and defendant at the same time, or to "self-deal" Equally serious is active discrimination, when reviewers cannot contain their prejudices against some category of proposal writer, regardless of the quality of the proposal

It is relatively easy to organize grant competitions so that self-dealing situations are avoided But conflict-of-interest and active discrimination are more difficult and require conscious management on the part of the competition organizer In small research communities, particularly in narrow research fields, everyone knows each other very well and it becomes difficult to find reviewers who can provide both knowledge and objectivity

Research organizations manage this problem in common ways Most have written policies about self-dealing, discrimination, and conflict-of-interest and these are given to potential merit

reviewers The NRI in the U S requires applicants to list on their proposals the names of research collaborators and co-authors on recent publications so that those listed people are not then asked to review the proposal At the U S National Science Foundation (NSF), a federal grant-making agency for science, reviewers on a review panel are asked to leave the room while a proposal from their home institution is under discussion Other agencies in the U S federal system have staff members note any conflicts that sneak into the process and supplement suspect reviews with comments obtained from ad-hoc, mail reviewers Hence, the problem is manageable

### 1 6 3 Means of Communication

Last, competitive grant systems rely on effective means of communication among players in the system This means a common language for proposals, and a cost-effective way of circulating RFP's, proposals, comments, and money Occasional face-to-face meetings are also important Where transactions cost of communication are high, the viability of a competitive research system is in question The common practice of convening panels of 8-12 merit reviewers is likely to change in the years to come The increasing availability of electronic mail and internet-based communication will likely revolutionize the method for conducing merit reviews Such technologies allow people to study and comment on private documents, vote during real-time discussion sessions, and participate in live-conferencing at low prices relative to face-to-face meetings A few web sites are given in the list of resources at the end of this paper for the interested reader who wishes to sample these technologies

**Box 2 Three Competitive Grant Programs in Africa**

Competitive grant-making is hardly new to Africa, although it has been more a practice among small donors rather than the major bi- and multi-lateral donors A wide range of experience exists One well-regarded grants fund has been managed by the Council for the Development of Economic and Social Research in Africa (CODESRIA), a pan-African membership organization of social science departments throughout Africa It has for many years run small grant competitions for research and for student theses Depending on available funding, CODESRIA has run separate competitions for francophone and anglophone countries Calls for proposals are written up by the grant manager, approved by the Board and donors, and widely distributed to universities and institutes Continent-wide merit review panels review and rank proposals, occasionally making suggestions for modification that are integrated into the winner's funding awards

In the 1980's, two donors worked together to run a similar program -- IDRC and Ford Foundation They managed a pooled fund that gave research grants on a competitive basis to social scientists in East Africa The competition used expert peer review from a continent-wide pool of African researchers A 1985 evaluation of that program noted that participants felt that winning a competitive award helped them significantly in their research career and that demand for the awards was strong enough to make the competition real, for on average during the years of the program, only 25% of proposals got funded Interestingly, participants in that program overwhelmingly (79%) asked that the donors continue to administer it themselves and not transfer it to an African organization where they felt that the risk of self-dealing, mismanagement, conflict-of-interest in decision-making was too high (see IDRC, report by Mutiso and Nkinyangi, 1985)

Another interesting example is that of the IDRC-supported African Technology Policy Studies Network (ATPSN) It distributed clear guidelines to researchers for its grant competitions A coordinator provided personal feedback to proposal writers and bibliographic assistance Then an annual workshop took place in which proposals were peer reviewed, although without any guidelines given to peer reviewers Evaluation of the activity led to three suggestions pertinent to this paper give very clear criteria to merit reviewers and require them to prepare written evaluations of the proposals, add an initial workshop where competitors could revise their proposals before final submission to the competition, and set a firm policy NOT to fund any proposal that needed major revisions (see IDRC's 1996 report by Daniel Chudnovsky and Lydia Makhubu)

# 2 AN OVERVIEW OF A TYPICAL PROCESS FOR COMPETITIVE GRANT-MAKING

## 2 1 Summary of a Ten Step Process

Most competitive grant programs rely on slight variations of the following process model

**Step 1** Agree on a general objective for the grant-making activity and who will be the pool of potential beneficiaries

**Step 2** Organize a governance apparatus and grant management unit to handle the funds and the administration of grants

**Step 3** Agree generally upon funding categories, priorities, programs, deadlines, eligibility requirements, proposal evaluation criteria, grant size and duration

**Step 4** Write up a Request for Proposals (RFP), get it approved by the governance structure, and then distribute it to potential applicants, holding proposal development workshops as necessary

**Step 5** Acknowledge in-coming proposals and screen proposals for technical requirements and eligibility

**Step 6** Conduct merit review and ranking of proposals

**Step 7** Submit ranked and reviewed proposals to decision-making body for funding

**Step 8** Sent out contracts for funded proposals

**Step 9** Make payments when signed contracts returned, monitor grants

**Step 10** Close grants and conduct evaluation

## 2 2 Issues and Range of Practice for Each Step

### 2 2 1 Step 1 Determination of Goal of Grant-making

Every grant-making organization has some kind of goal statement determined by the most powerful stakeholders Some agencies have a goal statement for each particular grant-making program Examples often found are to serve as a resource for innovative people and organizations, to stimulate technological development in a particular commodity sub-system, to promote scientific quality, etc Organizations new to grant-making may have some trouble developing a statement consistent with their other activities Nonetheless, the effort to develop a clear and succinct statement of why a competitive grants program is being established will be useful It will orient all stakeholders and will serve as a reference point later when confusion sets in

### 2 2 2 Step 2 Setting up a Governance Apparatus and Grants Administration Unit

Most organizations that make grants for research and development outside the private sector are structured as quasi-governmental or not-for-profit organizations with a specific constitution and by-laws The constitution is the document that declares the organization's purpose, structures an oversight board and establishes the Board's accountability to some national legal system The Board then is free to determine overall policy, subject to its ability to attract funding for its priorities

Often, the oversight Board then hires a few people to staff a grant management unit By-laws organize the relationship between the paid staff and the oversight Board Details vary greatly

In any case, constitutions or articles of incorporation must be recognized by some government to have any legal force If it is important to get many donors to contribute to a pooled fund, the governance apparatus will be very important Potential donors will look into issues of representiveness, transparency, and general legitimacy of the governance structure Most will want to know what provisions exist for dispute resolution regarding use of funds or ownership of the funds, which court system would treat the disputes, and what would happen to the money were the organization to dissolve

From this basis, many organizational variants are born For example, the largest competitive grant-making organization in the U S is the National Science Foundation (NSF) It is an independent federal agency with a congressional charter and congressional funding, very similar in concept to a crown corporation, a structure typical of Commonwealth countries Relative independence such as is found in the NSF is important to the research community because researchers seek maximum intellectual autonomy from government while still retaining meaningful government support

Most grant-making organizations for science are national in character, even if they make grants overseas This is because regional grant-making organizations have a hard time obtaining the necessary legal legitimacy Typical options are to become a project or unit of an inter-governmental regional organization (such as CILSS or IGAD in Africa) In Europe an option is to create an EU recognized "euro-region" But other variants are possible (see FONTAGRO box below)

A compelling option is for ASARECA is to create its grant program as a project or program of an international donor organization The best choice would be an organization that has legal status outside the region-- in a country where donors feel confident the court system would properly treat conflicts and claims over the money in the fund A pertinent example of how this option worked out for Latin America is the Regional Fund for Agricultural Technology in Latin America The FONTAGRO has no autonomous legal status but its clear procedures manual, governing documents, and legal protocols among the stakeholders has meant that it attracts both support from its Latin American members and significant pledges from donors Because the case could serve as a possible model for ASARECA, Box 3 highlights important aspects of the FONTAGRO governing structure

**Box 3 The Regional Fund for Agricultural Technology in Latin America**

The Regional Fund for Agricultural Technology is a program of the Inter-American Development Bank (IDB) It has special protocols defining its status within the IDB The fund has a constitution signed by the founding member countries and by-laws in the form of an operating manual that members have agreed too The constitution sets up a Board of Directors appointed by Secretaries of Agriculture of member countries Members also must subscribe to the fund by contributing money The governing document distributes one vote per $100,000 contribution to the fund, so if Brazil contributes $200,000, it gets two votes If a foreign donor joined and paid in 1 million, it would get 10 votes One hundred percent of votes are determined this way, and an additional 25% of votes are distributed to the Latin American member countries on a one vote per country basis, thus balancing the dominance of large donors Note that donors who wish to vote in the organization must ratify the constitution of the fund Donors can give without joining the Board, if they so wish

FONTAGRO has signed a second document which is a protocol with the IDB in which IDB agrees to set up a program for the FONTAGRO into which the IDB contributes in-kind resources such as an office, legal and financial oversight including investment of funds, and staff time to the secretariat Other donors have contributed to the costs of running the four-person secretariat The IDB is not itself a voting member, despite their contributions The research fund is funded by the member countries who write checks to the FONTAGRO/IDB The IDB invests the money conservatively, following Board guidelines The FONTAGRO grant management staff at the secretariat then use Board-approved priorities and RFPs to solicit research proposals in the member countries Any researcher, research team, or organization operating in the region is eligible, including the CGIAR centers, networks, NARIs, or universities All proposals are subject to merit review, clear guidelines and criteria, and availability of funds This is a useful organizational model that gets around the many problems of creating yet another inter-governmental regional organization, while still retaining legitimacy among its stakeholders

### 2 2 2 1 The Costs and Size of a Grant Management Unit

A study of eight public grantmaking programs in the U S found that the overhead of managing peer-reviewed grants program averaged 2 87% of the total grant budget The largest percentage that this author found was at USDA/NRI which had an overhead of 4%, all very small relative to similar figures in the non-profit sector which range from 10-30% Every donor

agency complains that they don't have enough money for overhead, but the amount of work they do at that low level of overhead is considerable Each research manager in the US public sector handled an average of 63 proposals year (range was 43-90), including time for detailed review Each research staff person was responsible for monitoring an average of 21 successfully-funded proposals a year (range 16-28, see U S Government Accounting Office/RECE/94-95) All of this is prior to the availability of low-cost internet communication, which should substantially decrease overhead and increase the number of proposals that can be handled each year The implication is that the staff needed to manage a grant management unit is dependent more on the number of proposals to be treated than the size of the grants made

### 2 2 3 Step 3 Determine Funding Priorities, Grant Categories, Deadlines, Grant Duration, and Eligibility and Screening Criteria

Funding priorities generally refer to kinds of grants, general themes, disciplines, subjects, or topics that will be accepted for funding These priorities can be determined by the donors, political bodies, Parliaments, Boards of Directors of a scientific organization, expert committees of senior specialists in a field of endeavor, individual program officers, or whatever combination is most appropriate given the goals behind grant-making A key point is that the priority-setters be seen as having legitimacy by the pool of potential applicants Funding agencies that decide priorities in obscure, internal ways are often accused of being capricious Internal battles over priorities and criteria become ferocious and debilitating for all participants in the system

More and more agencies resort to organizing some kind of temporary advisory board to pronounce on the agencies fields of endeavor and domains of intervention For example, a Board of Trustees may ask a program officer to hire or convene an expert commission to review a field of research and recommend specific priorities, which are then approved by the Board

The range of practice in priority setting for any field is great Politics and power inevitably enter the picture The US Department of Agriculture, for example, has a complicated flow-chart illustrating a dense "flow of dialogue" among dozens of actors in the research system, in which technical players interact with intellectual lobbies of various kinds How exactly this interaction occurs and which element has more weight than others is not altogether clear More typically, as in the US National Science Foundation, expert commissions are convoked every few years to review field of work and recommend new funding programs or re-orientations of existing ones In the case of the Regional Fund for Latin America, the International Food Policy Research Institute was contracted to conduct an innovative regional priority setting/regional research agenda using innovative Geographical Information System technology The results were widely

accepted and appreciated and took a couple of years to develop completely These were then integrated into a competitive funding model

Note that in many grant agencies, program officers, often expert in a particular area, can heavily influence the priority-setting process as well And it should be noted as well that who is assigned to participate in expert review commissions is often subject to unclear decision-making processes Influence, prestige, intellectual authority, seniority in a university system, publication record, all are factors that influence who makes it onto such commissions Young researchers often claim that such mechanisms are inherently conservative

Nonetheless the use of commissions of experts, interacting with colleagues in the field to review a field of inquiry has gained widespread legitimacy in the research world Note also that priority setting at this level is not an exact science It consists of making a set of ever-changing arguments about what kind of research and technology development is important For this reason, priorities for funding, topics, and categories of grant-making are not necessarily fixed in time Good practice is to conduct both internal and external evaluations every few years and modify priorities, funding strategies, criteria of evaluation, and eligibility requirements accordingly

Determination of the type of grants that will be made is another important planning step, and one worth substantial creative thought Percentages of grant-making budgets can be divvied up and allocated to any number of grant categories This is another way of reflecting donor priorities, without necessarily predetermining themes or subjects Some examples in the research world are

1) student dissertation awards,

2) grants for research and travel during sabbatical periods,

3) inter-disciplinary team research grants,

4) institution-building block grants,

5) technology transfer partnership grants,

6) conference, symposia, workshop and travel grants,

7) small grants for exploratory research in new or "non-priority" fields of work

Determining eligibility requirements for grants is also a way of pre-screening applicants and narrowing a competitive field before proposals are considered by expert juries Typical categories to consider for eligibility in a research competition might be individual researchers, teams, junior researchers, or even institutions Stating such eligibility criteria up front allows grant management staff to screen out and reject ineligible proposals, thus easing the burden on the people charged with merit review of the proposals

The duration and size of grants must also be determined and deadlines must be fixed for receipt of proposals, for initial screening if any, for merit review, and for informing applicants of the winners Turnaround time is important and the better funding agencies track length of time from receipt of proposal to informing applicants of the results The smaller this figure, the better However, too rapid a response time can result in accusations that the grant-maker is just "writing checks"

Clarity on general funding guidelines is important Applicants need to know how much money they can ask for and how much they might reasonably be expected to compete for, even if the grants are not for fixed amounts Other deadlines that are relevant are setting up contracts with grantees, making payments, and timetables for completion of the grant activities

Last, the criteria for choosing among proposals should be established As a point of reference, the US National Science Foundation uses variants of the following basic criteria

8) competence and capability of the researcher(s),

9) intrinsic merit of the research and likelihood that it will lead to new discoveries and advances in its field,

10) utility and relevance of the research to improved technologies and the solution of society problems, discoveries and advances in its field,

11) effect of the research on the infrastructure of science and engineering

Setting criteria is rarely so easy Most grant-makers adapt their criteria to the purpose of the grant program, the nature of the activities to be funded, and the abilities of the applicant community It is also important that criteria be clear enough and simple enough that proposal

writers understand them and that merit reviewers can conduct their review in a timely fashion without endless debate over what the criteria actually mean Criteria also are used to signal new priorities on the part of donors, a long accepted practice that can be abused if criteria change capriciously from year to year and the funding cycle is short It should be clear now that the use of criteria (such as market orientation, "filière" or sub-sector analysis to determine research themes, etc ) is in no way a limiting factor on the use of a competitive model of grant allocation Indeed, competitive funding would only enhance the effectiveness of the criteria, for those research organizations, teams, or networks that best use and interpret the criteria get rewarded with more and better funding than those who don't understand the criteria or misinterpret them

### 2 2 4 Step 4 Prepare a Request for Proposals (RFP) and Distribute Widely to Eligible Candidates for Grants

The RFP summarizes all of the above information and gives instructions to the applicants on how to submit proposals The RFP can be anywhere from a one-page sheet to a twenty-page detailed manual Applicants can be asked to submit any type of proposal, from simple project descriptions and work plans to full-fledged strategic plans covering a five-year period

Proposal preparation and review guidelines for small grants are typically less complicated than those for large grants, but in all cases, guidelines need to be clear One warning while clarity and simplicity is important, recipe sheets of simple-minded fill-in-the-blank forms are to be avoided except as information cover sheets to longer proposals and for budgets The point is that the format needs to be flexible enough to allow applicants to make their best case for funding and not contort themselves to fit incomprehensible proposal formats This is a common complaint that competitors for grants have made when such fill-in-the-blank forms are used

If informational workshops are to be held for the applicant community, dates should be mentioned in the RFP as well as who the applicant might contact to get answers to questions about proposal preparation Once written up and approved by the relevant decision-making body, the RFP is then sent out by all available means to the potential competitors

A common variant of this step is to ask the applicants to submit short 2-5 page pre-proposals as a first-stage screening tool If the applicant community is small and it is likely that most will receive some kind of grant in the end, another variant is to give each potential applicant a planning grant to allow them to develop their proposal for funding This usually involves collecting data, reviewing literature, meeting with members, attending proposal writing workshops, and getting preliminary guidance and feedback from outside experts Many agencies also hold proposal development workshops open to short-listed applicants during which some kind

of preliminary merit review is supplied and some technical assistance provided to help applicants improve the quality of their proposals before producing a final product

### 2 2 5 Step 5 Incoming Proposals Screened for Eligibility

Grant management staff acknowledge in-coming proposals and screen them with an eye to technical eligibility requirements and completeness They make requests for additional information if necessary Applicants who are not eligible are informed at this point Technical eligibility usually means asking simple questions such as does this proposal fit the RFP? Has it met the deadline? Is it from an eligible researcher or organization? Has all the necessary information been supplied?

Many variants are possible at this point For example, the Rockefeller Foundation's forum grants program uses an ad-hoc technical panel of resource people to help scientists and research teams prepare proposals and go through the initial planning for longer term research projects This arrangement allows Rockefeller Foundation to conduct both screening and proposal development at the same time Other agencies such as the International Development Research Centre (IDRC) rely on internal program staff to do this screening and proposal development work

### 2 2 6 Step 6 Merit Review Conducted

Proposals are then sent to reviewers for comments and ranking Sometimes, grant management staff will also rank and comment on proposals, if they have the technical expertise This process of evaluation by expert group is called merit or peer review Merit review practices vary Most agencies that use it develop and maintain large computerized lists of potential reviewers Key words in their database will indicate each reviewer's domain of expertise Reviewers may be sent proposals by electronic mail or through the post Some agencies convene reviewers in one location to meet and analyze all proposals as a group They claim that such face-to-face sessions are essential to good merit review, as all reviewers find it important to debate and discuss proposals with their colleagues before making decisions Information technology has eased the reviewing process somewhat When used, video-conferences are generally preferred to tele-conferences Internet conferences are also now a viable option

There are several ways to manage merit review, all of which usually involve finding between three and ten reviewers for any one proposal Standing review panels are groups that serve as reviewers on a particular theme for several years, with a few members replaced each year to avoid cronyism Ad-hoc review panels are less bureaucratic They are set up by a grant

manager who simply uses the reviewer data-base to dig up the required number of new reviewers each year

Reviewers are usually brought to a meeting room and spend as long as necessary to go through each proposal and provide individual and collective commentary Mail reviewers are also used, in which the grant manger mails one or more proposals to a particular expert for additional commentary Proposals are rarely reviewed blind (that is, with the name and address of the applicant removed), unless there is reason to suspect that some kind of bias has crept into the system Review sheets and grading schemes are widely used Many panels begin and conclude their work with a spatial ranking of the proposals across a conference table to stimulate discussion about different points of view

Agencies vary in the instructions given to reviewers It is now considered good practice to require reviewers to read and sign conflict-of-interest policy statements as well as review descriptions of agency funding criteria that are to be applied They are also asked to leave the room and not participate in discussions affecting their own institution, and to give feedback on each element of proposals as well as give a general ranking Qualitative commentary is usually summarized on a computer during discussion Rarely can a single reviewer force changes to be made in a proposal, but if the panel as a whole wishes, it can request changes or recommend some kind of conditional funding

Note also that the eligibility requirements to serve on a merit review panel may vary The idea is that merit reviewers be research "peers" in some way to those submitting proposals This usually means that the reviewers have PhDs and are active in some way in the research world and have enough knowledge and experience of the kind of activities under review to offer informed and useful commentary Merit review panels are chosen from the entire pool of available experts They are NOT chosen by selecting so many chancellors, or so many institute directors or heads of departments, or so many members of important scientific boards or agencies Indeed, it was partially to avoid the bias that such members would bring to a merit review panel that the system was created in the first place Organizers of merit review panels now study who is available to serve and try to team up younger and more senior researchers, assure a gender mix, etc , all to avoid charges of cronyism and self-dealing by "old boy networks"

### 2 2 7 Step 7 Merit Review Results Compiled, Summarized, and Conveyed to Applicants and Decision-Making Authority

The output of merit review is usually some combination of numerical scores, rankings, and qualitative comments and suggestions prepared by the reviewers Grant management staff then

send these on to a separate decision-making authority of the funding organization who then approves grants and specific grant amounts, in most cases sticking closely to the results of merit review After this decision, all applicants, both successful and not, are sent summary copies of the comments, suggestions, rankings and scores Names of reviewers are usually withheld, although given that their names are usually cited in annual reports as a matter of course, it is not impossible to find out who might have served on a review panel

It is one of the benefits of the merit review system that researchers can learn how to improve their proposals, and many agencies encourage rejected applicants to resubmit their improved proposals in the next round of competition Most agencies have an appeal process so that if some applicants believes their proposals have been unfairly or vindictively reviewed, some additional review may occur

Often, applicants are sent comments and asked to revise their proposals for the current round of funding before the meeting at which the approving body decides on grants This is because the merit review panelists believed the proposal to be a good one, subject to a few changes Some funding agencies hold proposal development workshops for this group of short-listed, "almost-ready" applicants who have been requested to revise and resubmit Deadlines are usually tight at this point and the revision process is often rushed It is NOT good practice to forward to the funding authority proposals that still need massive overhaul and agree to funding conditioned on substantial modification Neither is it good practice to sent out surprise contract letters to "winners" telling them of all the changes they have to do or accept These changes should be made BEFORE funding is approved and contracts developed

### 2 2 7 1 The Separation of the Funding Decision from Merit Review

Merit reviewers should not have the additional burden of deciding who gets funded and how much Their task is an intellectual assessment of proposal quality Most agencies take the results of merit review to another decision-making body who is in some way accountable to the donors (Congress, European Union, Parliament, the foundation, taxpayers, etc ) which then allocates available funds to the higher ranked proposals Rarely does the decision-making body not follow the rankings of the merit reviewers, although the qualitative comments that reviewers made are used to modify budgets or make distinctions among closely ranked proposals This is all quite tricky and many charges of bias have been made when merit review summaries and rankings are not followed Decision-making bodies must keep accurate, publicly available minutes of exactly how and why they approved funding for reviewed proposals Note that it is not the role of the decision-making body to review the proposals all over again, a practice that defeats the merit review system and a frequent failing of inexperienced boards

### 2 2 8 Step 8 Contracts Sent Out for Approved Grants, and When Signed, Payments Sent

The grant management staff then prepares contracts for approved grants These can be long or short, and usually make reference to accepted uses of the grant funds, goals of the grant, duration, and include a schedule for payments and reporting Some agencies make payment only after research is completed, an increasingly favored management approach in Africa where so many research organizations have weak or sub-standard accounting and financial control systems Other donors make incremental payments which adds considerably to the burden of the grant management team Other practices are to make one large up-front payment and reserve a small percentage for payment after final reports are received, or more rarely, to give researchers all the funds up front Once researchers sign the contract and return it, the payments begin

### 2 2 9 Step 9 Researchers submit Financial and Technical Reports at Approved Intervals and Grant Management Staff Monitor Progress

The grant contract specifies when beneficiaries (institutions or research teams) must make reports on the progress of their work under the grant These deadlines can be at any interval that is appropriate Some agencies request yearly reports, others request quarterly reports or bi-annual reporting At least one agency leaves it up the program staff to negotiate a schedule of reports with the grant winners, based on the specifics and nature of the research activity If the grant is very small, frequent reporting is an administrative encumbrance If the grant is very large, quarterly reports are not unreasonable, but yearly reporting is generally considered adequate

Technical reports consist of narrative summaries of how the objectives and activities of the research are progressing Assessing these reports requires some professional competence in the field of work and is not a mere administrative matter Financial reports cover how the grant funds are being spent

Most agencies encourage grant management staff to visit a sample of grant winners each year to see how the research is progressing, which requires modest travel budgets for grant managers Random external financial audits of the use of grant funds are also common practice, creating additional overhead for the grant management unit Sometimes this is done by in-house accounting staff, and in other cases agencies contract with an accounting firm to conduct a few random audits each year

During the grant period, typical problems that require action on the part of grant management staff action consist of researcher requests to delay, extend, or otherwise change

schedules for reports and/or payments Trouble-shooting financial transfers is a common task Researchers also make requests to change their budgets in the middle of a grant Simple policies that allow grant management staff to look into such situations and solve them on the spot are useful Generally, if the researcher is requesting very large or thematically significant changes that alter the nature of the contract, the grant management staff have to obtain another level of approval if not reject the request outright

**Box 4 Movement to Competitive Funding in Peru**

In 1989, the Canadian bilateral development agency (CIDA) funded a consortium of Peruvian economic research institutions The member organizations had set up an association and put together a steering committee to define the research agenda Each institution-member of the Consortium received a specific amount from the fund, the allocation determined jointly by IDRC (whose field office in Peru administered the fund with a fund-appointed project coordinator) and the steering committee of the Consortium In a second stage, each member-institution would submit to the steering committee a list of research projects and then draw down on their allocation Researchers frequently challenged the steering committee's priorities Peer review under the consortium had a slow start, as researchers were not used to criticism Evaluation of the research activities noted the weak quality of some of the research and strongly urged that the fund be put onto a much clearer competitive basis (see IDRC's report by Juan Antonio Morales, July 1993)

### 2 2 10 Step 10 Closure and Evaluation

Once final reports are in and the last payment made and accounted for, grants are usually closed, administrative jargon for filed away after some kind of final accounting and review Staff of grant-making organizations frequently lament the lack of attention to evaluation of any kind, which ideally occurs at this point Size of grant tends to determine the necessity of evaluation, for it can be too expensive to evaluate every single small grant Publicly-supported grant-making organizations tend to organize evaluations more frequently than private ones These can be done as reviews of a grant-program area, or evaluation of a sample of research projects Evaluations can be internal, external, or both Donors who use unstructured competition to allocate grant funds tend to resist evaluation, as the goals of the grant-making were unclear to begin with and it is rarely clear how the grantees were selected, a situation that makes evaluation awkward

# 3 APPLICATIONS TO ASARECA AND THE NETWORKS

## 3 1 Options for Step 1 Agreeing on a Goal for Structured Grant Competitions

ASARECA has yet to do this, although the work involved is not great It would require convening the relevant stakeholders (Board, donors, key members of a good sample of network steering committees, and perhaps coordinators) and reviewing specific proposals for a mission or goal statement and finding a mutually acceptable formulation One possible such statement might be

The purpose of the competitive grants fund for applied research networks is to use competition and merit review to raise the standards of quality of network programs and network-funded research and thus increase the likelihood that the networks make and promote adaptable technologies of economic significance to the region Note that each competitive grant program, be it for thesis research, technology transfer, institutional support, etc , needs its own statement

## 3 2 Options for Step 2 Setting up a Governance Apparatus and Grant Management Unit

### 3 2 1 Governance

As a regional association of research organizations, ASARECA is a reasonable choice as a primary sponsor of a some kind of competitive grant system, except that ASARECA itself does not have the financial resources to do it and it has explicitly stated in its strategic plan that it does not want to directly manage such a fund Therefore, one way to begin is to have ASARECA be one of several sponsoring agencies of a regional fund for research Such a fund might eventually be successful so that donors with larger resources will agree to endow it This would not lead to an endowment for ASARECA itself, or for any particular research institute, but it might lead to an endowment for the separate fund, thus having the advantage of stabilizing the flow of resources devoted to regional research

A regional research fund that has clear rules and procedures about ownership, access to funds, governance, and financial management could likely attract many donors, including national governments But as outlined in the strategic plan of ASARECA, it would be a separate organization from ASARECA

The key to this is setting up a new organization The first step would be to develop governing documents that define the terms of participation on the governing board of the fund Such an organization might be called the Regional Fund for Applied Agricultural Technology or any name mutually agreeable to the initial stakeholders of the fund ASARECA's strategic plan explicitly suggests such an approach (see p 111) The idea is that a new Board of Directors be established that sets the rules and policies about the management of the research fund and its use

In thinking through what such a Board might look like, note that donors will then ask a set of questions about the pooled fund and answers need to be ready Typical questions that might asked of any organization seeking to create such a fund would be

1) who does the governing board represent and how is that a good thing?

2) how can we be sure that no one type of stakeholder dominates the Board?

3) how is the governing board adequately structured so that it is responsive to the ultimate beneficiaries of the organization's work? Who is the Board accountable to from a legal point of view?

4) if the organization gets into legal disputes with me or with someone else, what court system adjudicates and where?

5) if the organization for some reason dissolves, what are the legal provisions that determine what will happen to the money we gave to it? What court system oversees the disposition of the funds in such a situation and what laws will it follow when it does so?

6) do the users of the money have adequate financial control and accounting systems in place that give me (and the people who give money to me) confidence that the money cannot and will not be used for purposes other than what I gave the money for?

7) is there a fund-accounting system that allows me to designate the kind of things our money can be used for and that tracks use throughout the flow of funds from account to account?

A very useful model to follow in setting up the new articles of incorporation and by-laws for a regional research fund is that of the Regional Technology Fund in Latin America (see Box 3 above) ASARECA should obtain a copy of the protocol between that fund and the Inter-

American Bank A variation on that model is to add reserved seats for certain types of stakeholders one seat for an ASARECA appointee, one seat for the regional association of universities, one for IGAD, etc

To proceed, ASARECA should hire a specialist to develop draft governing documents, by-laws, and grant-making procedures that incorporate competition and merit review These should serve as the basis for a strategic plan for the fund, to be negotiated among key players interested in establishing it

Once a governing structure is laid out, rules for membership established, and general rules for grant-making from the fund established (all put together in a strategic plan for the Fund, as all members, both founding and new, would have to sign them before joining the Board) In this model, the next step is negotiate a protocol of collaboration with an international organization operating in East Africa who might be willing to house the fund Four criteria in this search for an international partner are relevant

The partner must have an internationally acceptable standard fund-accounting software for its financial management and in-house capacity to invest potential endowment funds,

The partner must be willing to house the Fund as a "program sub-account"

The partner must be willing to negotiate a detailed protocol with the Fund concerning its role and responsibilities vis-à-vis the Fund and vice versa This protocol will cover investment of the fund, accounting, the terms on which new donors can contribute to the fund, and terms that allow the release of money from the fund for uses determined by the Fund Board

The partner must allow other donors to make restricted gifts to that sub-account without taking overhead for itself

Three additional, optional-but-strongly-suggested criteria to look for are

1) The partner organization does not wish to charge significant overhead, if any

2) The partner organization must be willing to contribute in-kind resources to the Fund, such as the costs of financial management and accounting of the fund, a room in its regional office to serve as the Fund's headquarters, part-time secretarial staff or even loan of a professional staff

member to serve part-time as the Fund's grant manager in a grant management unit of the Fund

3) The partner organization has headquarters in the U S or U K or other country where trust law is highly developed so as to increase potential donor confidence in the fund and take advantage of developed capital markets for safe management of the fund's assets

A point to remember is that the Fund in this model will not technically be a true independent organization From a legal point of view, the money will be owned by the international organization, but use of the money and eventual endowment will be legally restricted by terms of the protocol, much as occurs in trust law in the U S and U K

Note that in this model it is unlikely that ASARECA or any one donor could impose a great many general rules on the fund such as funds would be limited only to ASARECA-approved networks or only ASARECA members However, if ASARECA or any particular donor were concerned about losing control over use of the funds, note that is possible for ASARECA or that donor to raise money itself and then contribute the money to the fund, adding some donor-imposed restrictions on it Restrictions such as "this particular pot of money must be used for regional research networks whose work is within the top ten commodity-sub-systems ranked by the ASARECA Board" are feasible The kind of restricted gifts that the fund can accept should be laid out in the governing documents and protocol with the partner organization

It might take anywhere from one to four years to get such a regional fund up and running However, ASARECA stakeholders suggested to this consultant that the various regional research networks should be the initial pool of candidates for competitive funding, perhaps as soon as the next round of funding to networks that USAID is considering for 1998 In this case, there may not be enough time to organize a network competition under the framework of a true regional fund

A good option in this case is for ASARECA to set up an interim Advisory Committee for Competitive Funding to Networks ASARECA should appoint to it one or two people to represent its own interests on the committee Each donor interested in participating in a competitive, pooled funding system for the networks might also be invited to designate one of their staff to serve on the committee The networks interested in obtaining funded from such a competitive mechanism might meet and designate two or three members to serve on the committee

This committee would work out a set of mutually acceptable criteria for use in a merit review process The donors on that committee would agree to use the criteria and merit review process to screen network proposals until a more structured regional fund for research can be organized

### 3 2 2 Phasing in a Grant Management Unit

A grant management unit can be quite small Functions of a grant management unit are to manage the call for proposals, organize the merit review panels, and send proposals through the approval process, then to monitor the grants and financial flows, organize audits as necessary, and prepare annual reports for the Board In the model suggested here, the grant-management unit would be employees of The Fund, as constituted above, even if they are merely "loaned" to the Fund from another organization

As for size of such a unit, recall it is the number of grants allocated, not the size of grants that determines the personnel needs If monitoring of grants is organized as a simple affair, with great reliance on external ad-hoc financial auditors, ad-hoc and mail reviewers of proposals, a grant-management team might need to be only two or three people working half-time throughout the year handling up to 20 grants per grant manager

The unit would normally consist of a grant manager, a financial and accounting assistant, and a secretary/administrative assistant The grant manager would be a person with some research background and good management skills A variant of this is to adopt the practice of a "panel manager" (U S Department of Agriculture, NRI) In this model, an external researcher could be contracted for a number of days a year (forty, for example) to serve as a "merit review manager" A different review manager could be hired per funding program Their role would be to provide the intellectual content to the grant-cycle and be a point of reference to questions the grant manager may have The panel manager proposes the annual or tri-annual updates to the RFP and makes the necessary revisions and updates to the funding guidelines during each funding cycle just prior to Board approval and distribution to the applicant community

The panel manager also sets up the merit review panel and chairs the merit review committee, making sure the review process goes according to plan and that all parties get accurate information on the proposals and how they were reviewed

The part-time grant manger serves as a permanent liaison to handle inquiries, set up the reviewer data-base and distribute RFPs The grant manager also handles the preparation of

contracts, the schedule of payments, arranges payments, and handles inquiries and requests for extensions and budget changes, bringing these to the attention of the ASARECA Board or the panel manager should they surpass the manager's realm of authority

The costs of the grant management unit could be substantially reduced if the Fund negotiated an arrangement with an international institution to contribute in-kind resources for the unit and to house the unit inside the international partner organization itself The overhead costs of the grant-management unit (salary and all) and the costs of merit review should not exceed 5% of the grant budget Institutions that might be willing to help ASARECA by playing this role are the African Development Bank, SPAAR, the World Bank, the International Development Research Center, the IFS of Sweden, DANIDA, or SIDA Other such prospects may be known to the ASARECA Board and the Executive Secretary should sound out these organizations to learn of their willingness to play such a role

If inexperienced staff must be hired for the unit, a simple way to get them the training they need is to have them intern for a month or two at one of the better-managed competitive grants programs in the United States For example, the U S Department of Agriculture staff of the National Research Initiative has hosted interns

For the case of the networks seeking funding in 1998, I suggest that the donors who agree to be on the advisory committee described above hire a consultant resident in East Africa to serve as a temporary grant manager, perhaps just for the remainder of 1998 This local consultant could prepare the final RFP for the Advisory Committee's approval, make sure all networks get it, and construct a data base for merit review of the proposals, as well as organize the proposed two-step screening process for the proposals In such an ad-hoc system, the first step would be for networks interested in the competition to submit pre-proposals, which an independent merit review panel would short-list according to agreed-upon criteria The next step would be for the finalists to prepare full proposals for funding, perhaps with a proposal-writing workshop as an interim step When proposals are ready, they undergo a second round of merit review The ranked and reviewed proposals would then be sent to the donors, who have previously agreed to use this system to test out a competitive system

## 3 3 Step 3 Determining Eligibility Criteria, Type of Competition, Guidelines to Applicants, and Merit Review Criteria

### 3 3 1 Eligibility, Scale, and Mixed Model for Funding

A regional research Fund as described in step two above would write up its own series of funding programs, criteria, eligibility requirements, and describe its competitive funding process as part of its governing documents The Fund's Board would approve them

In 1998, for the ad-hoc competitive funding process proposed above, it would be the Advisory Committee that approves the criteria In the last section, the reader will find criteria suggested by the author of this report, which the committee would certainly debate and modify

Given that the number of established networks is small, that many new networks are emerging, and that networks vary in size and purpose, the consultant suggests that ASARECA use for 1998 a mixed grant-making approach for the networks This would combine formula funding with structured competition that includes merit review, and would gradually move networks towards a pure structured competition model in a grant-fund managed by the proposed Fund An example of how this mixed model approach might work is found in section four

### 3 3 2 General Research Priorities

ASARECA has already defined its general research strategy and priorities If a Regional Research Fund were established, it would be free to set its own priorities However, if ASARECA is represented on the Board of such a fund, ASARECA would be free to try and persuade the Fund to use ASARECA's priorities as its own ASARECA might even lobby with the other potential Board members of such a fund to write into the governing documents that the fund will always use ASARECA's priorities, although it should be noted that if other players enter the scene for such a fund (farmer's organizations, national governments, a wider group of donors, agri-business, etc ) they may wish to lobby for different criteria The Fund's Board would also establish its own specific screening criteria for any particular grant program it establishes

### 3 3 3 Specific Screening Criteria for Network Proposals

For the next cycle of network funding in 1998, how will networks be judged? While criteria need to be debated, this should not be entirely a participatory issue in the first round Those who are judged should not be the only ones to set the standards for judging! That would be called self-dealing Donors, experts outside the system, and ASARECA's Board will have to participate in the discussion, as described above for the creation of an Advisory Committee for Competitive Funding to Networks

During this discussion, it should be stated that a single set of standards and criteria will never be perfect for all parties, nor will total consensus be achieved, nor should it Debate and critique is part of improving science Nonetheless, criteria should be clear, comprehensible, useful to proposal writers, easy to manage for merit reviewers, and send all the right signals that the advisory committee wishes to send

This consultant informally asked many network coordinators and institute directors what criteria should be applied to judge network programs and all gave remarkably similar answers market-orientation, commodity priority in the ASARECA ranking, network capacity and skills, quality of the agenda and activities, coherence of the work plan, etc Hence, it may not be that difficult to get agreement on many criteria

It may be more troublesome to get consensus on criteria that signal changes in the research agenda For example, ASARECA has stated as an explicit goal to "change the agenda and research orientation of the networks" and to make the networks "implementors of ASARECA's goals" as listed on page 77 of ASARECA's strategic plan

The messages sent to the research community in ASARECA's strategic plan contain several points, as noted below

1) base research priorities on technological possibilities that will help farmers produce for the market and generate income,

2) concentrate research on critical areas that will catalyze change,

3) research should concentrate on technologies that create markets or exploit market opportunities in a measurable way (using sub-sector market analysis or the "filière" approach),

4) the network research programs should change in content and orientation so that agricultural research is a stimulus to market-oriented agricultural production,

5) regional research programs must have benchmarks and timetables for technology generation, each technology should be defined and its purpose stated,

6) research programs must get the expertise necessary to make market analysis of their technologies,

Additional points under continued discussion include a) improving the regional division of labor in research and b) assuring the ecological sustainability of farming systems (see ASARECA, 1997)

Brief discussion with a limited sample of researchers in the ASARECA system reveals that they interpret the above signals in very different ways When asked what the market orientation meant, many answers were given

1) researchers should work with or for "subsistence" farmers because such farmers are not "market-oriented" enough,

2) researchers should work with "commercial" farmers,

3) researchers should work with rich farmers, not poor ones,

4) researchers should work on export crops or with agri-business companies,

5) researchers should work on post-harvest technologies for processing food into marketable commodities,

6) researchers should forget about natural resource management because improvements in resource management do not have economic benefits that can be quickly captured by a particular group in one generation

Obviously, greater consensus would be useful and some debate on all the ill-defined concepts would help, but endless discussion on concepts could be a trap The research literature in economics and sociology harbors an equally great variation in definitions of "market-orientation", "subsistence farmer" etc, so forcing a common definition of market orientation might artificially narrow research opportunities that are already significantly economic in nature

The model criteria and proposal format in section four of paper supply some flexible criteria to judge among networks, and might serve as a starting point for debate among the Advisory Committee over exactly what criteria ought to be used The author assumed that for each of the nine criteria suggested, what matters and what must be judged by reviewers is the quality of the argument that networks make for themselves when responding to each criterion and the degree to which their various arguments convinces reviewers of the argument's validity

### 3 4 Options for Step 4 Screening of Incoming Proposals

For a research fund, if a small grant management team is in place as negotiated in prior steps, the principal choice to make here is to decide what kind of proposal development workshop that the grant management team would need to organize This may vary by grant program

The question the proposed Advisory Committee on Competitive Funding for Networks would need to address at this step is how should networks organize themselves to obtain the necessary socio-economic analysis of their commodity sub-system, analysis that will be needed to write winning strategic plans and funding proposals in the next six months?

### 3 5 Options for Step 5 Merit Review

Wider use of merit review would be a welcome addition to the research world in East Africa and would bring practice more in line with international standards While merit review for the applied sciences is new, it faces no theoretical obstacles, and as we have seen in section one and two, Africa is no stranger to it The screening suggestions in the ASARECA strategic plan on page 112 refer to a three-stage review process The suggestions here are a slight modification of that idea, just enough to bring it into line with better practice as noted in sections one and two of this paper

Since the research world is international, both the proposed regional fund and the proposed Advisory Committee should consider that, in addition to researchers inside the ASARECA system who can serve on merit review panels, a worldwide pool of potential reviewers exists who can

provide mail reviews There is a large group of international experts resident in East Africa who have many years of research experience It would be important to draw upon this group and not limit the pool of merit reviewers only to those affiliated with ASARECA This consultant recommends that both the Fund and the Advisory Committee use ad-hoc review panels rather than standing panels Using at least six such ad-hoc reviewers would conform to good practice elsewhere, and that number would provide a variety of critical opinion

In the case of reviewing network proposals, I suggest that the panel be supplemented with one mail review from an international specialist who has specific expertise in the commodity sub-system that a network is working on, even if such an expert resides in Latin America, India, or the U S

The guidelines for composing a merit review panel that the Advisory Committee could use for this coming round of funding to networks might be

1) two researchers from the ASARECA research system (randomly chosen on the basis of qualifications and availability),

2) two research professionals resident in international organizations and donors with field offices in East Africa,

3) two researchers with the relevant qualifications from neighboring countries outside the ASARECA system,

4) one mail reviewer per network proposal with international publications and recognized scientific competence in the commodity sub-system that concerns the network proposal

Note that relevant qualifications here means a PhD and work experience as shown on a c v that indicates knowledge and understanding of agricultural research and research networks Seniority or position is not important and use of such criteria in selecting panel members would not be good practice Indeed, the panel should deliberately include younger reviewers under the age of 40 and try to assure that the panel does not reflect any one category of researcher Two of the reviewers should have technical research experience in the commodity system, but not all reviewers need be so specialized, as network proposals are not entirely technical in nature

Note as well that not all merit review systems require reviewers to hold a PhD In network-administered grant funds, a M Sc may be entirely sufficient But given the scale of funding involved to networks and the sensitivity of all parties, it is best to construct a review panel that has the highest academic credentials Last, the review panel suggested here is temporary, not permanent

### 3 6 Options for Steps 6-10 Approval, Contracting, Monitoring and Evaluation

There are two situations to consider how these steps might work in a regional fund as proposed in step three, and how these steps might work for the suggested competitive process in 1998 for the networks

In the first case, the Board of the regional fund would approve the ranked and reviewed proposals that arise from merit review, using rules established in the Fund's operating manual The Fund's grant management team/unit would prepare the contracts for the approved grants and do so with whatever implementing agency manages the network The grant management team would then conduct whatever monitoring is necessary The grant management unit might also contract with third party accountants to do random audits of the grant winners and from time to time and might also organize to hire external Board-approved evaluators to prepare evaluations of either specific grants or entire grant programs

In the case of the current network situation, the merit review panel would forward their ranking and recommendations to the existing donors on the Advisory Committee, who then use these rankings and comments to prepare their usual funding contracts with the implementing agency of the network, modifying these contracts to reflect prior agreements with the Advisory Committee This is necessary until a full regional fund can be established In this case, the donors do their own monitoring or jointly sponsor an evaluation team But evaluation might also be conducted by consultants approved by the Advisory Committee and whose scope of work is mutually agreeable to all parties on that committee An even easier way to manage evaluation is to have networks write into their proposals the costs of evaluation and just state in the contract that the donor has to approve the evaluator(s) and the scope of work Then the network can manage the evaluator's contracts itself

# 4 TOWARDS MODEL GUIDELINES FOR NETWORK PROGRAM PROPOSALS

## 4 1 Suggestions for a Two-stage Competition

In the coming year, the suggested Advisory Committee for Competitive Funding to Networks would need to approve guidelines for network proposals, grant award packages, grant duration, and eligibility requirements that would go into an RFP that is then sent to all eligible players This can be done even before a grant management unit is set up, as long as donors agree to use the Advisory Committee approved guidelines, funding formula and merit review system

In the first stage, networks who want to participate in the competition should submit pre-proposals of 5-10 pages These will be judged by an regional and international ad-hoc peer review panel Winners of this round will be invited to submit full proposals, also judged by the same merit review panel

In both the pre-proposal and final rounds of judging, the merit review panel will use the following criteria to judge, using simple rankings for each (Excellent/Highest=4, Very Good/High=3, Average/Fair= 2, Poor/Weak/Low=1) They will also be asked to provide qualitative commentary and overall rankings Networks submitting proposals will receive copies of comments and rankings The non-weighted criteria most often talked about prior to this paper were

strength of the argument that the commodity sub-system represents significant economic growth possibilities for the region,

likelihood of useful technological breakthroughs in the commodity sub-system,

use of a market sub-sector approach in defining the network's agenda,

degree of network contribution to rationalization of the regional research system,

input of non-traditional partners in definition of research agenda or in technology transfer activities,

human resource capacity of the network's members and quality of the capacity-improvement activities,

degree to which the network uses performance standards and quality criteria to allocate project funds and small grant funds among network members,

degree to which the network promotes technologies that have a positive impact on the environment and contribute to sustainable natural resource use,

logic, clarity, coherence, and realism of work plan and logical framework,

transparency of network governance and management and accountability to members

Short-listed networks will be then invited to submit full proposals written up as long-term four year strategic plans These will be submitted to the competition which might have the grant-award package described below

## 4 2 Grant Award Packages

The following are suggested as grant award packages These propose gradations of levels of support

**Base Support** All winners of the first-round of competition can expect to receive fixed sums of a maximum of X which will cover the bare minimum of support to keep the network functioning Base support might include salaries for one professional staff member and a part-time administrative assistant, the coordinator's communication costs, one annual meeting of relevant network governing/planning bodies, and one meeting of active membership for every three years of funding, all at standardized per-diem and travel costs, plus one annual training activity This base support of a maximum of X for any network includes commitments to a fourth bridging year of support when a new round of proposals is written Base support does not include funds for research projects or network-administered small grants funds

**Support Level 1** At this level, base support will be topped up with a contribution to the network-administered small grants or project fund in the amount of $1000 per year, per researcher-member of the network For example, if a network can legitimately claim 30 members, in a three year proposal they would get a small grants or project fund of $90,000 Level One

funding will include up to $30,000 a year to pay for the costs of non-traditional partners in the network program of research and technology transfer This level of support would be accorded to those networks whose final proposals are judged in competitive merit review as "weak, poor, below average, disappointing, or mediocre in comparison with the others in the competition "

**Support Level 2** At this level, base support will be topped up with a contribution to the network-administered small grants fund in the amount of $3000 per researcher-member plus costs of network workshops, study visits, and courses, and communication programs An additional amount of up to $50,000 over three years would cover the costs incurred by non-traditional partners working with the network This level of support would be accorded networks whose proposals are reviewed as "average, good, acceptable, slightly above average, etc "

**Support Level 3** At this level, base support will be topped up with a contribution to the network-administered small grants fund in the amount of $10,000 per year, per researcher-member, plus costs of network workshops, study visits, communication programs and training courses This level of support will also include up to $100,000 over the three years to defray costs of non-traditional partners working with the network This level of support would be accorded networks whose proposals are reviewed as "excellent, very good, considerably above average, etc "

## 4 3 Suggested Grant Parameters

The following are suggested features of the grants and of the award process

**Duration** Three years, with an additional one-year grant extension subject to acceptable technical and financial reporting and an outside review of network performance conducted at the end of year three

**Eligibility** Any research network in the ASARECA region specializing in agricultural or natural resource management technology development and transfer, regardless of structure or affiliation with ASARECA

**Submission requirements** Eligible networks must announce their intention to compete with a pre-proposal, which will be judged as described above Winners of the first stage must then submit comprehensive strategic plans that describe the entire network's activities and programs Plans must be structured so as to use the headings described in this statement of guidelines Partial proposals for specific network projects will not be considered independently of the overall network

program and strategic plan It is understood that networks may be soliciting funds from other donors so all existing and expected sources of support should be noted in the budget statement Networks are free to add additional elements to their plans not covered in these guidelines Proposals written by external consultants will not be considered, although local technical assistance in developing data and reviewing literature for parts of the proposal can be used

**Disallowed funding** No requests may be made for buildings, vehicles, travel abroad, researcher salaries, or capital equipment not explicitly needed for network research activities

**Planning grants** All eligible networks in the first round of the competition may receive a planning grant of up to $5000 to hold workshops with their members and steering committee and to hire locally available consultants to help them collect data, review literature, and organize argumentation for the parts of the proposals for which they lack competence within the network

**Copies of proposals** Seven paper copies of each proposal must be submitted, and a diskette copy of the proposal must also be included

**Deadlines (Examples)** The deadline for pre-proposals is April 1, 1998 Merit review will take place in mid-April and results announced by April 30 Second round proposals must be received by August 1, 1998 and applicants may request local technical assistance in developing their proposals Merit review will take place in September, 1998 Any revisions suggested by the merit panel must be done by October 31, 1998 Final funding decisions and levels will be announced by November 15, 1998 Contracts will be sent out by November 30 and first payments may be scheduled for Jan 1, 1999

**Proposal format guidelines** Pre-proposals of a maximum of 10 pages in length should use short answers to the questions/headings below Full proposals in the second round will follow the same structure, but more elaborate answers and explanations will be expected Second-stage proposals can be a maximum of 40 pages in length, plus annexes and detailed budgets according to the format given

**Merit review** An international and regional merit review panel of six experts from various fields and one ad-hoc international reviewer with a specialization in the particular field of the network will judge each section of the proposal/strategic plan as Excellent, Very Good, Average, or Poor Each reviewer will make also qualitative comments on the proposals Networks will receive summaries of the reviews in both stages of the competition

## 4 4 Suggested Organization of Proposals

### Brief Overview and Introduction to the Network

History, Size, Organization, Particularities, goals, experience

### The Economic Case for Research on the Commodity Sub-system

Here, networks should make their best argument for the economic importance of their commodity sub-system according to the admittedly weak macro and micro-economic data that is available to them Examples of the questions they might ask themselves in preparing this section are What are the markets for the commodity and its sub-system? What kind of trade takes place with it? what is its relative economic importance in the region? What percentage of GDP does it represent in the region? Does the commodity sub-sector generate employment? What percentage of farmers in each country use the commodity and how do they use it? What is its economic significance of the commodity sub-system to farmers? What is the economic significance of it to consumers or entrepreneurs? Not all of these questions need be answered, and many other similar questions might be addressed in framing an argument Each network will have to make a different kind of argument, tailored to its own commodity sub-system and the state of knowledge about it It is the quality of the overall argument that matters, that is, how well it convinces

### The Likelihood and Location of Technological Breakthroughs

Here each network should weave together a couple of related arguments First, it should lay out for the reader what technologies they have that are "ready-to-go" for users and how they are going to help that adoption along They should also map the frontiers of their fields of endeavor and present arguments about the likelihood of technological breakthroughs in their commodity sub-system Where in the system does the network see the best chances for breakthroughs? In making this case, networks should strive to look also at off-farm uses of the commodity And they should make educated estimates as to how long it will take to make such breakthroughs How economically significant might such breakthroughs be? Who in the client community might be most affected by such technological breakthroughs and what makes the network believe the client community is likely to adopt the breakthrough technology? Best educated guesses on weak data about this may have to be made Note that non-commodity networks can if necessary replace the idea of "technological" breakthrough with the idea of a "policy" or "conceptual" breakthrough in writing up their proposal

## How the Network's Specific Research Priorities and Activities Target Economic Gain and Most Likely Breakthroughs

Here networks should explain in detail their proposed research agenda and activities, and what method was used to develop the research agenda This forms the basis for them to make their best arguments under this heading about how the network is concentrating, targeting, and focusing its limited intellectual resources on economic gain, growth opportunities, and the most likely areas of technological breakthroughs in their commodity sub-system

## Work plan and Logical Framework of Goal, Objectives and Activities

Here the general network goal(s), specific objectives and their corresponding activities should be summarized, along with 1-3 indicators of success per specific objective Milestones of progress should be avoided, rather what should be given are indicators that would show that an objective has been attained Reviewers will be asking questions such as is the number of objectives realistic, given the time frame and human resources available? Do the specific objectives convincingly and realistically contribute to realization of the network's general goal? Are the objectives clearly understood without excessive debate over their meaning, interpretation, or implication? Is the network itself clearly the most suitable agency to realize the objectives and corresponding activity? Does the network have the capacity to act on the stated objectives and long-term general goal? Do the activities clearly correspondent to the objectives? Do the indicators make logical sense as markers of success of that objective? Who will collect the data necessary to keep track of the indicators? Is it realistic to expect accurate data collection of the proposed indicators? Is the monitoring plan feasible?

## Regional Character and Value of the Network

Here networks should explain several related points about how the network is regional in character First, how does the research agenda described fit into ASARECA's regional research priorities? What countries are involved in the commodity sub-system and are likely to be affected by the networks agenda? How exactly does the network contribute to the elimination of regional duplication of research? How does it help countries borrow technologies and knowledge developed in other countries? How is regional cooperation happening inside the network, i e how are the national institutions in each country sharing in the costs of the network and facilitating its work, if at all? How exactly do the international centers help the network, if at all?

**How the Network Facilitates Collaboration with Non-traditional Partners in Technology Development and Transfer**

Here networks need to make their best case on two related points The first is how and where it facilitates collaboration in technology development and transfer with client groups and other new partners such as NGOs, private sector researchers, farmer groups, rural entrepreneurs, university-based researchers, farmer lobbies, agri-business, etc How does the network promote methodologies and protocols among its members to encourage such collaboration? The second point is how the network's agenda for technology development and transfer reflect the input of these non-traditional partners in the commodity sub-system

**The Networks Human Resource Capacity**

Here networks should lay out in detail - using tables - the human resource capacity of the network and how that capacity is strengthened by network activity in two areas training and communication Examples of questions that could be answered to prepare this section are as follows What is the number and profile of the network's individual members? Of their institutional members? What human resources can the network actually muster onto their agenda and goals? (The c v of the network coordinator should be attached ) How exactly does the network intend to increase the analytical skills and competence of its members in the proposed work plan? How exactly does the network improve communication and the flow of information among its members in the present work plan?

**How the Internal Allocation of Network Resources - Project Funds and/or Small Grant Funds - is Based on Performance and Quality**

Here networks should present an argument and explanation as to how exactly their network makes sure that project funds and small grant funds are allocated to reward competence, high standards of performance, and promote use of regional comparative advantage in research Network guidelines for the preparation of network research projects or applications for network administered small grant funds should be annexed How these guidelines are distributed, how networks decide who gets funds and for what, should all be explained in detail Details of network practice with any kind of merit review should be submitted as well Any plans to improve these practices should be described

**The Network's Orientation towards Sustainability of Natural Resources**

Here networks should make an argument about how their specific agenda and activities promote sustainable farming systems and contribute to the healthy long-term management of natural resources

**Governance and Administration of the Network**

Here, networks should provide detailed explanations of how the network is organized and governed What kind of task forces, steering committees and governing bodies exist? Who decides what? Who is on what committee? How does someone or some institution become a member of the network? Who decides priorities and how? How is the coordinator chosen? How exactly does the network organize financial flows in the region and conduct self-evaluation and sponsor external reviews? It is understood that networks have a variety of structures and governing mechanisms What will be judged is the clarity and transparency of the governing and financial mechanisms and how networks are structured to be responsive and accountable to both members and research clients so that members have a strong sense of ownership

**Budget Request (evaluated with work plan and logical framework above)**

Detailed budgets should be provided as illustrated in the next page Each line item should be numbered and a separate page of explanatory notes should be provided These explanatory notes will give the financial basis for calculating the amounts requested for each item number should be provided The reasonableness, detail, and realism of the budget will be reviewed as part of an assessment of the overall work plan and logical framework

Annexes C V s of coordinators, member profiles, excerpts from external evaluations

## *Suggested Format for Budget Presentation*

| ITEM # | ITEM DESCRIPTION | YR 1 | YR 2 | YR 3 | TOTAL | RELATIVE CONTRIBUTIONS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | ICAR REQUESTED | NARs | DONOR A | DONOR B | TOTAL | |
| 1 | COORDINATOR SALARY AND BENEFITS | | | | | | | | | | |
| | COORDINATORS OFFICE COSTS | | | | | | | | | | |
| | COORDINATOR'S TRAVEL COSTS | | | | | | | | | | |
| 2 | NETWORK MEETINGS | | | | | | | | | | |
| | TYPE 1 MEETINGS | | | | | | | | | | |
| | TYPE 2 MEETINGS | | | | | | | | | | |
| | OTHER MEETINGS | | | | | | | | | | |
| 3 | NETWORK COMMUNICATION AND TRAINING | | | | | | | | | | |
| | TRAINING ACTIVITY #1 | | | | | | | | | | |
| | DHL/ELECTRONIC MAIL COSTS | | | | | | | | | | |
| | PUBLICATIONS | | | | | | | | | | |
| 4 | COST OF NETWORK MERIT/PEER REVIEW | | | | | | | | | | |
| 5 | SMALL GRANTS FUND | | | | | | | | | | |
| 6 | PROJECT #1 | | | | | | | | | | |
| | PROJECT #2 | | | | | | | | | | |
| | PROJECT #3 | | | | | | | | | | |
| 7 | COST OF EVALUATION, END OF YR 3 | | | | | | | | | | |
| 8 | TOTAL | | | | | | | | | | |

## RESOURCES CONSULTED

**ASQC** (American Society for Quality) has a useful website at www asqc org Their program document "Transformations to Quality Organizations Program Description" and "Research for the Next Generation of Quality" describes a competitive grants program partially funded by the private sector and outlines existing work funded in previous competitions

**Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA),** "Regional Collaboration in Agricultural Research Development of a Long Term Strategic Plan for Regional Agricultural Research in the Eastern and Central African Region", September, 1997, Entebbe, Uganda

Beattie, Anthony "From Core Grants to Contracts for Performance Lessons from UK Experience", September 3, 1997 Paper available from anthony beattie@dfid gtnet gov uk This is a discussion of how contracting for research is working in U K

**European Commission** "EC-Funded Research and Technology Development An Insight into the Handling of Project Proposals and Introduction to Contract Negotiation" (Brussels, 1994) This is an explanation to the grantee community of how the EC organizes one particular competition and why it takes so long

**Ford Foundation** "Achieving Excellence, Building Trust Innovations in American Government, An Awards Program" 1997, "Request for Proposals Urban Partnership Program"

Fourno, Doug "Competitive Research Grant Systems" Agricultural Technology Notes Newsletter No 9, Agricultural Technology and Services Division, The World Bank, February, 1995

**Grains Research and Development Corporation,** Australia "Information Paper 1997-98"

**International Development Research Centre (IDRC)** Documents consulted from IDRC include

1) Bernard, Anne "IDRC Networks An Ethnographic Perspective" September 1996,

2) "Evaluation of IDRC-Supported Projects at Sokone University of Agriculture, Tanzania" December 1987 IDRC-MR118eR,

3) Terry Smutylo et al , "Origins and Achievements of the Navrongo Health Research Centre", September 1996,

4) Mohan Munasinghe, "Evaluation of the Economy and Environment Program for SE Asia, October 1996",

5) Abe Weisblat and Byrant Kearl's Occasional Paper for Winrock (no date) "Building National Capacity in the Social Sciences Insights from Experience in Asia",

6) C M Breem et al , "External Evaluation of Ford Foundation/IDRC Phase 2 Grant 1991-1994 of Centre for Applied Social Sciences University of Zimbabwe",

7) Anne K Bernard, "The Consortium Graduate School of the Social Sciences The Process of Institution Building" March 1992,

8) Stephen Graham, "An Evaluation of Grant Funding to the Research Programs of the Makalu-Barun Conservation Project of Eastern Nepal",

9) Mutiso and Nkinyangi "Small Research Grants Competition Draft Evaluation Report",

10) Daniel Chudnovsky and Lydia Makhubu, "Evaluation of the African Technology Policy Studies Network", August 1996,

11) "Draft Final Report IITA/ESARRN End of Project Review" January 1992,

12) Juan Antonio Morales, "Report on the Economic Research Consortium, Peru, July 1993",

13) Uli Locher and Ron McGill, "Second and Final Evaluation of the Municipal Development Program for Sub-Saharan Africa" June 1994,

14) "CODESRIA Evaluation Report" August 1985

**International Potato Center (CIP)** Position announcement "Coordinator ASARECA Technology Transfer Project" and "Call for Proposals for the Transfer of Agricultural, Livestock, and Post-Harvest Technologies" 1997, available from cip-nbo@cgnet com

**Internet Conferencing Technologies** The following websites have useful information about the new techniques on the internet that are off-the-shelf and available for use in merit review systems Note these technologies go far beyond the usual on-line community concept

www netscape com/netcenter/vo/index html

www altavista software digital com/forum/products/techview/index html

www opentext com/livelink/otm_11_11 html

www webflow com/products/index html

Kelman, Arthur and Sivramiah Shantharam "Report of the World Bank Study on the Peer Review Grant Program of the Indian Council of Agricultural Research," World Bank, 1995

**Leopold Center for Sustainable Agriculture, Iowa State University** "Guidelines to Peer Reviewers", "Information for FY 1999 Competitive Grant Applicants", "Priority Topics and Program Review"

Martinez, Juan Carlos "Consultant's Report A Proposal for a Competitive Grants Fund for Agricultural Technology Development in Mexico" July 26, 1995, Inter-American Development Bank, Washington DC

**National Research Council** Investing in the National Research Initiative An Update of the Competitive Grants Program in the U S Department of Agriculture National Academy Press Washington DC, 1994

**National Research Initiative (NRI)** Website address is www reeusda gov/nri Documents consulted include National Research Council's report, "Investing in Research A Proposal to Strengthen the Agricultural Food, and Environmental system" (Washington D C , National Academy Press, 1989), U S D A 's 1997 brochure "National Research Initiative Competitive Grants Program", "National Research Initiative Competitive Grants Program Annual Reports 1995 and 1996, and "Program Description Fiscal Year 1998 and Grant Application Guidelines 1998" Dr Sally Rockey, administrator of the NRI is a deep well of information and experience and when not overwhelmed with work is more than willing to share her extensive knowledge (203-401-5022)

**Regional Fund for Agricultural Technology (RFAT)** A useful web site with several documents can be found at www regionalfund org Ruben Echevarria at the Inter-American Bank in Washington made himself available for questions and provided a copy of the lengthy project proposal under discussion for a Mexican Agricultural Research Fund (ME-0192 of the Inter-American Bank) Documents specific to the RFAT that I reviewed are "The Regional Fund for Agricultural Technology A Proposal to Consolidate the Regional System for Technological Innovation" (Washington DC Inter-American Development Bank, March 1996) which provides a justification for the fund's existence, and the "Manual de Operacions" (Augosto, 1996) which gives a good strategic planning overview with by-laws and grant guidelines

**Research Networks in East Africa** Donors and network participants made available to the author many confidential documents, not all of which had accurate dates or clear titles Workplans, program proposals, and strategic plans consulted were "PRAPACE Annual Progress Report for 1996/7 and Proposal for 1997/8" July 1997, "East Africa Root Crop Research Network Technical and Approved Workplans 1998", "West and Central Africa Collaborative Maize Research Network Project Proposals 1994, 1995, 1996 submitted by International Institute of Tropical Agriculture", "Discussion Paper for ECAPAPA Stakeholder's Meeting Establishment of the Eastern and Central Africa Program for Agricultural Policy Analysis (ECAPAPA), 8-10 December in Entebbe, Uganda, "SADC/ICRISAT Work Plans 1996/7, Bulawayo, Zimbabwe", "ASARECA's Regional Research Networks Funding documents and evaluations included "USAID's Grant to Strengthen Agricultural Research Systems in Africa through Collaborative Research Networks 1994", Robert Morris et al , "Draft Report An Evaluation of Regional Research Networks for Cassava, Beans, Agroforestry, Potatoes, and Sweet Potatoes" USAID, Africa Bureau, Washington D C , November 1996, James Sentz, "Draft Report Assessment of Program Impact Analysis of African Research Networks" prepared for USAID AFS/IARC Washington, D C , September 1995, "AFRENA Response to Evaluation of Networks" and "EARNNET Reaction to Draft Evaluation Report" The author also drew upon her own experience in West Africa while with IDRC, during which time she participated in funding negotiations, evaluations, and start-up operations of many agricultural research networks

**Rockefeller Foundation** "Forum on Agricultural Resource Husbandry Call for Proposals, Proposal Guidelines, Program Description 1997-8" available from bpatel@unima wn apc org, Jane Hughes, "Program Evaluation at the Rockefeller Foundation An Overview, December 1990", David Bell and Byran Harrison, "An Evaluation of the Rockefeller Foundation Rice Biotechnology Program" October 1993, and Michael Watts "Capacity through Competition An Evaluation of the African Dissertation Internship Program, April 1993"

**U S National Science Foundation (NSF)** As an independent federal agency it runs what may be will one of the largest competitive grants systems for research in the world Funding is provided for an immense array of subjects and not all funding is for fundamental or theoretical work Their website at www nsf org includes an excellent search engine Documents can be previewed, downloaded, and ordered on line An introduction and review can be found with their "Guide to Programs Fiscal Year 1997 A Compilation of NSF Funding Opportunities" Useful as well is the "Grant Application Kit, 1997 "

**U S Department of Agriculture, Higher Education Programs** "1890 Institution Teaching and Research Capacity Building Program Announcement and Proposal Guidelines and Grant Criteria 1997" and "Interagency Program Announcement 1994 DOE/NSF/USDA Joint Program on Collaborative Research in Plant Biology" which describes a program that financed research networks on a competitive basis

**U S Government Accounting Office (GAO)** GAO has a useful website with a good search engine (www gao gov) Documents can be ordered on-line Several of their publications provide guidance on the management of competitive grant making "Peer Review Reforms Needed to Ensure Fairness in Federal Agency Grant Selection" June 1995 GAO/PEMD-94-1 provide an excellent literature review and bibliography on peer review as well as detailed comparisons of practices in federal agencies "GAO/RCED-94-95 "National Science Foundation Better Use of Existing Resources Could Improve Program Administration, 1995" provides detailed discussion of staff productivity and work load in grant management Also a good discussion of how peer review has emerged historically can be found in GAO/RECE-87-87FS "Information on the Role of Peer Review at NSF and NIH"

Uffen, Robert "Consultancy Report to Ecuador Agricultural Services Project Preparation for the Competitive Research Grants Component" November 1995 This is a very nice report covering the basics

West, D W "Competitive Grants System of Funding to Support Agricultural Research in Pakistan," Paper produced for the Pakistan Agricultural Research Council by Hunting Technical Services U K , May 1996 This is a very nice overview of how to set up a competitive grants system with applications for Pakistan It includes some useful suggested forms that an inexperienced grant management unit might use as they learn the basics of grant administration