EXTERNAL EVALUATION PANEL

REPORT FY 2001

BEAN/COWPEA COLLABORATIVE

RESEARCH SUPPORT PROGRAM

May 2002

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THE BEAN/COWPEA COLLABORATIVE RESEARCH SUPPORT PROGRAM (CRSP)

An international community of persons, institutions, agencies and governments committed to collectively strengthening health and nutrition in developing countries by improving the availability and utilization of beans and cowpeas.

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INTRODUCTION

This report of the External Evaluation Panel (EEP) of the Bean/Cowpea Collaborative Research Support Program (CRSP) is a product of a meeting at the Management Office (MO), January 20-23, 2002 at Michigan State University, East Lansing, Michigan. Participants in this meeting included John Stovall (Chair), Carolyn Brooks, Carlos Magno Campos da Rocha, Lowell Satterlee, and Jiryis Oweis, the United States Agency for International Development (USAID) Cognizant Technical Officer (CTO), along with the MO staff.

The purpose of the meeting, the first since January 2001, was to:

(1) review and evaluate progress in the three regional projects as reflected in the most recent Annual Report,
(2) review proposed plans for the next five-year grant period,
(3) discuss and advise on management issues of concern to the MO and
(4) reexamine the role and function of the EEP and suggest modifications for the future.

Unlike other meetings of the EEP, no in-depth evaluation was deemed appropriate as the CRSP is in transition and undergoing change. A proposal for the next five-year grant is under consideration, having been reviewed by the Strategic Partnership for Agriculture Research and Education (SPARE) in November 2001 and favorably reported to the Board of Food and Agricultural Development (BIFAD). While the overall aims of the Bean/Cowpea CRSP remain the same, several important changes in program foci, activities and participating United States (U.S.) and Host Country (HC) scientists and institutions will be implemented at the start of the new grant (FY 2002 07).

This transition period provided an opportunity for the EEP to critique its own role and suggest changes that will make it more effective in the next phase.

The EEP gave special recognition to Dr. Lowell Satterlee, who will be rotating off the EEP before the next meeting. Dr. Satterlee s judgment, knowledge and scientific expertise in food science will be greatly missed.

THE ROLE OF THE EEP IN CONCEPT AND PRACTICE

Background of the EEP

One of the first undertakings of BIFAD, after being established and organized in the 1970s, was to design and operationalize the CRSPs. The role of the EEP was an integral component of the CRSPs in the original design of this collaborative research mechanism. The EEP was believed by BIFAD to be an essential element for the long-term viability of the CRSPs for at least two reasons: (1) to help ensure its long-term scientific integrity and (2) provide some degree of assurance to donors and critics that there was a built in mechanism for independent and continuous evaluation.

The CRSP Guidelines were developed by BIFAD and USAID to provide operating instructions and guidelines. They were adopted as a part of the official procurement regulations. The CRSP Guidelines spell out the role of the EEP and how it is to be organized and function. Although the CRSP Guidelines have been revised several times over the years, including most recently in 2000, the basic role and functions of the EEP are largely unchanged from the early days of the CRSPs.

The main functions and activities of the EEP established in the CRSP Guidelines include:

Overall function: to evaluate the status, funding, progress, plans and prospects of the research program. (p. 11).

Continuous review and evaluation: Evaluations should be scheduled over a five-year period with an annual evaluation at varying depths. (p. 11).

Performance and productivity: The EEP must play a strong role in judging the balance of a CRSP and relevance of each project to the program goals. It should evaluate the performance and productivity of each institution on each project annually, and assess the appropriateness of projected resource allocations. (p. 11).

Continuous interaction: Panel members should be invited to attend important meetings of the PIs and CRSP organizations in order to keep abreast of progress and be familiar with problems and issues. . . . . There also should be adequate opportunities for interaction of the TC [Technical Committee] and Board with the EEP. (p. 12).

In summary, the EEP is expected to:

Track scientific progress and compare it to research objectives and goals
Assess the application of the science and impact on target countries
Review and assess U.S. institutional commitment
Advise the MO on the management of the program

Administrative Management Review Recommendations and the Miller/Rubin Report

Two recent reports have raised questions about the role of the EEPs in general and the Bean/Cowpea CRSP EEP in particular. In a draft report submitted to USAID in September 2001, entitled Making Good Programs More Effective, Ray Miller and Deborah Rubin (both also members of the Bean/Cowpea CRSP Administrative Management Review (AMR) team) put forth a number of lessons learned.

The lessons learned report includes specific observations and recommendations concerning the EEP. The authors recommended that the activities of the EEP be scaled back to reduce the level of overhead costs. Specifically, they concluded, The EEP should not be conducting yearly evaluations. Instead, they suggest that an expanded TC should perform this annual evaluative function. Budget savings appear to be the underlying motivation for this recommended change.

After reviewing several reports from various CRSPs, the authors concluded that the most effective EEPs were those that applied a wide range of disciplinary perspectives, formed their own conclusions and provided clear evidence for their recommendations, taking into account

the program s goals, the larger environment and priorities of host countries. The least effective were those that "reprocessed annual reports and added little of their own impressions or analysis."

The AMR draft report (November 1, 2001) had essentially these same conclusions and recommendations for the Bean/Cowpea CRSP: In conclusion, the AMR team questions the need for such frequent and extensive EEP reviews. If the TC is doing its job in evaluating workplans, and the MO, CTO and BOD [Board of Directors] are providing appropriate oversight, there should be sufficient oversight on a yearly basis. The site visits and report writing should be limited to once during a five-year period. The AMR team recommended that the EEP carry out one in-depth review of Bean/Cowpea CRSP research activities during a five-year period.

Bean/Cowpea CRSP EEP Response

The Bean/Cowpea CRSP EEP considers it timely and appropriate to reexamine its role and welcomes the opportunity to respond to the issues raised by the AMR team as well as the recommendations in the "lessons learned" draft.

In preparation for this reexamination of the EEP role, an informal survey was conducted by John Stovall in advance of the January 2002 meeting to understand how the EEPs of other CRSPs functioned and to learn from their experiences. The information was gleaned from interviews with representatives of each of the other eight CRSPs who were asked to respond to a number of issues, including:

Overall role of the EEP
Respondent's views about value of advice
Composition of EEP and appointment process
Frequency of meetings
Reports and their nature
Interaction of the EEP with other CRSP entities such as the TC and the BOD
Site visits and frequency
Compensation and budget for the EEP

The CRSP representatives interviewed included persons with a variety of responsibilities, including USAID CTOs, CRSP Directors, and chairpersons or members of the EEPs. Although this "non-scientific" selection of persons interviewed did not constitute a statistical sample, it did provide varied perspectives that added richness to the information on which our discussion was based. None of the phone conversations were recorded and all information gleaned remains anonymous.[1]

[1]Somewhat aside, one of the surprising discoveries in this informal survey was that this apparently was the first attempt to gather information about how the EEP functions in practice and how the role differs among the nine CRSPs.

Survey Findings

All of the CRSPs have an EEP and generally follow the CRSP guidelines but each EEP functions somewhat differently. Thus, there are commonalities and differences.

Commonalities of nearly all of the EEPs:

- Meet or report at least once per year
- Make site visits, generally visiting each U.S. and HC site during a five-year cycle
- Have an essential role and make a positive contribution to the CRSP
- Have regular or frequent interactions with the TC, Principal Investigators (PIs) and sometimes with the BOD
- Have more intensive activity during years 3-4 of the 5-year cycle
- Attempt to have a range of disciplines and an international flavor among membership

Differences were noted with respect to:

- Extent to which the Management Entity (ME)/MO relies on the EEP for advice
- Perceived strength of the EEP
- Activities of the EEP over a five-year cycle
- Amount budgeted for EEP activities ($50k/year appeared normal)
- Degree of interaction with CRSP entities such as the TC and BOD
- Appointment procedures, terms of service, compensation, etc.

Implications for the Bean/Cowpea CRSP EEP

One of the implications of this review, contrary to the AMR report, is that it is important for the the Bean/Cowpea CRSP EEP to have sufficient opportunity for interaction with U.S. and HC PIs to be able to make meaningful assessments of the regional research and training projects and its management. In order to be in a position to give sound and useful advice to the Management Office, members of the EEP need to understand what the components are trying to accomplish, appreciate the constraints under which researchers work, have a general knowledge of networking activities and be able to track progress over time.

To achieve these objectives, the Bean/Cowpea CRSP EEP should have opportunity to:

- Gain first-hand knowledge of the research activities of the PIs
- Interact more with the TC and PIs
- Be informed on a regular basis of research progress
- Utilize site visits to better understand the program

Some specific recommendations on the role of the Bean/Cowpea CRSP EEP during the next five-year cycle are offered:

- The MO, in consultation with the EEP, should develop an activity plan of work for the next five years that includes a scope of work, a schedule of site visits, and reports to be issued.
- Activities should be planned in such a way that the EEP accumulates a knowledge base that can be drawn upon to make a more in-depth evaluation in year four.

The MO, in collaboration with the EEP and the TC, should identify a few special issues that the EEP should address during the course of the five-year grant cycle.

In order to make the best use of the expertise in the EEP, some degree of specialization should be worked out and incorporated into the scope of work. For example, a member with extensive experience in Latin America with disciplinary expertise in a particular area (i.e., biotechnology, plant breeding, pest management, food science, socio-economics, etc.) would be asked to take leadership for the review of the LAC regional project as well as specific research activities which relate to their specific expertise. To further illustrate, the EEP member who happens to have a background in Post Harvest Technology (PHT) would be asked to take special responsibility of reviewing the regional project in LAC and assessing the PHT work globally.

In summary, our reexamination of the mandate to the EEP and critique of what we need to do to fulfill that mandate leads in the opposite direction from that recommended by the AMR report, i.e., the EEP should become more active, not less. The proposed budget for the EEP in the next grant (FY 2002 07), about 1.5% of the total CRSP budget, appears to be well within norms for expenditures for evaluation and should be sufficient for the EEP to do its job.

PROGRESS IN REGIONAL PROJECTS

The MO requested that the EEP review the FY 2001 Annual Regional Project Report and make an assessment of technical progress since the 1997-2001 Five-Year Technical Review of the Bean/Cowpea CRSP by the EEP. The procedure adopted was to assign a member of the EEP to review and critique each regional project using a set of evaluation criteria provided by the MO. During the meeting, the responsible member led a discussion of progress, problems and shortcomings. Based on this discussion, a consensus evaluation was prepared.

West Africa

The project in West Africa continues to show excellent progress and the quality of the research conducted by the U.S. and HC scientists are of high scientific standard.

During the past year, CRSP scientists together with other collaborators contributed to an updated version of the original CRSP cowpea genetic linkage map. The updated map has a total of more than 400 AFLP, RFLP (restriction fragment length polymorphism) and RAPD (random duplicated polymorphic DNA) markers. Progress is being made toward utilizing this marker-assisted technology in West Africa. No progress was reported on the laboratory work to develop a genetic transformation system for cowpea. A new cowpea variety (ISRA-819) has been developed by ISRA (Institut Sénégalais de Recherches Agricoles) in Senegal. In California, promising lines have resistance to *Fusarium*, root-knot nematodes, heat tolerance at flowering, and chilling tolerance at emergence.

It was reported that genes conferring heat tolerance at the reproductive stage are effective in hot subtropical conditions in California, but apparently not under the high temperature regions in the Sahel of Senegal. Progress is being made toward the development of cowpea germplasm with resistance to lygus bug, the major cowpea insect pest, and in developing

cowpea lines with recovery resistance to the cowpea aphid, the second most important insect pest of cowpea in California.

Participatory varietal selection studies in Ghana demonstrated that for cowpea traits, farmers most value yield potential followed by maturity period. This is a very important finding that must be considered in the cowpea breeding program in future initiatives. Farmers and consumers preferences must always be borne in mind, especially regarding the cowpea sweet trait originally identified in Cameroon. Despite the scientific novelty, it could be of little importance to cowpea producers and consumers, in particular to the hungry poor people in West African countries.

Regarding neem, it appears that this botanical insecticide continues to have promise. There is no doubt that neem or other botanicals, such as *Hyptis spicigera,* could be used as an alternative to chemical insecticides. The abundance of neem trees in West Africa and the voluminous literature on the efficacy of neem against insect pests are important issues to be considered in redirecting integrated pest management (IPM) research in the future. Year after year in the Bean/Cowpea CRSP annual progress report, results are presented on the efficiency of neem application in laboratory conditions. However, when experiments are conducted under field conditions, the results cannot be validated.

A suggestion by the EEP is to suspend support for laboratory research and to encourage the IPM research teams to work on technological development of neem-derived products. The main challenge is to find standardized methods for extraction, formulation and application of neem in West Africa that farmers would be willing to use as a sound technology.

Food science teams carried out detailed analyses of several new cowpea cultivars of Ghanaian or IITA (International Institute of Tropical Agriculture) origin. Most cultivars had roughly similar levels of crude protein, fat, ash, tannins, and carbohydrate; but differed in the following ways. Interestingly, the cultivar Emosue contained relatively high levels of flatulence-causing stachyose and raffinose. It was reported that cowpea-based weaning foods can be stored at ambient temperatures for long periods of time and that Akara, a cowpea paste deep fried in oil with about 32 percent fat, could be developed for the American market with a lower fat content.

The regional economics team continued its price and quality studies in Cameroon, Ghana and Senegal and expanded the work to include markets in Nigeria, Niger and Mali. Understanding of cowpea grain types in markets and of the factors that affect the value of the grain are keys that breeders can use to focus their efforts on crop improvement. Moreover, to guide research and extension, it is important to understand the structure of cowpea markets, and constraints to these markets, trade and demand for cowpea. Trade and marketing-related studies were reported this year in Cameroon, Gabon, Mauritania, Nigeria, Niger and Senegal.

The West Africa regional project has beneficially impacted farmers and consumers through the release of new cowpea varieties in Senegal, Cameroon, Ghana and Sudan. An InterCRSP project managed by World Vision International has been extending these cowpea varieties to other African countries.

It would be wise to have more detailed information not only on the agronomic requirements of new varieties, but also on quantitative benefits derived by U.S. farmers and resource-limited

farmers in West Africa. Research funding continuity is highly dependent on research data being understood by decision-makers. Important questions need to be asked, such as, What are the benefit/cost ratios? Who is benefitting from the released technology? Such simple questions are always on the minds of decision-makers, planners and politicians all over the world. Nowadays, the research program must be presented as a house of solutions.

The project in West Africa continues to show excellent collaboration and cooperation among the African scientists with their U.S. counterparts. A good example that deserves commendation is the NGICA (Network for the Genetic Improvement of Cowpea for Africa) community, which grew out of the Dakar meeting. This is a real embodiment of an international, multidisciplinary effort to bring the tools of biotechnology to bear on the genetic improvement of cowpea. Above all, this type of initiative makes the top cowpea research leaders to take a more systems approach to agriculture research rather than focusing on their own discipline capabilities. CRSP scientists are still working bilaterally, even though they have established some new interactions, consistent with a regional approach.

A good example of interaction and collaboration in the region is the Ghanaian work on transfer of technical information from research to farmers and extension workers. Ghana has served as a center the development of farmer field schools and collaboration/cooperation on the compositional analysis of varieties.

The West Africa regional project reports interactions between CRSP scientists and personnel from IITA, CERAAS (Centre d Etudes Régional pour l Amélioration de l Adaptation à la Sécheresse), FAO (Food and Agriculture Organization), CSIRO, Rockefeller Foundation, PROMONO, SAILD (Service d Appui aux Initiatives Local de Développment), GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit), USDA (U.S. Department of Agriculture) Vegetable Laboratory (Charleston, SC), PRONAF, INRAN (Institut National de Recherchés Agronomiques de Niger) and WVI (World Vision International) on projects related to cowpea variety development, seed production and distribution, as well as training.

Six Ph.D. students are continuing in training. Five of them plan to complete their degree requirements during 2002. One student plans to finish in December 2003. Another student has been proposed for degree training. All degree programs show a good gender balance (four males and three females). These students are being trained in several strategic disciplines: Food Science (2), Agricultural Economics (2), Entomology (1), Agronomy (1), and Plant Physiology/Genetics (1).

Non-formal educational methods are being used to train farmers and Agricultural Extension Officers in Farmer Field Schools (FFS) and Training of Trainers (TOT). A total of 238 people participated in those activities. Researchers, extensionists, NGOs (non-governmental organizations) and farmers participated in activities in the field to help them understand the process of IPM. Emphasis is always given on packages of technology. The TOT/FFS approach has now been expanded to Cameroon and it should be expanded into other major cowpea production areas of West Africa.

The West Africa research team has leveraged funds from the following agencies and groups:

1. Rockefeller Foundation ($40,000), Anonymous Donor ($23,000) and contributions in kind (covering travel costs of participants) by FAO and IITA for the Dakar Cowpea Meeting;
2. Purdue scientists received $36,295 as part of the InterCRSP East Group project entitled, Restoration and Maintenance of Degraded Range and Farmlands for Increased Productivity in the Sudano-Sahelian Zones of West and Central Africa ;
3. University of California-Riverside received grants providing $15,500 and $15,000 of direct cost funding from the California Dry Bean Advisory Board for research on Blackeye Varietal Improvement ;
4. University of Georgia students and technical staff, who were supported on other funds, made regular contributions to this CRSP project; the amount was not reported.

The reported leverage of funds represents 18.5% of FY 01 CRSP funds for the West Africa regional project.

The West Africa research team published 11 refereed scientific publications, 2 non-refereed publications and made 11 scientific presentations. Two scientists of this team received special recognition/awards for their contribution on cowpea research. The EEP recognizes that the West Africa regional project team has outstanding scientific capabilities, however, this is not reflected in the number of publications or scholarly activities.

East Africa

The East Africa project has demonstrated annual improvements in achieving commendable scientific results over the last four years of CRSP funding. However, the region has continued to experience difficulties because of in-country infrastructure deficiencies/problems (i.e., electricity outages, low cash-flow). This year the difficulties included the loss of Dr. Mercy Ngwira and the loss of the CRSP truck because of a major vehicular accident.

Even though explanations can be given for not being on schedule, those who approve funding for the East Africa Bean/Cowpea CRSP will begin/have begun to doubt if the funds will ever have the impacts promised. Performance, not need, is the primary basis for evaluation by USAID. As has been recommended in the past, there should possibly be less activities (a few select initiatives) for which the scientists can claim success and thus, appear worthy of continued investments. The U.S. and the HC leadership must live up to their responsibility of fostering and ensuring productivity. Strong management, including difficult decision-making, better oversight, and problem-solving are expectations of the East Africa regional project leadership. The regional group should also come to realistic decisions when formulating the next budget. The recurring constraints and the characteristics of the regional research domain must first be recognized. Then, the levels of funding should be determined so that viable and sustainable research activities are established in East Africa. Within reason, the budget should also reflect capacity building needs.

Research Achievements/Progress/Status

The bruchid resistant work continues, but in response to a recent publication indicating that arcelins may not confer bruchid resistance, new arcelin-related resistance studies are underway in Oregon in addition to the backcrossing project. Oregon s final bean selections, based on the arcelin screen and the arcelin + phaseolin lines, will be sent to Sokoine University of Agriculture (SUA) for screening studies that would result in a release of an *Acanthoscledies* resistant variety. Variety development continues; it is the highest funded research activity. Commendably, variety development is influenced by preferences, needs and practices of farmers and consumers. While lines of preferred seed types that show good disease resistance are frequently mentioned, Rojo, SUA 90, Kalima and Nasaka are still the prevalent varieties being disseminated. Thus, few new varieties are emerging from the East Africa Regional Project in spite of years of investment in variety development.

Information on the genetics of bean breeding lines is being contributed to a CRSP database. PCR (polymerase chain reaction) is an efficient and effective tool for marker-assisted selection by breeders and much of the information gained on host-pathogen interactions can be used to influence breeders choices of parents when breeding for resistance. It is useful to know if the CBB (common bacterial blight) primers detected all of the African strains, and also whether microsatellites as genetic markers were not working because of the high variability in Andrean and MesoAmerican lines. There is still no evidence that any PCR work at Malawi is underway.

For regional impacts to be gained, technology transfer is essential. For this reporting period, 41 professional workers were trained in IPM cultural practices and can now influence farmers to improve production practices for beans. In terms of impact in the Tanga region of Tanzania, Rojo was sold at 500-600 Tshs/kg this season compared to 200-300 Tshs/kg for other bean varieties. The Malawi breeder noted that an increased number of farmers planted the varieties of Kalima and Nasaka during the 2000-01 growing season.

Insufficient access to improved seed remains a major constraint. The dissemination schemes presently tried are ineffective. Currently, the amount of seed produced by farmers is too small to determine marketing issues. Two smallholder seed multiplication schemes have been implemented. The first scheme was supported primarily by the government and was commercially oriented. It only reached 11 farmers. The second scheme resulted in seed supplies to smallholder farmers, contributing seed to about 5,000-6,000 farmers. The first scheme produced certified seed and the second scheme produced seed without following the prescribed practices. NGOs in Malawi (ActionAid and Concern Universal) are still playing a major role in seed multiplication and the CRSP is the primary seed supplier. In Tanzania, 1,800 kg of Rojo and 523 kg of SUA 90 were produced; seeds of 7 nematode resistant advanced lines were multiplied to produce 5-10 kg per line; seeds of 27 drought resistant lines were also increased (4.5-10kg per line) along with 4-5 kg per line of arcelin-containing lines. Selian Agriculture Research Institute and Uyole Agriculture Center lines were also multiplied. Research findings indicate that small-scale farmers in Tanzania are not storing seed of improved CRSP varieties to plant during the next season. Instead, they market their grain, which limits the availability of seed for planting and the dissemination to other districts. Therefore, medium-scale farmers will now be targeted. In Malawi, the NGOs target their programs to women farmers since the women-headed households are more highly represented

among the small-scale resource-poor farmer category. The smallholder seed farmers being trained in Malawi in seed multiplication are mostly women.

Fast cooking lines adapted to a wide variety of water types have been identified and therefore should be marketed accordingly.

Collaborations

Other than joint planning and implementation of the 2001 East Africa Regional Bean Workshop, it is not clear in this report that the various units are working better as a team. Efforts to extend CRSP partnership to include other countries in the region (i.e., Mozambique, Uganda) is also minimal. There is, however, strong evidence that a regional focus is being maintained. The January 2001 workshop was attended by SUA and Bunda researchers, the U.S. collaborators, three Tanzanian NGOs and two Malawian NGOs, Tanzania and Malawi National Program bean breeders, CIAT (Centro Internacional de Agricultura Tropical) representatives and a potential collaborator from Mozambique. To institutionalize and coordinate the bean nurseries in the region, the yield trials were coordinated through the Southern African Bean Research Network (SABRN). The Tanzanian National Drought Nursery included material from Tanzania, Uganda and the Malawi National Programs. The Malawi drought nursery was grown in three locations with materials from the Malawi National Program, the CRSP Latin America and Carribean (LAC) regional project, CIAT, Tanzania, RSA, Southern African Zonal Bean Evaluation Nursery (SAZBEN) and Southern Africa Regional Bean Yield Trial (SAZBYT). In the varietal development activities, trial materials were used from the Selian Agriculture Research Institute (SARI) and Uyole Agriculture Research Institutes (UARI). Malawian advanced bean yield nurseries contained varieties from the African Bean Yield and Adaptation Nursery (AFBYAN), SAZBYT and SAZBEN.

FAO and the Tanzanian Ministry of Agriculture used the SUA PCR lab to conduct a short course attended by 16 participants. Mabagala was invited to represent SUA in the National Biotechnology Stakeholders Workshop. This event was organized by the Commission for Science and Technology and the Office of the Vice President. The Ministry of Agriculture and Food Security use SUA facilities to train phytosanitary inspectors and quarantine officers to strengthen phytosanitary services in the country. Thus, the Bean/Cowpea CRSP is involved in the development and utilization of biotechnology in Tanzania.

Extension officers in the villages are collaborating with CRSP scientists by advising farmers, visiting farm plots and creating awareness of the new bean varieties and their superior qualities. New potential seed producers are primary and secondary school teachers, and one teacher s training college in Tanzania. All received and were impressed with SUA 90 and Rojo seeds.

The Farmer Field School approach used by the CRSP in Ghana has been adopted as a model for the East Africa Regional Project. Four extension field staff from Malawi have now been trained in Ghana.

Training

The EEP has serious concerns about the meager requests for investment in human capital development in East Africa. The CRSP takes pride in its investments in training which have resulted in long lasting impacts. Since 1997, the LAC and the West Africa regional projects have trained 93 students compared to only 12 for the East Africa regional project. A limited cadre of expertise in several academic disciplines is clearly recognized as this region s major constraint. In the 2001 report only two students were in training, one in rural development in Malawi for a masters degree and the other is training at MSU in community nutrition. This region s critical mass of scientists needs to be bolstered and more funding should be provided to do so, otherwise not only research capacity building, but institutional and regional capacity building will be short-lived. It was noted, however, that the overall budget for the East Africa Regional Project is substantially less than that of the other two regional projects, explaining in part the relatively low training output.

Leverage Funding and Scholarship

The virus detection program at the University of California-Davis has been widely acclaimed in California. Consequently, the California Crop Improvement Association (CCIA) partially funds their program ($8,000) and utilizes their lab as the center for its virus detection program. The Menomin Seed Company contributed $5,000 for management of CBB on red kidney beans. Also, $50,000 was received from the Oregon Processed Vegetable Commission for green bean breeding and $5,000 from the National Plant Germplasm System to screen for white mold resistance. Such leverage funding attests to the success of the project in benefitting U.S. bean production. DANIDA provided funding ($7,000) for the printing of the Tanzanian technical bulletin on bacterial diseases in beans. These are all very commendable efforts in acquiring leverage funding but as is obvious, the needs of the HC far exceed the funding available from the CRSP. It is hoped that the CRSP will continue to be considered as a worthy investment for other contributors. It is recommended that the U.S. scientists in particular seek funding from other federal granting agencies, i.e., USDA, National Science Foundation, etc. Mission buy-ins and foundation support should also be sought to fund training.

There has been evidence of scholarship and professional recognition for this group of scientists, but as the scientific community utilizes publications and presentations as indicators of high scientific accomplishment, the EEP will look forward to more of such outputs from both the U.S. and HC scientists. The researchers published 6 refereed articles, 12 non-refereed articles and made 6 presentations in this reporting period. Brochures were produced for dissemination by extension staff. Papers from the January workshop were posted on the East Africa Regional Project website and a proceeding is expected this year. Robert Mabagala is now a Founding Member of the Tanzanian Association of Phytopathologists and appointed Senior Editor of the association s newsletter and member of its Executive Committee. Susan Nchimbi-Msolla was promoted to Associate Professor at SUA in 2001.

Latin America and the Caribbean (LAC)

The Latin America/Caribbean regional project continues to show excellent technical quality in its research efforts. The quality of research has been high over the past five years. This excellence is evidenced in the development of dry bean varieties adapted to the many climatic conditions that exist throughout this region. The development of new varieties has been

accomplished using traditional breeding techniques, but has also taken advantage of the use of genetic markers to facilitate the introduction of new genes. Ongoing efforts within this CRSP project to transform the bean plant, thus allowing the insertion of select genes, i.e., BCMV, have been largely unsuccessful to-date. The success of the Brazilian Empresa Brasileira de Pesquisa Agropecuaria (EMBRAPA) Rice and Bean Research Center to transform the bean plant, has been transferred to the laboratories of the University of Wisconsin, thereby greatly expanding future opportunities for CRSP scientists. Maxwell s lab is thought to be on target to transform bean for BCMV resistance by the end of the current grant in 2002.

Much of the technical success of the LAC regional project can be attributed to the strong integration and collaboration between scientists within the U.S. and the HCs. The scientists have focused their research and outreach programs on the priority needs of bean farmers within the LAC region and across the U.S., e.g. the development of heat and drought resistant varieties that allow farmers in areas of lower rainfall to grow beans successfully. It is also commendable that the drought nursery was sent to the East Africa regional team for testing in Malawi. Another factor that has led to the research and development success of new varieties in the region has been the partnering of CRSP HC and U.S. scientists with various non-CRSP groups for variety testing, seed production and seed dissemination. Some of these partners include: CIAT, USAID (Honduras), CURLA (a Honduran university in La Ceiba), non-CRSP scientists at the University of Nebraska-Lincoln, PROFRIJOL and VICARIBE. National Bean Researchers, NGOs and LAC university personnel collaborated with CRSP scientists on the field trials for new varieties.

CRSP scientists have begun to evaluate variety adoption and the impact of new bean varieties on production in specific areas in the LAC region. Economic analysis has shown that the new varieties significantly increase the income of farmers ($60/farmer). This important data can be used to help convince farmers to raise beans as both a source of food for the family as well as a cash crop. Such detailed impact studies are needed for other areas of ongoing research, e.g., the adoption of new bean varieties in other countries across the LAC region, the commercialization of bean-based snack foods, nutritional information to increase bean consumption in Costa Rica, and the use of bean-based weaning foods throughout the region.

This regional project has a history of commitment to the training of young scientists at both the undergraduate and graduate levels. The education of HC students and their return to their home countries has strengthened the LAC institutions and sustained research programs across the region. In 2001, this regional project had 17 students (5 Ph.D., 3 M.S. and 9 B.S.) complete degrees in areas across production agriculture and in the food sciences. The scientists in the project were also active in non-degree training of farmers, extension personnel and NGOs in the HCs. In addition, a key scientific journal (Field Science) will be devoting one entire issue in 2002-03 to describing the plant science research that has been completed since the inception of this CRSP. Additional outputs of the ongoing research and outreach efforts of scientists in this regional project have been the publication in 2001 of 34 refereed scientific journal articles, 38 non-refereed publications, 40 scientific presentations in the U.S. and across the LAC. Nine CRSP sponsored scientists were recognized by either their professional societies, local or federal governments, and/or grower groups for excellence in research to develop and adapt new bean varieties to the LAC region and the U.S. A final form of recognition has been the success of CRSP scientists in procuring additional funding from outside the CRSP. Scientists working within this regional project brought in over one half

million in additional grant dollars to aid research in genetic improvement of dry bean and to enhance dry bean consumption in the LAC.

RESPONSE TO PREVIOUS EEP RECOMMENDATIONS

During the January 2001 EEP meeting, it was noted that the MO had made no written response to the previous EEP report, as had been the practice in earlier years. The EEP requested that the MO make a written response to EEP recommendations in the future.

The EEP is pleased that the MO took this request seriously. A detailed written response to the recommendations contained in the January 2001 EEP report was approved by the BOD and attached to the proposal for the next phase (2002-07). In addition to the response to the EEP recommendations, the MO produced an Annual Report of the Management Office in which it detailed the many actions taken during the year including some of those suggested by the EEP. The EEP commends the MO for being so responsive especially given the extraordinarily busy year.

The MO responded to all of the EEP recommendations quite positively, although not all of them have as yet been implemented. This is understandable because of the heavy workload imposed upon the MO by the extension process. The EEP will follow progress during the next year as these plans are implemented.

ISSUES RAISED BY THE MO RELATIVE TO THE IMPLEMENTATION AND MANAGEMENT OF THE CRSP IN THE NEXT PHASE

Regional Project Composition and Implementation under Budget-limiting Conditions

The MO asked the EEP for advice on how to respond if the USAID grant provides less funds than anticipated in the grant proposal. Individual members of the EEP offered informal advice and comments but the EEP made no formal recommendation. Two common themes running through the comments were: 1) PIs and project leaders should be given an opportunity to prioritize research activities and components within their respective region in such a way that lower priority work could be identified and not funded if budget reductions became necessary; and 2) Across the board cuts should be avoided. The EEP agreed to review and rate proposed component five-year workplans in the event that reductions are required and if the MO deems it useful to do so.

Enhancing Institutional Capacity and a Comprehensive Training Plan

The MO shared ideas on how to respond to an AMR recommendation that a global training plan be developed for the Bean/Cowpea CRSP, and on the implementation of cross-cutting activities. The MO shared their thinking about approaches to these issues and received informal comments from members of the EEP.

The recommendation for a global training plan came from the AMR team. The EEP discussed the value of such a plan but proposed that training needs and approaches would be better defined in a regional context.

The training plans contained in the extension proposal are the product of expressed needs and priorities within each component. It is questionable whether global plans generated by any other process would be superior. On the other hand, there are good reasons for looking carefully across the board at the training component of the CRSP: expenditures for training, balance among disciplines, equality among regions and whether global training needs are being met. Although the EEP generally felt that the MO had given sufficient attention to its training plans and should not undertake a more elaborate process, EEP members did suggest a closer examination of training needs across regions to see if current plans reflect the relative needs of each region.

The EEP also discussed and gave informal feedback on responses to SPARE concerning post-degree training and AMR recommendations about the integration of social sciences and gender issues.

Extending CRSP Knowledge and Outputs

The MO shared some of their ideas for doing a better job of extending knowledge beyond the research community and for improving efforts related to extension and technology transfer. This is a challenge that all CRSPs face and the EEP applauds the MO for seeking ways to better meet these challenges. Although the CRSP is primarily a research activity, the research achievements and technological outputs will have little value unless farmers, marketers or processors use them.

The EEP would like to be helpful to the Bean/Cowpea CRSP in any way it can to improve its performance in technology transfer and knowledge extension.

Management and Fiscal Issues in the Next Phase

The MO discussed a number of management and fiscal issues with the EEP, some of which were cited in the AMR report. The MO, which is making a good faith effort to streamline procedures and reduce the administrative burden, invited the EEP to offer informal comments and advice on how best to respond to these challenges. Individual members of the EEP offered their comments but no formal recommendations were made.

One of these issues related to the fact that the MO makes two funding allocations each year--one for 7 months and a second for 5 months. The AMR report questioned the need for more than one allocation each year. Although this does clearly increase the reporting burden and the reasons may not be well understood, the MO believes, after an examination of alternatives, that the twice-a-year allocation is necessary for fiscal management and is the most efficient way of collecting the information it needs. The MO clearly needs to do a better job of articulating the reasons for this procedure to project leaders and PIs.

The MO has also been reexamining the fiscal reporting forms used to collect data from sub-granting institutions with the aim of simplifying reporting. The AMR report questioned the need for a 12 column form instead of a 5 column form. The MO s analysis concluded that the 12-column form was the most efficient format, given that it could be filled in using an Excel spreadsheet.

BEAN/COWPEA CRSP FY 2001 EXTERNAL EVALUATION PANEL

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