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EASTERN AFRICA BEAN RESEARCH NETWORK

(EABRN)

ANNUAL REPORT

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ANNUAL REPORT, 1994-1995

This report summarizes activities carried out by national agricultural research programs (NARS) and/or by CIAT, often in collaboration with extension and development agencies, and catalyzed by the Eastern Africa Bean Research Network (EABRN).

The report is organized so as to demonstrate the direct relationship between EABRN's annual workplan, which is developed by a Steering Committee comprising representatives of NARS and of CIAT, and the outputs. The Network's objectives and planning framework are given in the Minutes of Steering Committee meetings. More detailed information on research results is available from the Network Coordinator, from national research reports, from publications listed in this report, and from CIAT's Bean Program Annual Report. The Regional Database on network events, partly reproduced here as an Appendix, gives further information on specific activities carried out in support of research. Coordination is currently provided by CIAT under the guidance of the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA).

The Network is co-funded by the national research organizations of its member countries, by the Canadian International Development Agency (CIDA) and the United States Agency for International Development (USAID). Network member countries and institutions appreciate this support and encouragement.

OBJECTIVE 1: *Strengthen National Capacity to Improve Bean Productivity*

Input 1.1: Train and assist national program staff in participatory and on-farm research

A course in farmer-participatory research (FPR) techniques was organized by FO.FI.FA. Madagascar for 10 staff of that country and five from Mauritius (mostly from the Island of Rodrigues where small farmers produce beans). Locally available resource persons were used, including the Malgache sub-project leader on this theme and the IRRI/FOFIFA agronomist. CIAT's regional agronomist also made a technical support visit.

A workshop was held by NARO, Uganda, with partial sponsorship from EABRN, on the institutionalization of farmer-participatory research (FPR). Several

programs and projects took part. Concepts and experience from regional and NARO bean researchers received prominent attention.

A two-week practical course in farmer-participatory research (FPR) methods and appraisal techniques was held with a community near Nazreth, Ethiopia. Participants were a group of researchers from Ethiopia and Kenya, and extension staff from Ethiopia. The site is likely to be useful both for bean research and the African Highlands Initiative (AHI).

Input 1.2: Improve national research planning

The FPR activity (1.1 above) is expected to lead quickly into a case study for farmer-led priority setting at Nazreth, and potentially also at Awassa (Ethiopia) and Katumani (Kenya) which were represented in the course.

The Steering Committee (SC, see 2.1 below) reviewed the status of bean technology development, diffusion and impact assessment on a country-by-country basis.

Training courses were carried out by Mauritius and Tanzania for decentralized management of the Network database. The database was reported to be proving useful also for coordination/ documentation of achievements at the national level, e.g. among zonal research stations.

Input 1.3: Specialized training for bean researchers

Five middle-level researchers spent three weeks at CIAT Headquarters. This year's group was focussed on bean breeding, which allowed some common activities, but each scientist received individual attention so as to acquire specific skills needed in leadership of their regional sub-projects.

A regional course in crossing techniques for breeding technicians from Ethiopia and Sudan was held. The main resource person was a Ugandan technician on the regional staff.

The regional pathologist provided non-formal training to Uganda national programme research and technical staff in laboratory methods for angular leaf spot and root rot diseases.

An Ethiopian plant pathologist spent about six weeks working in the laboratory at Namulonge, Uganda, under the supervision of Uganda's virus sub-project leader. Virus indexing techniques are to be transferred to Melkassa, Ethiopia, to prevent import of strains of virus that occur elsewhere in the region.

On-the-job training in adoption/impact assessment is in progress: for example, the regional socio-economist provided non-formal training for an agronomist at Selian, Tanzania, in procedures for cleaning, coding and entering survey data, and an introduction to the use of SPSS software, for use in a variety adoption survey conducted in Lushoto. The SC noted an urgent unsatisfied demand to establish capacity in each NARS: impact assessments were viewed not only as a means to measure research effectiveness but also as a tool in planning. EABRN therefore sponsored five scientists (economists and agronomists) to a multi-network (beans, cassava, potatoes) course on impact assessment, arranged by USAID at Egerton University. Sessions on social impact assessment were presented by the regional socio-economist.

Two Ugandan soils technicians were sponsored to a Kenyan course in laboratory analytical procedures.

Input 1.4: Develop and apply more cost-effective methods for bean research

A manuscript co-authored by national and regional scientists was submitted for publication, in the African Crop Science Journal, on cost-effective farmer participation in variety evaluation. Experience of EABRN and CIAT in Uganda should be valuable to other countries.

Participatory rural appraisals were completed in three villages in Mukono and Mbale Districts (Uganda) to collect baseline data for an impact assessment study on the varieties CAL 96 and MCM 5001 and develop an approach for participatory impact assessment. Opportunity was taken, during farmer group evaluations of new varieties in Uganda, to experiment with the use of weighted matrix ranking procedures and impact diagramming.

Four national bean germplasm collections in Africa have now been reorganized to use simple low moisture techniques for conservation. Standardized data collection and management procedures are being adopted.

A system was set up for production of inoculum of angular leaf spot (ALS). Artificial inoculation of breeding materials will now be possible at Kawanda and Namulonge, and identification of disease strains will become easier. This will improve efficiency in targeting national and regional research aimed at breeding for resistance to this disease, the most important constraint in high-potential bean areas of Africa.

Input 1.5: Develop new germplasm adapted to regional priorities

A great deal of work in national programs was reported at the SC meeting,

which updated the regional database on variety releases by each country. One critical example is follows.

Good progress was made in research aimed at the improving levels of resistance in locally adapted beans to the bean stem maggot (BSM), Africa's most important bean insect pest on which little concerted effort had been made prior to initiation of the Network. Coordinated from Tanzania, a reconfirmatory nursery was assembled from materials that had shown resistance in earlier network activities. Under heavy infestation, plants of five lines survived much better (30-45%) than a susceptible variety (4%), and these will be distributed in a new regional nursery. In a search for new sources of BSM-resistance, a crossing program continued in Tanzania and a set of 735 bean lines from CIAT's "Core Collection" from the world germplasm bank was evaluated (106 entries showed moderate to high levels of resistance, half of these being from Mexico).

Input 1.6: Monitor, assess and report impact of research

Two follow-up surveys of farmers who earlier received seed of two varieties, *Lyamungu 85* and *90,* were conducted in Lushoto District (in the East) and in Bukoba Region (in north-west) Tanzania. The sample size in Lushoto was 93 farmers, while 95 farmers were interviewed in Bukoba (32% of those who received seed of the new variety). Multiple distributional channels were used in Lushoto: 43% of farmers surveyed received the seed from extension, 32% through on-farm trials and a seed distribution exercise, while 25% were given the seed by researchers. Varying amounts of seed were distributed; the mean amount was 3 kg. Each farmer in Bukoba received 500 grams of seed.

In Lushoto District after a period of between 4-6 years, 35% of the farmers surveyed were still sowing *Lyamungu 85.* Farmers (both adopters and disadopters) strongly appreciated the variety's high yields (80%), taste (80%) and quick cooking time (41%). The major reason for disadoption by 65% of the sample was seed loss due to drought (77%), a factor not specifically related to the new variety. A minority of farmers (7%) stopped growing the new variety due to lack of market. Other reasons for disadoption were: stopped farming (7%), seed destroyed by bruchids (7%) and ate seed (3%). Adoption of *Lyamungu 90*, after a period of between 2-5 seasons [two seasons/year], was higher among the farmers surveyed in both districts. Adoption rate was higher in Kagera Region compared to Lushoto District (69% vs 47%) due to adverse climatic conditions in Lushoto District and superior bean marketing opportunities in Kagera. *Lyamungu 90* is appreciated by farmers in Lushoto for its high yield (83%), taste (83%) and fast cooking time (53%).

In Uganda, the regional socio-economist supervised a follow-up survey of farmers in Mbale who received climbing bean varieties (*Umubano, Urunyumba* and *Gisenyi*) introduced from Rwanda.

At the same time, an impact assessment is being carried out on the new bush varieties *CAL 96* and *MCM 5001* in this area, and baseline data was collected in four communities in Mukono and Mbale Districts selected for having different levels of market orientation in bean production. Participatory rural appraisal (PRA) methods including ranking, rating, group discussions, diagramming and wealth ranking were used as a preparatory step in planning the formal survey, partly in order to test their reliability and cost-effectiveness. The main impact indicators being investigated are: yield, income from beans, labor and other inputs in bean production (e.g. use of hired vs. household labor, male and female involvement), genetic diversity, number and area of plots planted to beans, utilization of beans (home consumption, sales, gifts, etc.), gender division in decision making and control over income, nutritional contribution of beans and bean consumption patterns.

Adoption studies were also carried out by Ethiopian sub-projects; results are to be presented to the next SC meeting.

OBJECTIVE 2: *Increase Sustainability of the Regional Network*

Input 2.1: Increase NARS management of the network

Following a review of a bean research network in Central America, recommendations were made by CIAT on how the transition to NARS management of EABRN could avoid problems encountered elsewhere. Competitive recruitment of the network coordinator, and annual evaluation criteria, are key elements. Meanwhile in the Great Lakes region of central Africa, the first RESAPAC coordinator to be regionally hired by the Network's Committee of Directors, completed his year of transition.

ASARECA reviewed regional priorities and accorded second place to bean (after maize among 18 top commodities). This decision seems likely to lead to institutionalization of bean research collaboration, following the merger of EABRN and RESAPAC, which their Committees of Directors requested last year. The proposed shape and organization of the combined network were developed by the two steering committees (SC) this year, and are expected to be in place during 1996.

EABRN's SC held its annual planning meeting in Kakamega, Kenya, in April. The member countries represented were Ethiopia, Kenya, Madagascar, Mauritius, Tanzania and Uganda. Reports were received from 33 out of 36 sub-projects which received financial support from EABRN in the year ended March 1995. From those which submitted workplan and budget proposals for 1995/96, 21 sub-projects were approved for continuation and a further six were awarded a new phase with new objectives. Proposals received on new topics totaled 26, a record number this year, from which 19 were approved for a probationary first year.

The SC noted continued improvement in problem focus of sub-project proposals, but a decline in the quality of other aspects (references to earlier work were poor; the logical framework and NARS contribution to the budget were often missing; and time limits and proposal submission procedures were not always respected). Network operational funds were allocated as follows: research sub-projects: 39%, information exchange: 33%, training: 28%; administrative services are still provided directly by CIAT. A disciplinary analysis of the distribution of research funds, using targets set by the SC several years ago, indicated a considerable increase in socio-economic research. Variety development received less support, but other technical areas are close to their targets.

A computerized database on regional and national activities and achievements was used this year to improve information flow among Steering Committee members and to facilitate systematic collection of data on research and other outputs.

The SC expressed concern at the absence of responses from the CD to policy issues, and looked forward to a return to regular dialogue between SC and CD on network issues.

Input 2.2: Enhance technical coordination by NARS

A regional planning workshop was held for a week in April, and the SC organized its annual deliberations around that meeting. All member countries were represented, mostly by an inter-disciplinary group of experienced researchers, with extension, NGO and industry representatives also present. Using participatory planning techniques and an impartial moderator, the workshop identified new priorities and activities focussed on solving a small number of the most important regional problems. While this initiative will take at least another year to become fully reflected in network activities, an underlying objective was to counteract a tendency for sub-projects to become isolated.

A Technical Advisory Panel meeting was convened under the African Highlands Initiative for its integrated pest management theme. EABRN is one of four networks or regional groups charged with responsibility for implementing the

first phase of this theme, and the TAP was co-chaired by the EABRN coordinator and attended by several EABRN members. The EABRN Steering Committee was asked to manage the development of sub-project proposals to address one of the priorities established by the AHI, and its sub-projects mode was accepted for wider application within the AHI.

A draft listing of a "Resource Pool of Regional Bean Scientists" was discussed by the SC, and adopted with minor corrections.

A second pan-Africa working group (WG) meeting on bean fungal diseases was held this year, three years after the first one. In attendance were participants from 9 African countries. The aim of the meeting was to review research objectives, strategies, activities and priorities developed in the first WG meeting. A self evaluation (using the SWPO method) was also conducted to identify activities that were previously recommended but not completed. The meeting agreed to retain the five priority diseases (angular leaf spot, anthracnose, rust, root rots and fusarium wilts, and ascochyta) but modified future research approaches due to improved understanding of cause-effects relationships in the problem trees of each disease. Emphasis should continue to be on genetic means in managing diseases, with attention also to integrated disease management approaches.

Input 2.3: Implement regional research that minimizes duplication of effort

Information on EABRN's portfolio of regional research sub-projects is summarized above (2.1).

Specialized training provided by NARO Uganda to an Ethiopian technician (see 1.3 above) and by FO.FI.FA. to extend sub-project methods to others in Madagascar and beyond (see 1.1 above) confirmed the value of sub-projects as an approach to strengthening regional collaboration.

Among several sub-projects concluded this year, attention is drawn here to one on rust in Ethiopia. This study was designed to identify components of resistance in the bean crop which could be used in resistance screening in a national program. The two new Ethiopian varieties, *Awash 1* and *Roba*, were found to have a long latent period in disease development, low infection efficiency and small pustule sizes. All of these were concluded to be desirable features contributing towards partial resistance, and characteristics that should be used systematically.

Input 2.4: Speed transfer of research results among national institutions

Recent distribution of the booklet *An Annotated List of Diseases, Pathogens and Associated Fungi of the Common Bean (Phaseolus vulgaris) in Eastern and Southern Africa*, (by D.J. Allen, publishers: CAB International and CIAT) is aimed at plant quarantine services in the region. The intention is to provide more accessible and up-to-date information on the distribution of bean diseases, and encourage informed decisions on transfer of experimental seed between countries. This has been a significant constraint to networking.

Establishing virus indexing (also 1.3 above) will permit Ethiopia to resume importing EABRN germplasm nurseries following a period of quarantine, self-imposed after surveys had suggested the absence from Ethiopia of lethal African strains of bean virus.

Several workshops facilitated communication of results among EABRN members. Regional scientists presented papers at the SADC Regional Bean Network Workshop in South Africa on several aspects of experience in EABRN, including participatory approaches in bean research and non-formal seed systems. One Kenyan scientist was sponsored to present a paper (on BSM research) following an EABRN competition. EABRN continued to support three publications series (Workshop Proceedings, Occasional Papers and Reprints). A list of these and other publications is given in the Appendix.

Input 2.5: Provide cost-effective coordination and financial management

Network coordination continued to be a part-time occupation of CIAT's pan-Africa coordinator, and the CD took no action towards implementing the strategy of local coordination.

CIAT's administrative officer for Africa visited all offices to close 1994 accounts and conduct an internal audit. The annual external audit of the project was arranged with Coopers Lybrand, after obtaining three competitive bids. Original documents inspected in Uganda and Colombia accounted for all but US$ 62 of reported expenditures. Two minor recommendations were made on local accounting procedures.

Funds for sub-projects approved in principle by the Steering Committee were released to headquarters of NARS as and when full documentation was received by the coordinator. In principle the accounts of sub-projects managed by NARS are subject to external audit on behalf of the Network. The SC asked the coordinator to consult ASARECA, with a view to initiating audits on a trial basis.

OBJECTIVE 3: *Overcome Principal Constraints to Bean Productivity through Collaborative and Strategic Research*

Input 3.1: Generate high-yielding varieties

Even in the largest national bean breeding programs, in Ethiopian and Uganda, lines introduced from CIAT or the regional program at Kawanda still dominate yield trials and continue to provide marked yield increases over the released cultivars (themselves CIAT derived lines). Both programs are ready to make new recommendations of candidate varieties that have markedly and consistently outyielded released cultivars for more than two seasons. In Ethiopia, yield increases in the large-seeded class (61% to 77% over the traditional variety) and in medium-seeded types (25% to 36% increases over a much more recently released variety) were impressive. In Uganda two small-seeded virus resistant lines, *MCM 1015* and *MCM 2001* and the large-seeded, but BCMV susceptible, line *OBA 1* were submitted for release.

In the interest of sustaining yield improvements, these programs are being encouraged to introduce, generate and evaluate hybrid populations, and to incorporate resistance/tolerance to biotic and abiotic constraints into their released cultivars and advanced breeding lines. The regional breeding program's development of lines with virus resistance and good yield potential, which feeds materials into national programs, is now exclusively conducted in segregating populations. This strategy increases the genetic diversity examined and the likelihood of combining desirable characteristics. A number of small-seeded virus-resistant lines have been identified as being resistance also to angular leafspot (ALS), the principal disease of high-potential environments.

A core set from CIAT's world bean germplasm collection, and an international nursery from CIAT, are among 532 lines being screened to identify larger-seeded sources of ALS resistance.

Input 3.2: Assist NARS scientists to implement sub-projects

Technical support visits were made by regional scientists to Ethiopia, Kenya, Madagascar, Rwanda, Tanzania, Uganda and Zaire. Detailed comments on sub-project proposals were made to the SC.

Input 3.3: Maintain and enhance germplasm diversity on farms and in NARS

National programs in Burundi, Kenya, Malawi, Tanzania, Uganda and Zaire proceeded this season to multiply over 300 traditional and improved varieties from

Rwanda; it is feared that the famed genetic diversity upon which Rwanda's low-input bean production depends, has been critically reduced by the civil disorder since April 1994. While this activity is now funded separately under the multi-crop Seeds of Hope project led by CIAT, these vital regional holdings of Rwandan materials had been accumulated entirely through regional network sharing of germplasm among national programs.

An additional set of about 1,000 Rwandan materials, stored in CIAT, were grown in Uganda to complement current surveys in Rwanda in assessing the loss of genetic variation there. Preparations are also underway to preserve all 1,360 Rwandan materials using simple low-moisture techniques.

A study of genetic diversity in beans in Kenya is in progress under a sub-project, and another study in Mbale District, Uganda was initiated with a student from Wageningen University.

Input 3.4: Intensify and sustain production systems for high-potential and fragile environments

Soil fertility is a widespread and severe constraint to bean production in Africa. More efficient use of limited amounts of fertilizer is a preferred strategy for improving bean productivity in high-potential areas, but national recommendations often fail to advise farmers on fertilizer rates for intercropping. Further analyzes were made, in collaboration with regional scientists, on trials of the Fertilizer Use Recommendation Project (KARI-FURP, Kenya) conducted for both maize monoculture and continuous planting of the maize-bean intercrop. These established that intercrop response curves for both N and P_2O_5 can be estimated using maize mono-culture data. Maize monoculture yield correlates well with maize intercrop yield ($r = 0.88$ to 0.93) and reasonably well with bean intercrop yield (0.39 to 0.57), indicating that intercrop bean was able to take advantage of better growing conditions to compensate for the increased competitiveness of intercrop maize associated with such conditions. Extension services need to apply this new knowledge.

Research started three years ago to screen bean lines for tolerance. A set of 380 entries selected during a first cycle of the BILFA (Bean Improvement for Low Fertility in Africa) were further evaluated by network members at sites selected for specific stresses. Approximately 55 varieties have been selected for promise under low N and moderate soil pH, and a similar number for tolerance to low P under moderate soil pH. Some countries now appear especially good sources of tolerance: the Rwanda breeding program proved a good source of low N and high Mn tolerant materials, the Uganda breeding program was the source of many of the low P tolerant lines, and the Great Lakes Region, generally, apparently is the

best source of tolerance to Al toxicity. Selected lines has been increased and distributed for multi-location testing.

A new sub-project in Northern Tanzania is encouraging farmers to produce a dry season crop of beans in rice paddies using residual moisture. Developing acceptable, integrated management of bean stem maggot comprises part of the challenge, since this pest is more serious on off-season crops. In an initial trial to evaluate treatments developed partly by the regional entomologist, farmers indicated preference for combined mulching/seed dressing.

Farmers participating in research on climbing bean production in SW Uganda reported success in controlling the speckled mousebird by trapping them using pieces of fishnet. Birds were then held captive to warn other birds away. Mousebirds are the most frequently mentioned constraint to climber bean production in the SW.

OBJECTIVE 4: ***Facilitate the fuller Utilization of the Market Potential of Beans***

Input 4.1: Address consumer preferences in variety development

This is an on-going activity in all national programs.

Increased emphasis is now being placed by the regional breeding program upon identifying larger seed types, which command higher prices in urban markets, for supply to national partners. This emphasis follows success in developing resistances within acceptable smaller-seeded types.

The SC is seeking a proposal for the development of a regional bean recipes book.

Input 4.2: Reduce post-harvest losses to bruchid pests

A new sub-project in northern Tanzania is evaluating IPM components against bean storage pests with small farmers in two districts. Preliminary results from 10 farms had indicated that treatment with neem, ash or by physical tumbling of grain to dislodge bruchids reduced infestation from about 15% to under 1%.

On-farm research by a Ugandan researcher demonstrated the effectiveness of the solar disinfestation of bean seed, but effects on seed germination and cooking time were not determined.

Input 4.3: Address export market opportunities

The regional breeder has added a component to assist national efforts in developing new varieties of the white pea bean class for canning and export (there are few sources of materials of this type adapted to African conditions). Two lines derived from crosses and one CIAT line were shown to be virus resistant with good to excellent canning quality and seed yields similar to White Haricot, for which they are potential replacements. Another eight lines also yielded well above their parents. These materials are of particular interest to the IDEA (Investment for Development of Export Agriculture) Project in Uganda, and to the Ethiopian program.

A recent shipment of Kenyan snapbeans was found in Europe to have unacceptable pesticide residues; the industry is at risk unless alternative methods of pest management are developed and applied. The regional entomologist and the Kenyan sub-project leader on integrated pest management in snapbeans participated in a sectoral meeting of snapbean exporters, producers and researchers in Kenya, when needs for research and extension were reviewed. The EABRN sub-project was one of only two Kenyan research activities currently aimed at changing pest control practices to ecologically friendly methods. Greatest pesticide use appears to be associated with stem maggot and bean rust, and existing sub-project research (in dry beans) in EABRN should be equally important in this crop.

OBJECTIVE 5: *Initiate and Facilitate Transfer of New Bean Technology*

Input 5.1: Increase participation of farmers in technology evaluation

Advancement of FPR has continued (see 1.1 and 1.2 above).

Discussions are underway with NARO's Research Extension Liaison Unit and the Ndere Dance Troupe to promote technologies through FPR. These include: climbing bean technologies, three species of green manure, vetiver grass, tephosia for mole control, as well as the new bean varieties.

In Western Kenya where root rots recently have become an important constraint in bean production, six root rot resistant varieties were selected for 20 on-farm varietal trials with the intention of releasing at least two in 1996. In this area too, participatory evaluations of introduced climbing beans are leading to their rapid spread among the farming population.

Input 5.2: Improve national links between research and extension

The Uganda National Bean Program, with funding from USAID, multiplied and distributed 3.7 tons of *MCM 5001*, 690 kg of *CAL 96*, 90 kg of *OBA 1*, 470 kg of *MCM 2001* and 430 kg of *MCM 1015*. Seed was distributed, principally through extension agents, in half-kilogram packs to between 40 and 400 farmers in each of 36 districts, covering most of the country in an extensive, rather than intensive, manner. Technical bulletins on two new varieties were prepared in collaboration with the regional socio-economist, in separate versions for extension agents and for farmers.

Seed of the Rwandan climber, *Umubano*, was further distributed in Uganda's Kabale, Kisoro and Mbale districts through district agricultural offices and NGOs, and in Kasese district (Rwenzori Mountains) by the Uganda Seed Project.

KARI researchers at Kakamega in Kenya have established effective collaboration with an NGO (Network for Soil Organic Matter Management) in the promotion of climbing beans. Seed of five climbing bean varieties was distributed to approximately 300 additional farmers. Similar work was reported for new bush bean varieties in Ethiopia.

The regional socio-economist coordinated training, in conjunction with the Uganda bean program and extension service, for a total of 24 women in three women's groups for seed enterprise development, through two five-day workshops in Mbale and Mukono Districts. Topics were bean disease identification, steps in the production of good quality seed (field and post-harvest operations), business management (book keeping, marketing and promotion) and group dynamics. This enabled field testing of a first draft of a training manual on seed production for farmers.

A pan-African workshop was organized by the regional socio-economist on "Alternative Approaches to Seed Production and Dissemination in Eastern and Southern Africa". Participants included 20 specialists working on seed issues from research, the formal seed industry and NGOs in Burundi, Ethiopia, Malawi, Rwanda, Tanzania, Uganda and Zaire. Proceedings are in preparation.

Extension participated actively in the Uganda workshop on FPR (1.1 above), and links between extension staff and researchers continue to be effective in on-farm testing in Uganda, western Kenya and Madagascar. However, inadequate involvement of research on national variety release committees was indicated by the rejection of varieties proposed in Ethiopia and Tanzania due to confusion about reasons for variation in grain color.

The coordinator attended a pan-Africa conference on the Sasakawa Global-2000 approach to extension, which focussed on Ethiopia. While this network probably has much to offer to G-2000 in terms of farmer-participatory approaches, plans were laid with G-2000 for experimental sales of new bean varieties in Tanzania through an existing network of small shops.

Input 5.3: Develop improved seed systems to accelerate transfer of new varieties

The regional socio-economist continued to support the Ikulwe Bean Seed Producers Association in Uganda and other emergent producer groups, and to monitor these and other channels for seed dissemination. Valuable lessons are being learned from case studies in several countries.

Problems encountered thus far by the three small farmer-based seed producer enterprises in Uganda can be classified into three broad areas: production, group and business related. One group, but not the others, encountered difficulties in securing land for collective production and some members were reluctant to contribute labor on collective plots, so the group switched to individual production. Two groups experienced problems arising from lack of trust between members and members' concern to obtain immediate financial benefits. All three groups face difficulties in promoting the new varieties and in obtaining suitable packaging materials. Many of these same problems were experienced by artesinal seed producers in Latin America.

Results from distribution studies indicate that seed dissemination of new bean varieties through NGOs, clinics and women's groups is feasible, and the three channels appear to be effective delivery points. Seed distribution through NGOs is least complicated since these institutions are usually willing to pay for the seed upon delivery and may have extension workers who can mobilize or reach a large number of farmers. However, disadvantages of using NGOs as outlets for new varieties may include the shortage of agriculturally-oriented NGOs in some countries (e.g. Uganda), the concentration of agriculturally-oriented NGOs in certain regions of a country (e.g. NGOs in Uganda mainly serve the north and southwest) and suspicion on the part of smaller, local NGOs toward unknown crop varieties. Some NGOs will only participate in seed distribution after involvement in on-farm varietal trials or demonstrations, which calls for a more integrated approach between national bean programs and NGOs with regard to technology testing and transfer.

In experimental distribution though rural clinics, seed was sold from two points: the out-patient department and bi-weekly maternity clinics. A small amount of seed was also sold through the clinic's outreach program, but this venture was abandoned due to difficulties faced by staff in transporting the seed.

The majority of sales were made from the maternity clinics and most purchases were made by women. Clinic staff actively promoted the new varieties and answered questions raised by prospective buyers.

Access to seed by different socio-economic categories of farmers was somewhat influenced by the nature of the distribution channel. Sales by World Vision in Ssii Sub-county were slightly more biased toward better-off farmers compared with the sales made by women's groups. This may be attributed to the meeting approach used by World Vision to promote the seed. By contrast, women's groups used multiple promotional strategies, including door-to-door selling.

The main difficulty with involving women and other small farmer groups in bean seed distribution is how to easily identify sufficient numbers of these groups and, if seed is sold, how to recover sale proceeds without incurring high transportation costs. It is questionable whether small groups are capable of distributing large quantities of seed and, with the exception of farmer cooperatives, it is doubtful whether groups would be willing to buy the seed wholesale from research programs or other seed producers. While clinics can probably handle a larger volume of seed and could be identified by district health officials, the problem of recovering sale proceeds remains. National programs might be encouraged to deliver seed to district health offices for distribution to health centers. The health centers would report the money back to the officer in charge and it would be recovered the following season by the national program when more seed is delivered.

Input 5.4: Accelerate transfer among countries

The East African zonal bean yield trial (EAZBYT) and evaluation nursery (EAZBEN) were conceived to disseminate elite breeding lines amongst national breeding programs in the region. Contributions to the second round of EAZBYT this year were disappointing, being limited to 18 lines from each of the Kenyan and Ugandan programs.

A second African bean virus-resistance nursery was disseminated by the regional breeder. It contains a wider range of variation than the 1994 nursery, comprising 45 large seeded lines of nine popular seed types and 55 small-seeded lines. A first African nursery for angular leafspot resistance is also now being disseminated by the regional breeder; this set comprises 11 medium and 34 small-seeded lines which are resistant to both virus and to this primary disease of bean in Africa.

The SC endorsed a proposed follow-up activity to Seeds of Hope (Rwanda), by which crop varietal adaptation zones would be mapped and duplicate seed

banks established across Eastern Africa to safeguard against varietal loss during drought or other calamity.

PUBLICATIONS OF THE AFRICA BEAN NETWORK, 1994/95

Workshop Proceedings Series

No. 25. Second Meeting of the Pan-African Working Group on Bean Entomology, Harare, 19-22 September 1993.

No. 26. Bean Improvement for Low Fertility Soils in Africa: Proceedings of a Working Group Meeting, Kampala, Uganda, 23-26 May 1994.

No. 27. Third SADC/CIAT Bean Research Workshop, Mbabane, Swaziland, 5-7 October 1992.

No. 29. SADC Working Group Meeting of Bean Breeders, Lilongwe, Malawi, 26-29 September 1994.

Occasional Publications Series

No. 15. Enhancing small farm seed systems: principles derived from bean research in the Great Lakes Region. L.Sperling, U. Scheidegger and R. Buruchara. 30p.

Reprint Series

No. 9. L. Sperling, M. E. Loevinsohn and B. Ntabomvura. 1993. Rethinking the Farmer's Role in Plant Breeding: Local Bean Experts and On-station Selection in Rwanda. Expl. Agric. 29:509-519.

No. 10. K. E. Giller, F. Amijee, S. J. Brodrick, S. P. McGrath, C. Mushi, O. T. Edje and J. B. Smithson. 1992. Toxic concentrations of iron and manganese in leaves of *Phaseolus vulgaris* L. growing on freely-drained soils of pH 6.5 in Northern Tanzania. Communications in Soil Science and Plant Analysis, 23 (15&16), 1663-1669.

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APPENDIX. EABRN REGIONAL RESEARCH SUB-PROJECTS, 1995/96

A. Intensification of production in high-potential/export areas

OBJECTIVE	SUB-PROJECT		LEADER	INSTITUTION STATION	BGT 1995 /96
Intensification in high-value systems	Diagnostic Survey of Bean Production	SDN	A.T.Ahmed	ARC Hudeiba	1000
	Rice-Bean Double Cropping	TZA	P.Ndakidemi	DRT Selian	2000
	Coffee-Bean Intercropping	KYA	G.W.Mbugua	KARI Thika	2000
Integrated pest management	Snap Beans - IPM	KYA	J.Nderitu	Univ. of Nairobi	4300
	- Nematodes	KYA	S.Kanyagia	KARI Thika	1150
	Irrigated - Whitefly IPM	SDN	S.A.Mohamed	ARC Hudeiba	750
	Diseases - Ramularia Leafspot	UGA	F.Opio	NARO Namulonge	2150
Integrated crop/soil productivity	Minimum Tillage	KYA	J.Muthamia	KARI Embu	300
	Soil Organic Matter	UGA	M.Isabirye	NARO Kawanda	1500
	Salinity & Heat Stress	SDN	S.Ahmed	ARC Hudeiba	1500
Development, dissemination and adoption of high-yielding varieties	Disease resistance - anthracnose	ETH	Tesfaye Beshir	IAR Ambo	1100
		MDG	G.Rakotomalala	FOFIFA Tana	1000
	- angular leafspot	KYA	F.Makini	KARI Kisii	2250
	- BCMV nursery/crosses	UGA	T.Sengooba	NARO Namulonge	2400
	On-Farm Testing of Varieties	MDG	A.Rabakoarihanta	FOFIFA Tana	3800
	Decentralized Seed Production	ETH	Aberra Deressa	IAR Nazreth	2500
	Non-Traditional Seed Channels	KYA	M.Kamau	KARI Thika	
			/P.Kimani	/U.Nairobi	2400
	Factors affecting Variety Adoption	UGA	M.Mugisa-Mutetikka	NARO Namulonge	3500
	Adoption of *Lyamungu-85*	TZA	E.M.Nkonya	DRT Selian	2500
Post-harvest improvement	Bruchids - IPM Methods	UGA	S.Nahdy	NARO Namulonge	2000
	- IPM Dissemination	TZA	S.Slumpa	DRT Selian	3170
	New Bean Products	KYA	F.Kusewa	KARI Katumani	2000
		UGA	N.Nampiim a	Kasubi Farmers	1630
TOTAL					46900

B. Enhancing productivity of low-income farmers, predominantly women

OBJECTIVE	SUB-PROJECT		LEADER	INSTITUTION STATION	BGT 1995 /96
Development of improved systems	Climbing Beans - W. Kenya	KYA	R.Otsyula et al.	KARI Kakamega	3250
	- E. Kenya	KYA	J.Muthamia	KARI Embu	1475
	- Staking	UGA	C.Niringiye	NARO Namulonge	860
	Gender Analysis	ETH	Yeshi Chiche	IAR Nazreth	1930
Integrated pest management	Root Rots	KYA	R.Otsyula	KARI Kakamega	2050
	Stem Maggot - Resistance	KYA	J.M.Songa	KARI Katumani	1500
	- Verification & Promotion	ETH	Tsedeke Abate	IAR Nazreth	3500
	- Farmer Assessment	TZA	C.Mushi	DRT Selian	3000
Integrated crop/soil productivity	FPR on Soil Productivity	UGA	A.Karimarimo/F.Opio	NARO Namulonge	5000
		ETH	Habtamu Admassu	IAR Nazreth	1550
	Acid Soils Management - ITK	MDG	B.Rabary	FOFIFA Tana	2000
	Response Farming	KYA	L.Menin/K.Njoroge	KARI Katumani	1700

Varietal tolerance to biotic/abiotic constraints	BILFA - low N/P	TZA	P.Ndakidemi	DRT Selian	1600
	low N	UGA	M.Silver	Makerere Univ.	1300
	low N	ETH	Teshome Regassa	IAR Nazreth	500
	low P	KYA	G.Rachier	KARI Kakamega	2800
	low P	MDG	B.Rabary	FOFIFA Tana	1600
	low P	ETH	Belay Simane	Alemaya Univ.	500
	Disease Resistance - C.Bacterial Blight	UGA	P.Tukamuhabwa	NARO Namulonge	1700
	- Rust	ETH	Habtu Assefa	IAR Nazreth	2000
Improved seed systems	Farmers' Bean Genetic Diversity	KYA	G.Mbugua/S.Munene	KARI Thika	2900
	Seed Dissemination	ETH	Getachew Kassaye	IAR Awassa	950
TOTAL					43665

Note: BILFA = Bean Improvement for Low-Fertility Soils in Africa

DATABASE OF NETWORK EVENTS

I MEETINGS OF MANAGEMENT COMMITTEES

Date	Location	Participant	Representing
ASARECA Committee of Directors			
6-8/3/95	Kampala, Uganda	M. Ntibishimirwa	Burundi
		A. Mailu	Kenya
		F. Rasolo	Madagascar
		B. Munyanganizi	Rwanda
		J. Mukiibi	Uganda, Chairperson
		N. Masimango	Zaire
		R. Kirkby	CIAT, Regional Coordinator
Steering Committee			
21-23/4/95 & 29/4/95	Kakamega/Nairobi, Kenya	L. Randriambolanoro	Madagascar
		Habtu Assefa	Ethiopia
		S.T. Kanyagia	Kenya
		F. Opio	Uganda, Chairperson 1995/96
		C. Mushi	Tanzania
		N. Govinden	Mauritius
		W. Godderis	RESAPAC Chairperson
		P. Nyabyenda	RESAPAC Coordinator
		R. Kirkby	CIAT, EABRN Coordinator
		H. Masambu	USAID/REDSO, Nairobi

II TRAINING AT CIAT

Candidate	Gender	Country	Time frame	Course Title
Senior Visiting Researchers				
Paul Kimani	M	Kenya	9-30/10/94	Specialised training in bean breeding.
Rowland Chirwa	M	Malawi	" "	" " " " "
F. Tukamuhabwa	M	Uganda	" "	" " " " "
Nkonko Mbikayi	M	Zaire	" "	" " " " "
Denash Giga	M	Zimbabwe	" "	" " for bean bruchid sub-project.

III IN COUNTRY AND REGIONAL TRAINING COURSES

Course Title	Country Benefiting	Location	Candidate	Gender	Time Frame	Remarks
Bean Varietal Crossing Techniques for Technicians	Ethiopia " Sudan " " " "	Hudeiba, Sudan	1.Belete Dagne 2.Abdulshikur Jemal 3. 4. 5. 6. 7.	M M	20/12/94- 5/1/95	Resource person: S.Sebuliba (NARO, Uganda).
Bean Seed Production Methods for Uganda Farmer Groups	Uganda	Mbale and Gwagalo, Uganda	1. 2. 3. ... 18.		6-8/2/95 & 3-4/4/95	Resource persons: S.David (CIAT) F.Opio (NARO)
Methodologie de Recherche Participative en Milieu Paysan	Madagascar " " " " " " " " Mauritius " (Rodrigues) " " "	Mantasoa, Madagascar	1.H.Harisona 2.H.Andriamampandry 3.L.Rasoanaivo 4.A.Ranivomanana 5.S.Perrine 6.G.Rakotomalala 7.I.Ravaoarinivo 8.V.Randriamahonina 9.M.Randrianarisoa 10.L.Rakotorahalahy 11.J.P.Xhoris 12.J.A.Law San 13.J.W.Tolbize 14.M.Gungadurdoss 15.S.Ramasamy	M M M M M M F M F M M M M M M	20-28/3/95	Resource persons: B.Rabary, S.J.Razafimandimby (FOFIFA); M.Gaudreau (IRRI).
Virus Indexing Techniques	Ethiopia		1.Abiye Tilahun	M	Mar-Apr 95	Resource persons: T.Sengooba (NARO Uganda), H.Gridley (CIAT).

Course Title	Country Benefiting	Location	Candidate	Gender	Time Frame	Remarks
Soil Analysis Techniques for Laboratory Technicians	Uganda	Muguga, Kenya	1. W.T.Keresipo 2. R.Nyenje	M M	5-17/6/95	Organized by KARI.
Impact Assessment	Ethiopia Kenya Madagascar Tanzania Uganda	Egerton, Kenya	1. Aberra Deressa 2. Mercy Kamau 3. J.Randrianjatovo 4. M.E.Mmbaga 5. Phinehas Tukamuhabwa	M F M M M	21-31/8/95	Organized by CMRT, USAID and CIP. CIAT Resourse Person: S.David
Farmer-Participatory Research Methods and Appraisal Techniques	Ethiopia Kenya	Nazreth, Ethiopia	1. Habtamu Admassu 2. Beyene Soboka 3. Yeshi Chiche 4. Nigussie T/Michael 5. Melesse Temesgen 6. Tilahun Mulatu 7. Erenso Degu 8. Teshome Regassa 9. Wubishet Adugna 10.Shiferaw Tesfaye 11.Tenau Workeheyu 12.Getatchew Kassay 13.K. Menin	M M F M M M M M M M M M M	25/9/95- 6/10/95 (MOA Nazreth) (IAR Awassa) (" ") (" ") (KARI Katumani)	CIAT resource persons: C.Wortmann; S.Fujisaka (CIAT Cali). [Note: all participants from IAR Nazreth except where indicated otherwise]

V REGIONAL WORKSHOPS

Candidate	Country	Gender	Location	Subject	Time Frame	Remarks
1. W. Godderis	Burundi	M	Kampala, Uganda	Pan-Africa Workshop on Bean Seed Multiplication and Dissemination	10-14/10/94	CIAT resource persons: S.David, L.Sperling, C.Wortmann, R.Buruchara, R.Lepiz (Andean Zone). Other: N.Louwaars.
2. Getachew Kassaye	Ethiopia	M				
3. Aberra Deressa	"	M				
4. Dechassa Lemessa	"	M				
5. Martin Banda	Malawi	M				
6. Pierre Nyabyenda	Rwanda	M				
7. Emil Mmbaga	Tanzania	M				
8. Fina Opio	Uganda	F				
9. Sarah Kasozi	"	F				
10.Wycliffe Mangheni	"	M				
11.Pyndji Mukishi	Zaire	M				
12.Komba L.Elukessu	"	M				
1. John Nderitu	Kenya	M	Blantyre, Malawi	Crop Science Conference for Africa	19-23/2/95	Sponsorship by EABRN awarded to three best papers. Regional staff also presented papers.
2. Paul kimani	Kenya	M				
3. Tsedeke Abate	Ethiopia	M				
1. Wilfried Godderis	Burundi	M	Kakamaga, Kenya	EABRN Participatory Participatory Planning Workshop	24-28/4/95	CIAT resource persons: R.Kirkby, K.Ampofo, R.Buruchara, S.David, H.Gridley, C.Wortmann. Moderator: L.Lwambuka (Univ/Dar es Dalaam). Observer: H.Masambu (USAID/REDSO)
2. Habtu Assefa	Ethiopia	M				
3. Tsedeke Abate	"	M				
4. Yeshi Chiche	"	F				
5. Samuel Kanyagia	Kenya	M				
6. John Nderitu	Kenya	M				
7. Susan Munene	Kenya	F				
8. John Muthamia	Kenya	M				
9. Theophilus Mutui	Kenya	M				
10.L.Randriambolanoro	Madagascar	F				
11.B.Rabary	"	F				
12.Noel Govinden	Mauritius	M				
13.Clemence Mushi	Tanzania	M				
14.Jane Kisakye (CARE)	Uganda	F				
15.Christine Nampiima	"	F				
16.Fina Opio	"	F				
17.P.Tukamuhabwa	"	M				
18.Michael Ugen	"	M				
19.Pierre Nyabyenda	RESAPAC	M				

Candidate	Country	Gender	Location	Subject	Time Frame	Remarks
1.	Uganda		Mukono, Uganda	Uganda Workshop on Farmer-Participatory Research	May 96	CIAT resource persons: C.Wortmann, M.Fischler, S.David. Organized by NARO across commodities.
2.	"					
3.	"					
4.	"					
5.	"					
n...	"					
1. Joseph Bigirimana	Burundi		Kampala, Uganda	2nd Pan-African Working Group Meeting on Fungal Diseases of Bean	5-8/6/95	CIAT resource persons: R.Buruchara, V.Aggrawal.
2. Habtu Assefa	Ethiopia					
3. Tesfaye Beshir	Ethiopia					
4. Sammy Ajanga	Kenya					
5. Paul Kimani	Kenya					
6. Margaret Makelo	Kenya					
7. Felister Makini	Kenya					
8. Reuben Otsyula	Kenya					
9. David Thuo	Kenya					
10.Georges Rakotomalala	Madagascar					
11.Charles Jambawe	Malawi					
12.Andre Rugemintwaza	Rwanda					
13.Frederika Mwalyengo	Tanzania					
14.F.S.Ngulu	Tanzania					
15.Kijana Ruhebuza	Zaire					

VI MONITORING TOURS

Candidate	Country	Gender	Location	Subject	Time Frame	Remarks
1. Girma Tegegne	Ethiopia	M	Uganda	Quarantine methods for BCM Virus	9-15/10/94	Resource persons: T.Sengooba (Uganda), H.Gridley (CIAT).
1. J.F.Randrianjatovo	Madagascar	M	Madagascar	Farmer-Participatory Research	3-8/4/95	Resource person: M.Gaudreau (IRRI).
2. S. Rakotoambinina	"	M				
3. J. Ratsimandresy	"	M				
4. I. Ravaonorolala	"	F				
5. R. Randrianaivo	"	M				
6. A.P. Andrianaivo	"	M				
7. N. Rabemanantsoa	"	M				
8. B. Rabary	"	F				
9. J. Claude	"	M				

REGIONAL STAFF TRAVEL

Period	Staff Member	Country	Purpose
2-8 Oct 94	H. Gridley	Kenya	Egerton University workshop on durable resistance breeding.
10-13 Oct 94	R. Buruchara	Uganda	Participate in Seed Systems workshop.
9-13 Oct 94	R. Kirkby	Uganda	Accompany CIAT External Program/Management Review team.
13-16 Oct 94	R. Kirkby	Kenya	" " " " " " " "
13-15 Oct 94	C. Wortmann	"	" " " " " " " "
18 Oct 94	K. Ampofo	Kenya	Participate in meeting of Kenya French Bean IPM Committee.
23-25 Oct 94	R. Kirkby	Kenya	Participate in USAID Networks evaluation.
24-28 Oct 94	R. Buruchara	Kenya	Participate in USAID Networks evaluation.
25-28 Oct 94	R. Kirkby	Ethiopia	Advisory committee for legumes in semi-arid cropping systems.
26-28 Oct 94	S. David	Tanzania	Assist national program: training for variety adoption study.
1-5 Nov 94	W. Youngquist	Rwanda	Seeds of Hope: MINAGRI and NGO meetings, arrange genetic assessments.
2-6 Nov 94	R. Kirkby	Zimbabwe	SACCAR Board Meeting with regional programs/networks.
6-10 Nov 94	R. Kirkby	Malawi	Annual IARCs coordination meeting on training in Africa.
7-12 Nov 94	K. Ampofo	Ethiopia	Accompany USAID Networks reviewer.
9-11 Nov 94	C. Wortmann	Kenya	Follow up on promotion of Crotalaria green manuring.
13-16 Nov 94	R. Buruchara	Rwanda	Seeds of Hope: NGO meeting, arrange genetic assessments.
13-22 Nov 94	S. David	Ethiopia	Biennial meeting of Rockefeller postdocs, at ILCA.
21-23 Nov 94	R. Kirkby	Kenya	ICRAF/Highlands Initiative Task Force meeting.
21-25 Nov 94	R. Buruchara	Kenya	Technical support to KARI pathology research at Kisii and Machakos.
11-18 Dec 94	M. Fischler	Tanzania	Assist Uyole in low-moisture storage and germplasm data mangmt.
8-13 Jan 95	J. Kamulindwa	Tanzania	Internal audit and closing of 1994 accounts at Arusha office.
22-28 Jan 95	R. Kirkby	Zimbabwe	USAID workshop on technology development systems.
23-28 Jan 95	R. Buruchara/ W. Youngquist	Zaire	RESAPAC regional seminar and planning meeting for phase 5, Bukavu.
7-9 Feb 95	R. Kirkby	Kenya	Planning meetings for Greater Horn of Africa initiative.
9-20 Feb 95	J. Kamulindwa	Malawi	Internal audit.
12-16 Feb 95	C. Wortmann	Madagascar	Assist FPR activities and reorganization of bean germplasm.
12-16 Feb 95	R. Buruchara	South Africa	Assess breeding/pathology research, especially to benefit small farmers
"	H. Gridley	" "	" " " " " "
"	V. Aggarwal	" "	" " " " " "
14-17 Feb 95	R. Kirkby	Malawi	Bean/Cowpea CRSP Project planning workshop, Bunda College.
17-24 Feb 95	C. Wortmann	Malawi	Field visit on BILFA selection, and present papers at CSCESA.
19-23 Feb 95	R. Buruchara	Malawi	Technical support in pathology/breeding.
19-23 Feb 95	H. Gridley	Malawi	" " " " " "
23 Feb-3 Mar	S. David	Malawi	Technical support to national programme.
26 Feb-1 Mar	R. Kirkby	Kenya	Africa Highlands Initiative: Task Force & IPM Technical A/Panel.
26-27 Feb 95	R. Buruchara	Kenya	Africa Highlands Initiative: IPM Technical A/Panel.
20 Feb 95	R. Buruchara	Zambia	Technical support in pathology/breeding at Msekera.

Period	Staff Member	Country	Purpose
5-8 Mar 95	R. Kirkby	Uganda	ASARECA Directors Committee.
9-10 Mar 95	R. Kirkby	Tanzania	Arusha - coordination.
14-17 Mar 95	R. Kirkby	Malawi	National Bean Programme Steering Committee.
18-23 Mar 95	R. Kirkby	S.Africa	SPAAR Annual Meeting; contacts on research needs of small farmers.
23-24 Mar 95	R. Kirkby	Kenya	NHRS Thika; and workshop arrangements.
22-27 Mar 95	R. Buruchara	Rwanda	Seeds of Hope multiplication; arrange trials.
30-31 Mar 95	R. Kirkby	Tanzania	Arusha - meet CIDA representatives with national coordinator.
4-8 Apr 95	C. Wortmann	Kenya	Technical support to researchers at Embu, Katumani, Kakamega.
19-22 Apr 95	W. Youngquist	Rwanda	Follow up Seeds of Hope multiplication, and support to ISAR.
20 Apr-3 May	R. Kirkby	Kenya	EABRN Steering Committee and planning workshop.
23-29 Apr 95	K. Ampofo/ R. Buruchara/ S. David/ H. Gridley	Kenya	EABRN Planning Workshop.
23 Apr-6 May	C. Wortmann	Kenya	EABRN Planning Workshop; Teach at CMRT; AHI/MISP Workshop.
8-11 May 95	S. David	Uganda	Ssii Village, Mukono, for varieties assessment survey.
9-14 May 95	W. Youngquist/ R. Buruchara	Rwanda	Support to ISAR at Rubona and Rwerere; Seeds of Hope followup.
14 May 95	K. Ampofo	Zambia	Assist national programme with entomology trials planning.
16-18 May 95	S. David	Uganda	Mbale to design variety baseline survey.
18-20 May 95	R. Buruchara	Kenya	African Highlands Initiative: IPM panel.
18-22 May 95	R. Kirkby	Kenya	African Highlands Initiative: IPM panel and task force.
18-23 May 95	J. Kamulindwa	Malawi	Support office financial and administrative management.
18-22 May 95	R. Kirkby	Kenya	CGIAR Mid-Term Meeting.
25-28 May 95	R. Buruchara/ W. Youngquist	Kenya	Meeting on Seeds of Hope, ILRI, Nairobi.
29 May-3 Jun	All staff	Tanzania	Annual Africa staff meeting; review Problem Y analysis.
3-9 Jun 95	R. Kirkby/ C. Wortmann	Uganda	Research sites in W. Uganda; assess seed adoption; meet J.Mukiibi.
4-7 Jun 95	S. David	Uganda	Mbale to train interviewers.
11-16 Jun 95	S. David	Uganda	Mbale to conduct varieties survey.
13-16 Jun 95	C. Wortmann	Tanzania	Participate in workshop on the banana system of Kagera Region.
21-24 Jun 95	C. Wortmann	Ethiopia	Prepare farmer-participatory workshop; development of sub-projects.
22-24 Jun 95	W. Youngquist	Zaire	Coordination and technical visit to bean research at Mulungu Station.
22-26 Jun 95	S. David	Uganda	Ssii (Mukono) for varieties survey.
31 Jun-5 Jul 95	R. Kirkby	Tanzania	Uyole and Southern Highlnds: research trials, impact assessment.
22-25 Aug 95	R. Buruchara	Rwanda	Development of ISAR bean research workplan 1995/96; plan training.
15 Aug 95	C. Wortmann	S.Africa	Familiarization with small-farmer bean production/research in Natal.
27-29 Aug 95	S. David	Kenya	Trainer at Regional Impact Assessment Course, Egerton University.
3-9 Sep 95	W. Youngquist/ R. Buruchara	Rwanda	Conduct training course for all research staff of ISAR.

Period	Staff Member	Country	Purpose
6-9 Sep 95	R. Kirkby	Uganda	Kabale, for African Highlands Initiative task force meeting.
11-13 Sep 95	R. Kirkby	Tanzania	Arusha - coordination of EABRN subprojects and CIAT activities.
19-22 Sep 95	R. Kirkby	Malawi	Malawi/ODA/CIAT project semi-annual Steering Committee.
21 Sep 95	S. David	Uganda	Seasonal planning meeting at Ikulwe Bean Seed Producers Association.
24 Sep-10 Oct 95	C. Wortmann	Ethiopia	Nazreth: FPR workshop and initiate FPR research; Alemaya: technical support.
25-30 Sep 95	R. Kirkby	Ethiopia	Sasakawa Global 2000 Conference.

REGIONAL STAFF VISITS TO CIAT HEADQUARTERS

Period	Staff Member	Country	Purpose
1-18 Dec 94	R. Kirkby	Colombia	Annual Program Review
"	H. Gridley	"	" " "
19 Nov- 18 Dec 94	C. Wortmann	Colombia & C.America	Annual Program Review and review of PROFRIJOL Network
1-18 Dec 94	K. Ampofo	Colombia	Annual Program Review
1-18 Dec 94	S. David	Colombia	Annual Program Review, and plan collaboration with Netherlands Centre for Genetic Resources, Wageningen University.

TRAVEL TO EASTERN AFRICA BY CIAT'S NON-REGIONAL STAFF

Period	Staff Member	Country	Purpose
12-16 Feb 95	M. P.-Corrales (HQ)	S.Africa	Assess breeding/pathology, especially for small farmers.
19-23 Feb 95	M. P.-Corrales (HQ)	Malawi	Technical support in pathology/breeding.
20 Feb 95	M. P.-Corrales (HQ)	Zambia	Technical support in pathology/breeding.
16-22 Apr 95	C. Cardona (HQ)	Kenya/Tanz	Assist entomology research, especially IPM.
25-28 May 95	W. Scowcroft/ J. Kornegay (HQ)	Kenya	Seeds of Hope meeting.
28 May-3 Jun 95	J. Kornegay (HQ)	Tanzania	Annual Africa staff meeting/planning.
6-8 Jun 95	S. Beebe (HQ)	Tanzania	Assist evaluations of World Germplasm against stem maggot.
9-12 Jun 95	S. Beebe (HQ)	Uganda	Evaluations of Seeds of Hope materials.
24 Sep - 12 Oct 95	S. Fujisaka (HQ)	Ethiopia	Nazreth: FPR workshop and initiate FPR; also Alemaya.