

COVER PAGE

Proposal Title: Dry Grain Pulses Collaborative Research Support Program
(Pulse CRSP)

USAID RFA#: M-OAA-EGAT-DHWA-07-496

Name of Applicant: MICHIGAN STATE UNIVERSITY

Point of Contact (Agent)
Name: Ann C. Spalding

Title: Sr. Contract and Grant Administrator
Postal Address: Office of Contract and Grant Administration
Michigan State University
301 Administration Building
East Lansing, MI 48824-1046

Phone: 517-355-5040, ext. 243
Fax: 517-353-9812
E-mail: spalding@cga.msu.edu

Signature: Ann C. Spalding **Date:** 2/14/07

This application includes data that shall not be disclosed outside the US Government and shall not be duplicated, used, or disclosed—in whole or part—for any purpose other than to evaluate this application. If, however, a cooperative agreement is awarded to this applicant as a result of, or in connection with, the submission of this data, the US Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting cooperative agreement. This restriction does not limit the US Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets marked.

**DRY GRAIN PULSES CRSP PROPOSAL
TECHNICAL APPLICATION**

TABLE OF CONTENTS

EXECUTIVE SUMMARY	2
I. TECHNICAL APPROACH	6
A. INTRODUCTION	6
B. TECHNICAL LEADERSHIP	6
1. State of Knowledge of Beans, Cowpeas and Related Pulses	6
2. Capitalizing on Lessons Learned and Emerging Issues	9
3. Dry Grain Pulses CRSP Global Vision and Goals	11
4. Conceptual Framework for Technical Strategy	11
5. Investigating Opportunities for Other Dry Grain Pulses: Potential Foci of Associate Awards	13
C. ACHIEVING DEVELOPMENT IMPACT	15
1. Strategy for Achieving Development Impact	15
2. Strategy for Support and Achievement of IEHA Objectives	17
D. FOCAL AREAS FOR DEVELOPMENT RESULTS	18
1. Improving Human Health and Nutrition	19
2. Maximizing Soil and Water Quality and Productivity	19
3. Advancing Integrated Pest Management Practices	19
4. Achieving Gender Equity	20
5. Conserving Biodiversity	20
E. STRATEGY FOR HUMAN RESOURCE DEVELOPMENT AND INSTITUTIONAL CAPACITY BUILDING	21
II. MANAGEMENT APPROACH	24
A. CAPACITY OF PROPOSED MANAGEMENT ENTITY	24
1. Leadership of Michigan State University	24
2. Capacity to Undertake Management Entity Responsibilities	24
B. ORGANIZATIONAL STRUCTURE OF THE MANAGEMENT OFFICE	26
1. Structure of the Management Office	26
2. Structure, Functions, & Responsibilities of Governance Bodies	30
C. STRATEGY FOR PROGRAM PLANNING, REPORTING AND ANALYSIS	32
1. Global Program Planning and Implementation Strategy	32
2. Strategy for Program M&E, Reporting and Synthesis	34
D. PLAN FOR COMPETITION, SELECTION AND MANAGEMENT OF SUB-AWARDS	35
1. Goals By The Me For The Competition And Selection Process	35
2. Process For Competition And Management Of Sub-Awards	36
3. Mission And Stakeholder Engagement	37
E. IMPLEMENTATION OF ASSOCIATE AWARDS	38
III. SAMPLE SOLICITATION	39

IV. PAST PERFORMANCE	51
V. ANNEXES	
ANNEX 1: LIST OF ACRONYMS	69
ANNEX 2: CURRICULUM VITAE OF DR. IRVIN E. WIDDERS, PROPOSED PROGRAM DIRECTOR	71
ANNEX 3: SUPPORT LETTER FROM DEAN JEFFREY ARMSTRONG	80

EXECUTIVE SUMMARY

As an internationally engaged ‘World Grant’ university, Michigan State University (MSU) proposes to serve as the Management Entity (ME) for the Dry Grain Pulses CRSP. MSU has unique and outstanding capacity to efficiently administer a multi-institutional, multi-disciplinary, multi-regional research, training and outreach program in partnership with USAID, and to provide technical leadership on pulse crops to achieve program objectives consistent with USAID’s strategic vision for agricultural development.

TECHNICAL APPROACH

The global pulse industry is entering a new era characterized by globalization of markets and fundamental changes in food value-chains, presenting major challenges to smallholder farmers. MSU has extensive expertise in international development from which to draw upon and is committed to learning from past experiences. MSU will be responsive to emerging issues and directives from USAID, and will adopt innovative approaches so as to enhance the productivity and developmental impact of the technical program of the Dry Grain Pulses CRSP.

Program Vision and Global Goals: The global program vision of the proposed Dry Grain Pulses CRSP is to: 1) contribute to economic growth and food and nutritional security through knowledge and technology generation; 2) contribute to the sustainable growth and competitiveness of value-chains utilizing socially and environmentally compatible approaches; 3) build the capacity of agriculture research institutions in USAID priority countries; and 4) be a resource for and provide technical services to USAID Missions and other public and private sector organizations for the benefit of developing country and U.S. agriculture.

The Dry Grain Pulses CRSP will achieve this vision through support for a coherent portfolio of integrated, multi-disciplinary research, training and outreach activities that focus on beans, cowpeas and related dry grain pulses and address the following **Global Themes**:

- A. To reduce bean and cowpea production costs and risks for enhanced profitability and competitiveness.
- B. To increase the utilization of bean and cowpea grain, food products and ingredients so as to expand market opportunities and improve community health and nutrition.
- C. To improve the performance and sustainability of bean and cowpea value-chains, especially for the benefit of women.
- D. To increase the capacity, effectiveness and sustainability of agriculture research institutions which serve the bean and cowpea sectors and developing countries.

Core funded projects will address multiple **topical areas** across 2-3 global themes to ensure achievement of performance/sustainability enhancing and institutional capacity building goals. In addition to the core focus on beans and cowpeas, the Dry Grain Pulses CRSP commits to administer Associate Award projects contracted by USAID field missions on these and other pulse commodities (e.g., pigeonpeas, chickpeas, fava beans and lentils).

Achieving Development Impact: The MSU-led Dry Grain Pulses CRSP will provide leadership in technical program design and implementation to ensure that outputs from research, training and outreach activities effectively achieve the broader strategic development goals of USAID as formulated in the *Policy Framework for Bilateral Foreign Aid*, the *Presidential Initiative to End Hunger in Africa* (IEHA), and USAID’s *Strategic Framework for Africa*. Accordingly, long-

term CRSP-supported research, training and outreach projects will be purposefully linked with specific Host Country (HC) needs, priorities and USAID programs. To this end, the Management Office (MO) will seek input from USAID-Washington and Missions regarding the integration of outreach into all CRSP projects, the development of project workplans aligned with ongoing or planned HC intervention programs, and mechanisms to inform decision makers to ensure utilization of research outputs. All projects supported through the Dry Grain Pulses CRSP will be required to provide a plan involving appropriate partners for achieving specific output targets (e.g., annual benchmarks), and transforming these into development outcomes and impacts.

Focal Areas for Development Results: The scope of work for the proposed technical program of the Dry Grain Pulses CRSP will address five Focal Areas relevant to pulse value-chains by producing outputs that lead to developmental outcomes of importance to USAID. These Focal Areas are: 1) Improving human health and nutrition, 2) Maximizing soil and water quality and productivity, 3) Advancing Integrated Pest Management Practices, 4) Achieving gender equity, and 5) Conserving biodiversity. The proposed strategy for addressing these focal areas includes: a) identifying health and nutrition as a priority topical area, b) requiring the integration of gender equity objectives into the design of all research, training and outreach activities, and c) including focal area objectives in projects addressing relevant topical areas (e.g., IPM, soil and water quality, and biodiversity will be addressed in projects that address topical areas under the global theme of “reducing production costs and risks”).

Strategy for Institutional Capacity Building: Increasing the capacity of HC institutions is identified as a priority global theme for the Dry Grain Pulses CRSP. The MO will take advantage of the unique capacities of U.S. and HC universities to provide cost-effective, innovative, and gender balanced short-term and degree training for young professionals from developing countries in response to identified institutional needs. The proposed institutional capacity building strategy will involve: a) Support of training utilizing leveraged funds to achieve dual program objectives— research and human resource development, b) Support of degree training that addresses specific identified HC institutional needs, c) The use of advanced regional HC institutions for degree and short-term training, d) Short-term training in cutting-edge technologies, tools and management skills, and e) Support for equipment, facility and professional development needs of HC institutions to conduct research, teaching and outreach.

MANAGEMENT APPROACH

MSU has demonstrated the capacity to effectively administer a CRSP through its exemplary record of service as the ME for the Bean/Cowpea CRSP. Capacities that distinguish and uniquely position MSU to effectively manage the Dry Grain Pulses CRSP include its: a) internationally recognized technical expertise in bean/pulse research, b) extensive administrative experience in the design and implementation of global research, training and outreach programs, c) demonstrated leadership in institutional capacity building, d) quality staff dedicated to the administration of USAID contracts and grants, e) strong linkages with bean/pulse industry groups, and f) intellectual leadership in human health and nutrition research. MSU, as the ME is committed to adhering to the “core values” of quality client oriented management, excellence in all activities, honesty and integrity, respect for diversity, innovation for improved effectiveness and efficiency, and communication and consultation with partners.

Organizational Structure: The proposed organizational structure for the Dry Grain Pulses CRSP consists of three foundational groups—USAID as the funding agency, MSU as the ME, and

U.S. and partner HC institutions as implementers of sub-awards (yet to be identified). Within the ME, the Management Office (MO), to be housed in the College of Agriculture and Natural Resources, will be staffed by a competent administrative team: Program Director (0.9 FTE), Program Deputy Director (0.5 FTE), Administrative Officer (1.0 FTE), and a Clerical staff person (0.5 FTE). This represents a staff reduction of 0.8 FTE from the current Bean/Cowpea CRSP MO. The proposed Director, Dr. Irvin Widders, and Deputy Director, Dr. Mywish Maredia, are faculty members who have over 30 years of research and teaching experience, extensive professional involvement in international programs, and fluent in multiple languages.

The administrative functions for the proposed MO structure include: a) oversight of an open competitive process for constituting a portfolio of collaborative projects; b) development of sub-agreements with lead U.S. universities; c) oversight of the preparation and implementation of workplans; d) administration and monitoring of the use of USAID funds; e) accounting to USAID for program accomplishments and expenditures; f) obtaining necessary USAID clearances and approvals; g) development and implementation of project review and evaluation procedures to ensure high performance and achievement of program objectives; and h) providing intellectual leadership in synthesizing program contributions to development outcomes, especially the role of pulses in improving human health and nutrition.

To ensure accountability and objectivity, the MO, in cooperation with the CTO, will work closely with three advisory groups: an External Advisory Panel (EAP), a panel of experts with no conflict of interest convened for the review of proposals and selection of projects; a Technical Management Advisory Committee (TMAC), an advisory body to perform both strategic planning and monitoring functions, comprised of both external and internal members; and an Administrative Advisory Committee (AAC), a virtual committee comprised of Institutional Representatives (IRs) with responsibility to approve an *Operations and Policy Manual* for the Dry Grain Pulses CRSP and provide advice on program implementation issues.

Strategy for Program Planning, Reporting and Analysis: MSU proposes to implement a two-phase technical program with two award cycles (2.5 and 2 years) for the initial five-year authorization of the Dry Grain Pulses CRSP. Supplemental funds will be set aside to provide added incentive for innovation and achievement of institutional capacity building goals. Nearly 80% of the core funding will be competitively awarded for multi-institutional projects that focus on one or more priority topical areas and USAID strategies. The ME will utilize the TMAC as the principal advisory body for most program planning, analysis and M&E functions such as needs assessments, prioritization, planning and coordination, innovation, monitoring, identification of emerging issues, and portfolio evaluation. The use of performance indicators, annual progress reports and institutional site visits will constitute the primary mechanisms for M&E. To facilitate program-wide communication and coordination in conjunction with workplan development, a Global PI Meeting will be convened after sub-awards have been selected. MSU routinely uses modern electronic communication technologies to facilitate reporting and communication, for cutting costs and building HC institutional capacity.

Plan for Competition, Selection and Management of Sub-Awards: MSU is committed to implementing a competitive process that will result in the selection of a coherent portfolio of outstanding projects that will achieve 3-5 major developmental outcomes, consistent with the global program themes, during the initial five years of the Dry Grain Pulses CRSP award.

Principles embraced by the ME to guide this process include: open opportunity for competition and participation, evaluations based on excellence, no conflicts of interest, a system of checks and balances to ensure integrity, transparency, fairness and accountability, and low transaction costs. A Request for Proposals (RFP) will be prepared in consultation with the USAID CTO and will be distributed broadly using electronic list serves and posted on the CRSP website. Special effort will be made to contact and encourage proposals from minority serving universities. It is envisioned that up to nine subcontracted core projects will be configured for the Dry Grain Pulses CRSP during each award cycle in consultation with the EAP and the CTO.

Mission and Stakeholder Engagement and the Implementation of Associate Awards: MSU, as the proposed ME, is committed to pursuing partnerships with USAID Missions. The MO plans to constitute a portfolio of research, institutional capacity building and development projects that have strong Mission interest and involvement. The MO will proactively engage country USAID Missions at various stages during the implementation of the program. Prior to establishing sub-awards, the MO will seek USAID Mission concurrence and input regarding Dry Grain Pulses CRSP projects in the respective countries.

MSU is well positioned to manage Associate Awards due to its extensive experience in administering numerous highly successful bilateral awards from USAID Missions and Regional Bureaus. As the “Leader” of an LWA award involving subcontracts with partner institutions, MSU is committed to providing unbiased representation of the capacities and interests of the community of U.S. and HC scientists and institutions which participate in the program. The Dry Grain Pulses CRSP can provide a broad range of deliverables to Missions to achieve their in-country foreign assistance and development objectives including: technologies to enhance the productivity and marketability of pulses (i.e., pigeonpeas, fava beans, chickpeas, and lentils); cost-effective training (e.g., short courses, graduate degree training) opportunities; consultative services in such areas as biotechnology, disease diagnosis, market development, food processing, human health, community nutrition, and extension methodologies; research to find solutions to crisis situations (crop disease outbreaks); and seed of improved bean and cowpea varieties for distribution to farmers in response to natural and political disasters.

SUMMARY OF PROGRAM COSTS

MSU is committed to the principles of “cost effectiveness and value” as reflected in the proposed budget of \$9 million over five years for the Pulse CRSP. Administrative costs (MO) will be maintained at 22% of the total program budget, making available 78% of funds for program implementation and subcontracted projects. Economies are achieved by reducing MO staff, eliminating top heavy governance structures, utilizing electronic communication, Internet-based reporting, and providing a substantial in-kind contribution. MSU’s total match commitment is \$723,818 representing 31% of the total cost for the ME. Included in this amount is payment of 1.17 years (out of 5 years) of the Program Director’s salary and \$441,561 from the reduction in the NICRA from the on-campus (51% MTDC) to off-campus rate (26% MTDC). An additional match of \$775,942 will be provided by subcontracted U.S. universities.

I. TECHNICAL APPROACH

A. INTRODUCTION

Beans (*Phaseolus vulgaris*), cowpeas (*Vigna unguiculata*) and related dry grain pulses (i.e., pigeonpeas, chickpeas, fava beans and lentils) represent an important group of edible leguminous crops with unique potential to address the health, income creation, and agricultural sustainability needs of developing countries in Sub-Saharan Africa, Latin America and Asia. As traditional staple foods, they are major sources of affordable protein, complex carbohydrates, essential micronutrients, dietary fiber, vitamin B and antioxidants in the nutritionally challenged diets of both the rural and urban poor. Due to their adaptability to marginal production agro-ecologies and relatively high market value, pulses are extensively cultivated by resource-poor smallholder farmers for both household food security and as cash crops. Moreover, pulses are valued by farmers for their contribution to soil fertility, maintenance of soil productive potential, and compatibility with cereal and root crops in a cropping system.

The global pulse industry is entering a new era characterized by globalization of markets and fundamental changes in food chains, presenting major challenges to smallholder farmers. Although pulses are recognized as nutrient dense and one of the most “nutritionally complete” health-promoting foods, increased competition by other commodities for consumer attention has made it difficult for the bean and cowpea sectors to increase consumption and utilization especially among young low income urban consumers.

Michigan State University (MSU) is both positioned and committed to providing both technical and administrative leadership to the Dry Grain Pulses CRSP (here-to-after also called the “Pulse CRSP” in this proposal for the purpose of brevity) for the coming decade (2007-17). As an internationally engaged ‘World Grant’ university with a commitment to addressing future challenges of the “bean” sector in Michigan, the U.S. and the world, MSU will mobilize the capacities of the university to provide leadership in serving the global pulse sectors and to administer the Pulse CRSP. This CRSP is viewed by MSU as a strategic agricultural science and technology program that will lead the dry grain pulse subsectors into the future while concurrently contributing to USAID’s goals of “building a safer, more secure and prosperous world” both in developing countries and the U.S., consistent with the Title XII legislation.

B. TECHNICAL LEADERSHIP

1. STATE OF KNOWLEDGE OF BEANS, COWPEAS AND RELATED PULSES

a. Recent Trends and Critical Issues:

Persistence of Hunger, Malnutrition and Poverty- Success in achieving sustainable reductions in poverty, food insecurity and malnutrition has been elusive. A strategy that links these interrelated and mutually reinforcing dynamics with “pro-poor growth,” private sector investment, and institutional capacity building will support future country-led efforts for development. Beans and cowpeas are ideal commodities for addressing the multidimensional nature of poverty because of their inherent nutritional and agronomic characteristics and the fact that they are largely produced and consumed in regions of the world with high incidences of

poverty. In Africa where approximately 46% of the population live on less than \$1-per-day and in Latin America where more than 40% of people earn less than \$2 per day, beans and cowpeas are widely consumed staples in local diets.

Global Trade of Pulses and Change in Food Industry Structure- Within the past decade, consolidation and multi-nationalization of segments of the food industry (retail, processing, wholesale and food service) have resulted in fundamental changes in the structure of the global food industry. Modernization, vertical integration, market extension, and the creation of new opportunities in emerging markets present new challenges and opportunities. Supermarkets are rapidly appearing in most developing countries displacing traditional retail systems. Buyers for these companies are seeking dependable supplies of grain and processed food goods of high quality at competitive prices. Although supermarkets have demonstrated a willingness to purchase locally, the trend is to extend their sourcing of food products through regional and global supply chains. Research is needed to understand how smallholder pulse producers in developing countries might break into and exploit these newly emerging markets.

Urbanization and Impacts on Pulse Consumption- Rapid urbanization in many developing countries is giving rise to a new era of development challenges. With 75% of the population in Latin America urban and Africa approaching 40%, a substantial low income population has emerged with new food needs and preferences. An increasing number of women are entering the work force and making food choices based on convenience and affordability. Urban consumers, especially the younger generation, tend to abandon nutritious traditional foods including pulses and opt for prepared foods that are not conducive to good health. Since urban consumers represent the markets of the future, research is needed to understand changes in consumer food preferences, the health consequences of alternative dietary choices, and to develop marketing strategies that enable urban poor to access flavorful, nutritious and affordable pulse-based food products that are compatible with their urban lifestyles.

Limited Gains in Productivity- Although the genetic yield potential of beans and cowpeas exceeds 2000-3000 kg/ha, average yields achieved by resource-poor, smallholder farmers in Africa and Latin America are only a fraction of those levels (200 to 500 kg/ha). Such low yields are attributable to production on low fertility marginal soils with low inputs of fertilizers, water, and integrated pest management practices, thus increasing the risk of stress and crop failure. For the sustainability of production systems, including profitability and competitiveness, farmers need access to site-specific packages of appropriate affordable technologies that will enable them to consistently achieve higher levels of productivity.

Nutritional and Health Promoting Contributions of Pulses to Diets- The “Nutritional Gap,” defined as the food required to maintain minimum nutritional levels within a population, remains high in many regions of the world. The USDA estimates that 67% of the world’s current nutritional gap occurs in Sub-Saharan Africa. Moreover, in both developing and developed countries, chronic diseases including, cardiovascular disease, type 2 diabetes, and cancers are increasing at alarming rates among urban populations. According to the WHO, obesity has reached epidemic proportions due to poor food choices. As indicated in the new Food Pyramid and the recent FDA approved Dietary Guideline, “the regular consumption of beans is conducive to good health and reduces the risk of cardiovascular disease.” Research indicates that pulses also reduce the risk of type 2 diabetes and colon cancer. To enable improvements in grain

nutritional content, additional knowledge is needed of the constituents in pulses that contribute to good health. Research is also needed to identify effective marketing and consumer education strategies that aim to enhance pulse consumption for improved health.

High Grain Prices Limit Pulse Value Addition- Adding value to agricultural commodities has proven to be an effective approach for expanding market opportunities and thus increasing profitability for producers. However, recent Bean/Cowpea CRSP research has shown that high demand for cowpeas and beans in Africa and the resulting high grain prices have stifled growth of a processing sector. In this context, value addition adds cost to already expensive grain making cowpea- and bean-based foods unaffordable to many developing country consumers. The challenge for the pulse sector is to both increase production and expand supply in the market place and thus, create an environment where value-added processed products can be profitably prepared and marketed.

Weak Pulse Value-Chains with Limited Private Sector Investment- Pulse value-chains link the various stakeholder groups including producers, service industries associated with the food chains and consumers. In most developing countries, these value-chains are weakly structured. The lack of associations representing interests of the various subsectors is in part responsible. For pulse value-chains to grow and be competitive, private sector investment in research, access to technologies and pro-growth policies are needed.

Weak Technical Leadership Capacity of NARS- In spite of tremendous international donor investment in bean, cowpea and chickpea research through the international agriculture research centers (e.g., CIAT, IITA, ICRISAT) and the Bean/Cowpea CRSP, pulse research programs of National Agriculture Research Systems (NARS) in developing countries remain weak. NARS programs lack well trained scientists in critical areas such as molecular genetics, food science and nutrition to be able to respond to the needs of pulse value-chains. NARS also lack the resources to effectively network and collaborate with scientists within the region and internationally.

b. The Role of Beans, Cowpeas and Related Pulses in Africa and Latin America:

Importance to Economic Growth- With over eight million hectares of beans harvested annually in Latin America and four million in Africa, dry beans represent a major commodity for domestic, regional and global trade. Similar potential exists for cowpeas with nearly 10 million ha harvested annually in West and Central Africa alone. There is strong potential for bean and cowpea farmers in Africa and Latin America to compete in the global market place; however this ability is dependent upon their success in achieving sufficiently high productivity of desired market classes with efficient use of inputs.

Address Gender Equity Issues- Women play prominent and vital roles in bean and cowpea value-chains. In many developing countries in Africa and Latin America, women are the primary growers, retail vendors and processing entrepreneurs of bean and cowpea grain and food products. These pulse crops enable women to contribute to household food security as well as generate income to pay for essential personal and family expenses (i.e., housing, education, health care). For successful grain production and preparation of value-added bean/cowpea products for sale, women must have access to technologies that improve the efficiency, capacity and quality of their enterprises. In addition, women with expertise in pulse genetics, agronomy,

nutrition, and marketing remain under-represented within universities, government ministries and outreach/community development organizations.

Food and Nutritional Security- Pulses are staples in traditional diets in Latin America and Africa, and as such play a vital role in ensuring national as well as household food and nutritional security. Beans and cowpeas, for example, are the second most important source of dietary protein (after maize) and third most important source of calories (after cassava and maize) for the urban poor in Sub-Saharan Africa. Indigenous pulse crops have been integrated into local cropping systems and thus are important for subsistence in marginal areas prone to famine and food insecurity. Pulses, especially beans and cowpeas, are a solution to growing urban nutritional insecurity by the virtue of their high nutritional value, familiarity to local consumers, and low cost.

Sustainability of Agriculture Systems- The sustainability of agriculture systems in many regions of the world is being challenged because of growing soil infertility and increasing water shortages. Pulse crops can contribute to the environmental sustainability of cropping systems. As legumes which biologically fix nitrogen, pulse crops depend less on expensive N fertilizer as well as contribute to the nutrient needs of inter-planted or rotated crops. Recent advances in root architecture and physiology provide promise for the breeding of improved bean genotypes that are more efficient in phosphorus uptake and adapted to low pH soils prevalent in Africa and Latin America. Cowpeas and chickpeas are highly suited to production in semi-arid regions such as the Sahel and savanna regions of West Africa, subject to low rainfall and high temperatures.

2. CAPITALIZING ON LESSONS LEARNED AND EMERGING ISSUES

Michigan State University, as the Management Entity for the Bean/Cowpea CRSP, is committed to learning from past experiences, being responsive to new priorities and directives from USAID Washington, and adopting innovative approaches to enhance the productivity and developmental impact of the technical program of the Pulse CRSP. Lessons learned include:

a. Commitment to Achievement of Research Objectives: The investment of resources and time required to successfully complete CRSP research, training and outreach projects varies. Historically, CRSP projects were considered long-term, requiring five to ten years to achieve project objectives. Experience has shown that substantially less time may be needed for certain socio-economic studies (i.e., key-informant studies, technology transfer activities, impact assessment studies, etc.) as compared to genetic improvement research. The External Evaluation Panel (EEP) in its Five-Year Technical Review (2002-07) recommended that cropping systems and plant breeding be given high priority in the Pulse CRSP. Such research requires multi-year investments, has high potential for impacting agricultural productivity, and has frequently not received adequate support by donors because of competing research fads (i.e., biotechnology, nanotechnology, etc.). Because of the critical need by NARS to build capacity and focus their research efforts on such areas as cropping systems, breeding and seed systems, these should be priorities for the proposed CRSP.

b. Networking: Scientists cannot be productive by working in a vacuum. Just as collaboration with U.S. scientists through the CRSP is beneficial, 'networking' among developing country scientists with common interests can yield even greater dividends. Networking encompasses

information and technology exchange, joint planning and coordination of research activities, joint submission of proposals for and collaboration on research grants, as well as cross mentoring and evaluation of peer programs. As was noted in the EEP Report (2006), Pulse CRSP support for NARS programs and formal/informal “bean” networks (e.g., SABRN, etc.) is a proven and cost-effective approach to building sustainable research program capacity in strategic regions.

c. Public and Private Sector Partnerships: Consistent with the ‘land-grant’ model, CRSP research programs are most effective in contributing to the growth of agricultural industries and accruing societal benefits when scientists partner with the appropriate stakeholders at the conceptualization, implementation and evaluation stages. This involves consultation and collaboration with appropriate private industry groups, national public programs, research communities (i.e., IARCs), community development practitioners (NGOs), donor organizations, and USAID field Missions. Evidence of linkages with appropriate partners will be a criterion for selection of sub-awards in the Pulse CRSP.

d. Market Failures in Commodity Value-Chains: Due to limited availability of resources, subsector constraints in bean and cowpea value-chains should be prioritized when deciding upon CRSP investments in research and capacity building. Experience has shown that CRSPs make the greatest contribution to development when supporting activities for which there is inadequate incentive and opportunity for the private sector to perform these functions. Examples of such areas include new cultivar development (since pulses are self-pollinated) in contrast to the development of new “prototype” pulse-based convenience foods.

e. Needs of Emerging Markets and Food Processing Micro-Enterprises: Market research shows that urban consumers will be demanding processed pulse-based foods over dry grains because of the time and energy required to cook grains. To provide direction and support to nascent food processing and distribution industries in Sub-Saharan Africa will demand multi-disciplinary approaches that involve engagement by sociologists, economists, and nutritionists in addition to food scientists. Studies on consumer demographics and preferences, value-chain economics, food culture and nutritional needs are required so that food products utilizing pulses will find their appropriate niches. Cottage micro-enterprises which prepare and market consumer-ready food products will also need access to appropriate food processing technologies.

f. Filling the Gaps and Complementarities: International agriculture research and training agendas of IARCs have been increasingly driven by the interests and priorities of donor agencies and foundations. The unfortunate consequence is that NARS’ capacity needs as well as research program priorities are frequently not considered or addressed. The Pulse CRSP will seek to constitute a technical program that takes advantage of the capacities of the U.S. universities in areas of comparative strength relative to the IARCs (i.e., degree training, cutting-edge research technology, expertise in socio-economics, human health and nutrition, and food science, etc.) and seek to be complementary to other international research and development programs targeted to the pulse sector. Consultation with NARS, private industry and USAID field Missions will enable the identification of gaps and niches where the Pulse CRSP can make vital research, training and outreach contributions.

3. DRY GRAIN PULSES CRSP GLOBAL VISION AND GOALS

Given the state of knowledge of the pulse sector, the lessons learned from past experiences, and USAID's new *Agriculture Strategy* (2005) and the President's *Initiative to End Hunger in Africa*, the proposed **Global Program Vision** for the Pulse CRSP is: (1) to contribute to economic growth and food and nutritional security through knowledge and technologies generated by modern agricultural science while conserving natural resources and biodiversity; (2) to contribute to the sustainable growth and competitiveness of value-chains utilizing socially and environmentally compatible approaches that address gender integration and improve the human health and welfare of citizens in host countries; (3) to build the capacity of agriculture research institutions committed to providing technical leadership to and serving the needs of the pulse sectors in their respective countries and regions; and (4) to provide support services in agriculture science and technology to USAID Missions and other public and private sector organizations for the benefit of developing country and U.S. agriculture.

The Pulse CRSP will achieve this vision through support for a portfolio of integrated, multi-disciplinary, cross-cutting research, training and outreach activities that focus on beans, cowpeas and related dry grain pulses that address the following **Global Themes** (goals):

- A. To reduce bean and cowpea production costs and risks for enhanced profitability and competitiveness.
- B. To increase the utilization of bean and cowpea grain, food products and ingredients so as to expand market opportunities and improve community health and nutrition.
- C. To improve the performance and sustainability of bean and cowpea value-chains, especially for the benefit of women.
- D. To increase the capacity, effectiveness and sustainability of agriculture research institutions which serve the bean and cowpea sectors and developing countries.

4. CONCEPTUAL FRAMEWORK FOR TECHNICAL STRATEGY

Michigan State University proposes the following areas of inquiry (**Topical Areas**) within the framework of the Global Themes for the Leader Award of the Pulse CRSP. These Topical Areas are not intended to be the sole focus of individual subcontracted projects. They represent suggested domains of inquiry within the respective themes to be considered as foci for future research, training and outreach projects in the Pulse CRSP. To this end, funded projects will ideally address multiple topical areas across two or three themes to insure that projects benefit not only a particular sub-sector of a pulse value-chain, but also address performance and sustainability issues and contribute to building the capacity of institutions so that development occurs from within. These topical areas are described in greater detail in the Sample Solicitation.

Theme A: To reduce bean and cowpea production costs and risks for enhanced profitability and competitiveness. The success of commodity value-chains is largely contingent upon the ability of the production sector to consistently provide the desired products, with the required quality attributes, in adequate quantities and at competitive prices to satisfy target markets. To lower the costs of production and minimize risks for resource-poor farmers and traders of beans, cowpeas and related pulses, research is needed in the following Topical Areas.

- Increasing crop productivity through genetic improvement.

- Integrated crop management practices for improved sustainability and conservation of biodiversity.
- Mitigating the effects of low fertility soils and drought on production systems.
- Enhancing grain quality and value.
- Improving farmer access to seed and the sustainability of seed systems.

Theme B: To increase the utilization of bean and cowpea grain, food products and ingredients so as to expand market opportunities and improve human health. Consumers and markets drive commodity value-chains. Pulse value-chains will not grow without increased consumer demand for dry grain, fresh plant parts (e.g., leaves, fresh pods, peas, etc.), processed foods and ingredients. Functional markets are also needed to enable consumers to have access to these goods at affordable prices. Perceived health and nutritional benefits from foods such as pulses represent an increasingly important factor contributing to consumer consumption decisions. Suggested Topical Areas for CRSP research under the utilization theme include:

- Understanding constraints and opportunities in domestic, regional and global markets.
- Investigating the health promoting and nutritional attributes of beans and cowpeas in human diets (especially youth, pregnant women, urban poor, HIV+ children).
- Understanding consumer attitudes and behaviors regarding beans, cowpeas and related pulses in diets with a specific focus on urban youth and young families.
- Identifying approaches for the education of “influencers” and decision makers (both public and private sector) of the importance of promoting pulse consumption for improved community health.
- Improving access by urban consumers to affordable, high quality and preferred bean and cowpea grain and value-added products.

Theme C: To improve the performance and sustainability of bean and cowpea value-chains: Commodity value-chains in many developing countries tend to be weak, lacking overall structure and containing dysfunctional sub-sectors. The ultimate goal of research, training and outreach projects through the Pulse CRSP is to contribute to the development of functional dry grain pulse value-chains that generate benefits for people whose livelihoods depend on these commodities, especially women. Consumers are also benefactors of pulse value-chains since they depend on them for access to economical and nutritious food. Research is needed to increase the performance and sustainability of bean, cowpea and related pulse value-chains. The goal is to integrate the areas of inquiry associated with this theme, Theme C, into the projects that address Themes A and B. This will ensure that the work of this CRSP is relevant, demand-oriented and contributes to the sustainability of pulse value-chains. Suggested Topical Areas for inquiry include:

- Understanding constraints to smallholder pulse farmer participation in markets and trade.
- Identifying “weak links”/constraints in the functionality of bean and cowpea value-chains.
- Identifying strategic public sector (e.g., NARS, universities) interventions to alleviate constraints or market failures in partnership with other public and private sector institutions (i.e., NGOs, farmer organizations, etc.).

Theme D: To increase the capacity, effectiveness and sustainability of agriculture research institutions which serve the bean and cowpea sectors in developing countries. Functional and robust public and private institutions are essential for collaborative research, training and outreach activities to have a lasting impact on development. In many developing countries,

institutions lack the human and financial capital to serve the needs of stakeholders of commodity value-chains. Institutions require a new generation of leaders with skills in modern technology, a vision for the growth of pulse value-chains, an entrepreneurial mentality, and a commitment to reach out and serve private sector groups especially resource-poor farmers. Theme D, “building institutional capacity and sustainable agricultural institutions,” is therefore cross-cutting and will be an integral component of all projects within the Pulse CRSP (see the Sample Solicitation).

Suggested Topical Areas for funding under this Theme of “institution building” include:

- Building partnerships with key stakeholders in selected countries to promote uptake of research outputs (technologies, knowledge, information) generated from Themes A-C.
- Strengthening regional bean and cowpea research networks.
- Training young scientists, especially women, in the use of modern tools for research, research program management, and service to private and public sectors.

5. INVESTIGATING OPPORTUNITIES FOR OTHER DRY GRAIN PULSES: POTENTIAL FOCI OF ASSOCIATE AWARDS

In addition to the core focus on beans and cowpeas, the Pulse CRSP proposes to conduct research and training on the following potential pulse commodities through Associate Awards: Pigeonpeas, Chickpeas, Fava/Broad Beans and Lentils. Major characteristics of these crops, their economic importance and potential research opportunities are described in Table 1.

Production of minor pulse crops is rapidly growing due to rising global demand. The total area planted to these four pulse crops is about 22 million ha worldwide. Developing countries account for 90% of the global production of these pulses. The major regions that produce and consume these pulse crops include South Asia, the Middle East, North Africa and East Africa. Pigeonpeas and fava beans are important staples in certain areas of Latin America. Pigeonpeas are extensively produced and consumed in Caribbean countries, similar to fava beans in the temperate areas of the Andes in South America (Bolivia, Ecuador, and Peru).

Like beans and cowpeas, these pulse crops offer numerous advantages. In developing countries, chickpeas, lentils, pigeonpeas and fava beans are an integral component of traditional cropping systems often grown in rotation with cereals. As legumes, they contribute to the maintenance of soil health, nitrogen balance and cropping system sustainability. These pulses are also important for household food and nutritional security, especially during “hunger periods.” They also can be prepared into excellent nutritional supplements for children and pregnant mothers. Most of these pulses are considered dual-purpose crops providing food/forage for both humans and animals. Some of these crops, especially pigeonpeas, have the ability to survive and give good economic returns when planted under dry land conditions. In East Africa and South Asia, their cultivation and sorting are primarily carried out by women, making them an ideal crop to direct additional income and business opportunities to women.

Being minor crops, chickpeas, lentils, pigeonpeas and fava beans suffer from many of the same production, utilization and marketing constraints as beans and cowpeas. In many USAID presence countries in Africa, Asia and the Middle East, these dry grain pulses are an important source of income for smallholder farmers due to burgeoning export market opportunities. The Pulse CRSP, therefore, proposes to utilize the future network of U.S. and host country institutional partners, to seek research, training and technology dissemination opportunities on

these other pulse crops through Associate awards. Some of the potential research and training topical areas that might be addressed include:

- Increasing crop productivity through genetic improvement and improved farm practices.
- Understanding and educating consumers of the health promoting and nutritional attributes of chickpeas, pigeonpeas, lentils and fava beans.
- Understanding domestic, regional and global markets.
- Understanding constraints (technological, knowledge gap, information) to smallholder pulse farmer participation in markets.
- Building partnerships with stakeholders of value-chains to address identified constraints in selected countries.

Table 1: Major characteristics, economic importance and potential for research opportunities in other dry grain pulses

Other Dry Grain Pulses	Developing regions where commercially an important crop	Major characteristics	Economic importance	Research potential
Pigeonpeas (<i>Cajanus cajan</i> (L.))	South Asia, East/Southern Africa and Caribbean	Ability to survive in dryland conditions; drought tolerant, nitrogen fixing; requires low farming inputs; mostly planted as an intercrop with cereals; seeds used both in green and dry pod stage	Food security crop grown on 4.3 m ha worldwide (more than 95% in developing countries); important feed crop, high nutritional value; great demand by south Asian communities; important export crop for Eastern Africa	Production constraints (breeding for diseases and insects, IPM, crop management) Market constraints (understanding value-chains, expanding market potential) Meeting grades and quality standards for international market opportunities)
Chickpeas (<i>Cicer arietinum</i>) (large-seeded kabuli type and small-seeded desi type)	Middle East (kabuli), South Asia (desi), Eastern Africa (desi), Mexico (kabuli)	Widely cultivated in warm semi-arid temperate and tropical areas for its edible seed; nitrogen fixing; mainly used for human consumption	Third most important food legume in the world (10 m ha) with 95% cultivation in the developing countries; high nutritional compositions; desi-type consumed in multiple forms--as whole seeds, de-hulled splits or flour; chickpea is also known for its use in herbal medicine and cosmetics; great market potential	Production constraints (breeding for early maturity, cold tolerance, diseases and insects) Storage and processing constraints (milling technologies, storage technologies) Utilization (health and nutrition) Market constraints (linking small-scale producers to markets; meeting grades and quality standards for international market opportunities)
Fava/Broad Beans (<i>Vicia faba</i> L.)	Middle East, North Africa, Horn of Africa, East Asia, parts of South America	An important pulse crop grown in warm temperate and sub-tropical areas for dry seeds and green pods; a cool season crop; main constraints are fungal and virus diseases, parasitic weeds, drought and cold damage	Planted on 2.6 m ha worldwide (80% in developing countries). used for human nutrition in developing countries, and for animal feed in developed countries; a good source of nutrition (considered as a meat substitute and as a skim-milk substitute in diets of the poor)	Production constraints (breeding for biotic and abiotic stresses) Market constraints (understanding value-chains, expanding market potential)
Lentils (<i>Lens culinaris</i> Medik.)	Middle East, North Africa, Central and South Asia	It is a nutritious food legume grown in subtropical regions of developing world; cultivated for its seed and mostly eaten as dhal	Planted on 3.9 m ha worldwide (87% in developing countries); high-quality straw used as feed in the Middle East and North Africa; good nutritional value; rising demand;	Production constraints (developing technologies for winter production; farming practices to reduce production and harvesting costs) Market constraints (understanding value-chains, expanding market potential)

C. ACHIEVING DEVELOPMENT IMPACT

1. STRATEGY FOR ACHIEVING DEVELOPMENT IMPACT

The MSU-led Pulse CRSP will implement the following strategies to ensure that program investments in research, training and outreach will generate outputs and outcomes that effectively enhance progress towards achieving the broader development goals of reducing poverty, increasing food and nutritional security, promoting economic growth and enhancing environmental sustainability.

a. Alignment with USAID Core Strategic Goals: The proposed themes for research, training and outreach under the Leader award address the following strategic goals of USAID as formulated in the *“Policy Framework for Bilateral Foreign Aid”*: (1) Promote transformational development; (2) Strengthen fragile states; (3) Support strategic states; and (4) Address global issues. A predominant focus of the Leader award will be on countries that are reasonably stable, need foreign aid, and are committed to development progress. With input from USAID-Washington and Missions, the MSU-led Pulse CRSP will formulate project activities based on the principle of maximizing development results and impact that address a country’s needs, opportunities, and priorities. Consistent with the Policy Framework, the Pulse CRSP will support innovative research, training and outreach activities that: (1) promote economic freedom; (2) make sound investments in people; (3) emphasize country ownership and participation in formulating and designing aid programs; (4) take full advantage of partnerships with other donors, governments, communities, non-governmental organizations, the private sector, and universities; (5) give priority attention to policies, institutions, and absorptive capacity; and (6) work within a common, country-owned framework. The proposed CRSP program will also promote systems approaches which consider the complex of social, political, economic and environmental influences that affect the adoption of technologies, practices, and policies.

b. Linking CRSP Research for Long-Term Development with Direct Intervention Outreach Programs: A **“two-pronged” approach is required to reduce** poverty and hunger while promoting growth and sustainability. Such an approach combines—a) direct interventions and social investments that address the immediate needs of the poor and hungry (social safety nets, cash transfers, health interventions, food and nutrition programs) with b) long-term development programs that enhance the performance of the productive sectors to promote agricultural and rural development, create employment and increase the value of the assets (physical, human, financial) held by the poor. The primary focus of the proposed Pulse CRSP is to invest in long-term development programs within this broader two-pronged strategy based on the principle of exploiting the comparative advantage in research by U.S. universities and host country research partners. Embedded in this focus though is the vision to link the CRSP-supported research programs with country-specific direct intervention programs. This will be achieved by:

1) Integrating outreach into the design and implementation of all research and training activities. All the projects in the Pulse CRSP will be required to integrate outreach activities into the design and implementation plans by identifying partners to ensure that program results/outputs reach their intended beneficiaries. This will be a selection criterion for sub-awards.

2) Developing research activities aligned with planned or existing intervention programs.

Where appropriate, CRSP research and training activities will be aligned with existing and planned intervention programs by USAID Missions and other development organizations. In IEHA countries, the Pulse CRSP will seek to partner with USAID-supported institutions and public organizations. This will ensure that the research/training activities have direct relevance and applicability to on-the-ground programs.

3) Keeping decision makers informed to ensure utilization of research results. The Pulse CRSP will utilize multiple venues, media and platforms to keep decision makers in partner countries informed. This includes periodic publications and distribution of research and policy briefs, utilizing the print and electronic media for dissemination of results, and participating in stakeholder forums. A priority will be to regularly inform USAID Missions officers, development professionals, key stakeholders and other decision makers in target countries of Pulse CRSP research and outreach outputs.

c. Contribute to Mission Strategy Development and Assessments: The proposed Pulse CRSP is committed to not only engaging Missions in dissemination of CRSP results/outputs but also to contribute to Mission strategy development and assessments. As a research-arm of the EGAT Bureau, the Pulse CRSP will offer a wealth of scientific knowledge and on-the-ground development experience from diverse U.S. and HC universities and research partners that can be of benefit to Missions in strategy formulation and assessment. The Pulse CRSP would also benefit from such a relationship. Involvement by the CRSP ME and PIs in Mission strategy development would improve understanding of issues, policies and priorities of host country governments, and enable the design of projects that are impact oriented.

d. Strategy for Mapping Impact Pathways by Developing Benchmarks and Indicators for Outputs, Outcomes and Impact: All activities to be supported by the Pulse CRSP will include a plan for transforming research activities into: (1) output targets (annual benchmarks such as technologies, policy strategies, practices, capacity, and knowledge expected in a specific year that contribute to project objectives); (2) outcomes/ influences (the external use, adoption, or influence of the project outputs by partners, stakeholders and clients); and (3) impacts (the longer range social, environmental and economic benefits that are consistent with USAID goals and the Pulse CRSP's mission and objectives). The ME staff will play an active role and work with each research team to ensure that research activities meet overall CRSP objectives, and to define target outputs, expected outcomes and impacts.

Table 2 identifies the types of information to be collected in the annual workplans and progress reports to operationalize a research-to-impact pathway and facilitate the monitoring and assessment of progress towards achievement of identified outputs, outcomes and impacts. The workplans will be developed based on the impact pathway framework to ensure that the research approach and methods to be used directly contribute to the output targets. The workplans will also identify partnerships and networks considered essential for achievement of intended outcomes (i.e., strategies to ensure that outputs move beyond the “shelf” and are actually adopted and disseminated to farmers, partners and clients) and long range development impacts (i.e., social, economic and environmental benefits consistent with USAID goals). At the end of each fiscal year, projects will be required to report on the achievement of the annual output targets set in the workplans as benchmarks. Success in achieving output targets and documentation of outcomes will be used as indicators for monitoring project progress in the

research-to-impact pathway. The annual progress reports will also be used to assess the likelihood of research generated outputs (knowledge, technologies and recommendations) being adopted by end-users, and leading to developmental impact. A goal of the Pulse CRSP is to extend project outputs broadly within and across regions so as to maximize benefits to the widest possible audience.

Table 2: Example of types of information to be collected in workplans and annual progress reports to map progress towards the impact pathway

	Workplan	Progress Report
Main Purpose:	<ul style="list-style-type: none"> To develop an implementation plan for a specific time period against which the progress will be judged. To give direction and a road map for what needs to occur in order to achieve goals and objectives. 	<ul style="list-style-type: none"> To monitor progress towards project outputs. To assess the likelihood of generated knowledge and technologies being adopted and achieving developmental impact.
Types of information to be collected from each project:		
Research activities/objectives	List of research activities/objectives	List of research activities/objectives
Output Targets	<u>Annual benchmarks</u> , defined by quantity and type, expected in a specific year and important for achievement of the Pulse CRSP’s global objectives.	<u>Achievement of annual output targets</u> ; An explanation for failure to attain output targets; If the output targets significantly changed, a justification for the new outputs and implications on intended outcomes.
Approach	<u>Approach/method</u> to achieve output targets	Approach used to achieve outputs.
Expected Outcomes	Identification and description of a <u>strategy</u> to achieve outcomes (i.e., adoption/uptake, external use, or influence of the project output(s) by partners, stakeholders, clients).	<u>Achievement of significant outcomes</u> resulting from project outputs in a given year; Who used/adopted or was influenced by the output? Description of studies that give evidence of achievement of outcomes.
Expected Development Impacts	Identification and description of <u>strategy</u> to achieve long-range impacts (i.e., social, environmental and economic benefits that are consistent with USAID goals and the Pulse CRSP’s global vision and objectives)	<u>Progress towards achievement of impacts</u> resulting from project outcomes in a given year; Efforts made to extend project outputs broadly within and across regions so as to maximize benefits to the widest possible audience (i.e., industry groups, public institutions, development organizations, etc.); Studies conducted to document the evidence of impacts.

2. STRATEGY FOR SUPPORT AND ACHIEVEMENT OF IEHA OBJECTIVES

A major focus of the proposed technical approach for the Pulse CRSP will be on Sub-Saharan Africa where one in three people are undernourished mainly due to the inability to grow or purchase food. The global vision of this CRSP is based on the conviction that increased economic growth, driven by agriculture, is essential to address the challenges of hunger and poverty in Africa. In this respect, the projects to be funded by the Pulse CRSP will support the goals of the *Presidential Initiative to End Hunger in Africa* (IEHA) and the *Comprehensive African Agricultural Development Program* (CAADP) framework adopted by the African Heads of State and Government as part of the NEPAD initiative.

The integrated research, training and outreach projects addressing the needs of dry grain pulse value-chains under the Pulse CRSP will be designed in accord with the following “Pillars” and cross-cutting themes being advocated as priority investment strategies by both the IEHA and CAADP. A minimum of 25% of CRSP resources will be directly invested in projects that contribute to achievement of IEHA objectives in Africa, with particular emphasis on IEHA designated countries of Ghana, Niger, Mali, Malawi, Mozambique and Zambia.

a. Science and Technology: Over the past four decades, science for agricultural development has played a catalytic role in delivering benefits to farmers, processors and consumers in the form of knowledge and technologies. The proposed Pulse CRSP is first and foremost a research program built on the principle of applying science to alleviate constraints to the production, utilization and consumption of bean, cowpea, and other dry grain pulses. The essence of the Pulse CRSP’s science and technology strategy is to generate knowledge and technologies that will raise long-term productivity and competitiveness of dry grain pulse food crop sectors in selected countries. The goal is to harness the power of cutting-edge research tools and technologies to improve product quality, reduce risk and vulnerability, relieve pressure on natural resources, reduce post-harvest losses, help farmers connect and respond to markets, assist entrepreneurs in developing profitable enterprises, raise farm incomes, and lower the price of pulse grain and food products to consumers. This investment strategy of the Pulse CRSP directly contributes to the IEHA pillar of “science and technology,” considered key to accelerating the development of science-based solutions for African farmers’ problems.

b. Global Partnerships: For agricultural “science and technology” to have impact, multiple players in a Research and Development (R&D) value-chain, extending from discovery to adoption, must be involved. The establishment of collaborative partnerships among U.S. universities, international scientists, and African researchers is in fact foundational to the CRSP model. This model espouses to the idea that the involvement of multi-disciplinary teams of scientists are essential for finding sustainable solutions to challenges facing agriculture. Natural and social scientists increasingly need to work in partnership, and collectively interact with national and regional policy makers, local communities, private sector organizations and development experts. Networking among scientists serving the bean and cowpea sectors provides opportunity to share lessons learned and exploit regional technological advances for the benefit of local small-holder farmers.

c. Support of Other IEHA Pillars—Linking Producers to Markets and Reaching Out to the Vulnerable: Pulse CRSP research, training and outreach projects will contribute to other USAID IEHA pillars to reverse the trends of hunger and poverty in Africa. An anticipated outcome of projects under the global theme of “increasing the utilization of pulse grain, food products and ingredients so as to expand market opportunities and improve community health and nutrition” will be linkages between producers of dry grain pulses and markets. Similarly, projects under the global theme of “reducing production costs and risks for enhanced profitability and competitiveness” will contribute to the IEHA objective of reaching out to the vulnerable. Pulse CRSP projects will generate new knowledge and technologies that improve productivity and reduce production risks resulting from drought, extreme temperatures, pests and diseases, and poor soil fertility.

D. FOCAL AREAS FOR DEVELOPMENT RESULTS

The scope of the proposed Technical Program for the Pulse CRSP is ideally positioned to address the below mentioned five Focal Areas by producing outputs that will lead to developmental outcomes of importance to USAID. The proposed strategy for addressing these focal areas includes: a) identifying one of these focal areas (e.g., health and nutrition) as a priority topical area, b) integrating the focal area objective of gender equity into the design of all research, training and outreach activities, and c) including focal area objectives in projects

addressing relevant topical areas. IPM, soil and water quality, and biodiversity objectives will be achieved in projects relevant to topical areas under the global theme “reducing production costs and risks.”

1. IMPROVING HUMAN HEALTH AND NUTRITION

Among staple foods, pulses have high potential for impacting global nutrition and health. The majority of poor in Africa, Asia and Latin America consume nutritionally rich pulses. Pulses clearly provide dietary solutions to child malnutrition and the growing global epidemic of chronic diseases (per WHO, 2005) especially among urban populations. By the year 2020, the percentage of deaths and disabilities due to non-communicable diseases worldwide is projected to reach 73%. The increasing incidences of cardiovascular disease, type 2 diabetes, obesity, and cancers are best addressed by prevention; promoting healthy diets that include pulses and exercise. The proposed research under the “Increasing Utilization” theme will increase knowledge on the bio-active constituents in beans and cowpeas. This information will contribute to the breeding of new cultivars with higher nutrient content, the preparation of more healthful bean/cowpea foods, the implementation of consumer education programs, and the enhanced effectiveness of food aid programs by NGOs.

MSU proposes that the Pulse CRSP provide intellectual leadership in the area of Health and Nutrition for EGAT/USAID’s **Focal Point for Development** as identified in the *Revised Collaborative Research Support Program Portfolio* (2005). MSU has comparative strength in this area as evidenced by: (1) the identification of ‘Food and Health’ as a priority cross-cutting theme for MSU’s College of Agriculture and Natural Resources; (2) the leadership role of Dr. I. Widders in the ‘Beans for Health Alliance,’ a Global Developmental Alliance funded by USAID with >\$2 million of in-kind contributions from the dry bean industry; and (3) the research by Dr. M. Bennink at MSU demonstrating a link between bean consumption and reduced risk of colon cancer with support from the Bean/Cowpea CRSP.

2. MAXIMIZING SOIL AND WATER QUALITY AND PRODUCTIVITY

The ‘Production Cost and Risk Reduction’ Global Theme will contribute to improving soil and water quality by supporting research on integrated crop management approaches which increase sustainability and mitigate the effects of low fertility and drought on pulse crop production. Well managed pulse-based cropping systems have low dependency on N fertilizer, are efficient in the uptake and utilization of phosphorus (P) and water from the soil, and contribute to improvements in soil quality. Emerging research indicates that the inclusion of deep rooted pulse crops in rotation with cereals promotes long-term growth in the soil biota (microbial flora) thus, enhancing soil quality and long-term productive potential. The development and widespread adoption of bean and cowpea genotypes with increased drought tolerance and water-use efficiency will reduce crop dependency on irrigation in certain agroecologies. Water can then be allocated to other components in the agricultural system so as to maximize overall productivity.

3. ADVANCING INTEGRATED PEST MANAGEMENT PRACTICES

Insect, disease and weed pests represent major constraints to pulse productivity and their management substantially adds to the cost of production. The most environmentally-sound and cost-effective approach to pest management remains the implementation of integrated pest management (IPM) strategies that involve the use of genetically improved varieties. Despite

significant gains in breeding for resistance to biotic stress factors over the past two decades, major challenges remain. Durable resistance genes are still needed for such pests as pod borers and thrips in cowpea, and stem maggot, Common Bacterial Blight, root rots, anthracnose, rust and web blight in beans. Tools of modern molecular genetics, including marker-assisted selection, are expected to accelerate gene exploration and the combining of resistance genes with desired agronomic traits. Under the 'Production Cost and Risk Reduction' Theme, the Pulse CRSP will support genetic improvement research that reduces dependency on agro-chemicals for pest management. IPM approaches are also needed to control bruchids during post-harvest storage in cowpeas and beans, a pervasive problem in Sub-Saharan Africa. Implementation of IPM is considered essential to achieving the objectives of sustainable integrated crop management systems; profitability, judicious use of inputs, conservation of biodiversity, and improvement of human welfare.

4. ACHIEVING GENDER EQUITY

Women play vital roles in all subsectors of pulse value-chains in Africa and Latin America. Not only do women frequently assume the primary responsibility for growing pulses and other crops for household food security, but many women are entrepreneurial and market bean and cowpea grain or processed foods locally. In Sub-Saharan Africa, women account for 70-90% of household food production, while in East Africa women comprise 54% of the total work force in the agriculture sector. Nearly 100% of the *Kosai* (a deep fried cowpea fritter) processors/vendors in West African countries such as Niger, Senegal and Mali are women. Among the indigenous Andean populations in Ecuador, Peru and Bolivia, the production of common, fava and lima beans are the responsibility of largely women.

Ensuring gender equity, access to technology and improvement of the livelihoods of women will be cross-cutting within the Pulse CRSP and an integral part of all aspects of program conceptualization, design, implementation and assessment. Proposals for sub-contracted projects will be required to describe how gender issues have been considered in project planning and design. The recruitment and training of women in critical areas of agricultural science where under-represented will be a priority in the Pulse CRSP. Women need to be prepared for positions of leadership in national research programs, private industry and public service. Satisfactory inclusion of gender into the project proposal will be a criterion for selection and funding of projects.

5. CONSERVING BIODIVERSITY

Conservation of biodiversity applies not only to the flora and fauna in agro-ecosystems, but also to the insect and microbial populations within those systems. Biodiversity conservation issues are extremely important in the Pulse CRSP since beans and cowpeas are indigenous to Latin America and Africa, respectively. Wild species and domesticated land races of *Phaseolus* and *Vigna* frequently exist in close proximity to cultivated beans and cowpeas. Within the ecosystem, bacteria (e.g., *Rhizobium* sp., etc.), fungi, nematodes, insects, birds, etc. have evolved in association with these pulse species. Cultural management interventions can potentially alter the ecological balance of these associated organisms, many of which are beneficial, thus influencing their continued survival. For example, the introduction of a new variety into an area presents risks of gene flow into native land races and undomesticated populations of beans and cowpeas. Although most such genes are beneficial, the potential exists for gene flow to affect the survivability of other important organisms within the ecosystem. The Pulse CRSP is

committed to the maintenance of biodiversity for the purposes of sustainability of cropping systems in developing countries.

High consideration will be given to funding projects in the Pulse CRSP that focus on assessment of diversity of both beneficial and destructive organisms in pulse-based agro-ecosystems, and the monitoring of genetic changes and spatial movement over time of these organisms. This information is essential for crop risk assessment, cultural management decision making, and for priority setting of future research. In addition, the Pulse CRSP will require that all projects under Theme 1, “Reducing Bean and Cowpea Production Costs and Risks,” consider and address as appropriate biodiversity concerns and opportunities during their design and implementation. Biodiversity conservation will be especially important in the topical areas of genetic improvement, integrated cropping systems, IPM, seed quality, and sustainability of seed systems.

E. STRATEGY FOR HUMAN RESOURCE DEVELOPMENT AND INSTITUTIONAL CAPACITY BUILDING

Institutional capacity building has traditionally been a cornerstone of the CRSP model. Within the Pulse CRSP, institutional capacity building will be an integral, cross-cutting component of all sub-awards. Salient features of the CRSP training and institutional capacity building model include: a) The integration of human resource development through degree and non-degree short-term training into research project workplans of both the U.S. and host country partners; b) Direct supervision of degree training at a collaborating university by CRSP PI(s); c) Trainees conduct thesis research on topical areas identified in CRSP project workplans; and d) CRSP trainees continue to collaborate with U.S. PIs after completing degrees due to the strong mentor relationships that develop during the degree training phase.

Michigan State University is committed to innovation and the use of cost-effective approaches for CRSP training. This innovation is evident in the USAID Initiative for Long-term Training and Capacity Building (UILTCB) which MSU administers. Unique features of the UILTCB model include: a) Trainees are nominated for a M.S. degree by a host country institution selected for institutional capacity building in accord with the USAID Mission’s strategic objectives; b) Trainees are enrolled in U.S. university graduate programs that meet trainees’ professional interests and HC institutional needs for capacity building; and c) Trainees spend a maximum of one year (3-4 semesters) in the U.S. and return home to complete their thesis research under the supervision of a host country mentor. The reduced time that a trainee is in residence at a U.S. university, lowers the cost of training and limits the time that a trainee is on study leave away from his/her job.

In the proposed Pulse CRSP, MSU combines the features of the traditional CRSP model and the UILTCB pilot program to elevate institutional capacity building to that of a Global Theme and thus a program priority. Through the Pulse CRSP, developing country professionals will have access to the most prestigious agricultural universities and pulse research laboratories in the world. The Pulse CRSPs institutional capacity building strategy will encompass both degree and short-term training. Guiding principles for training include: a) cost-effectiveness; b) innovation; c) gender balance; and d) demand-driven (i.e., building institutional capacity in key areas of research, teaching and outreach in accord with priorities and identified needs of HC institutions). The strategy will include the following elements:

a. Using Leveraged Funds to Achieve Dual Goals—Achieving Research Objectives and Building Human Resources: The integration of institutional capacity building and training into Pulse CRSP research projects will be an explicit requirement in the RFPs and annual workplans. CRSP PIs will be required to budget project funds to support students enrolled in degree programs under the direct supervision of CRSP PIs. The integration of training with on-going research programs of the Principal Investigators (PIs) ensures cost-sharing by universities in the form of reduced tuition, reduction in overhead and/or partial support for tuition and research costs. The integration of training with research has the added benefit of enhancing the academic experience, providing relevance (opportunity for involvement in research that addresses developing world problems) and effectively preparing students for professional research careers. Through the mentorship of the professor, trainees will be prepared to administer and compete for funds for a research program when they return to their home institution.

b. Support Trainees from Host Country Institutions to Meet Capacity Building Goals: The Pulse CRSP will seek to match identified human capital/training needs of host-country institutions with training opportunities afforded through the sub-contracted projects. The Management Office, in consultation with USAID Missions and host country partner institutions, will develop a human resource capacity building plan for selected host countries, especially IEHA countries. Where the plan identifies areas for graduate-level degree or short-term training in alignment with Pulse CRSP's global themes, the ME will work with PIs of subcontracted projects to ensure that recommended trainee candidates from the respective institutions and countries are given high consideration. This training will then be integrated into CRSP project workplans and budgets as an institutional capacity building activity for that host country. Cost share from U.S. and HC partner institutions will be required on these training activities. PIs will be expected to leverage funds from other sources (e.g., private sector, foundations) to stretch the CRSP support for training. The ME proposes to also establish a budget line of funds to be distributed on a competitive basis to address specific institutional capacity building needs and stimulate innovation in new cost-effective approaches to address human resource capacity building needs of HC institutions.

c. Using Advanced Regional Institutions for Degree and Short-term Training: Since demand for human resource development is anticipated to far exceed the availability of financial resources, the Pulse CRSP will utilize "advanced" HC universities for certain degree and short-term training. Past experience through the Bean/Cowpea CRSP indicates that selected HC universities have faculty with expertise in pulses and offer high quality post-graduate programs in specialized areas at a reasonable cost. The Pulse CRSP, therefore, proposes to utilize the following advanced institutions as appropriate for post-graduate degree training: the University of Ghana-Legon, Ghana, Sokoine University of Agriculture, Tanzania; Makerere University, Uganda; Egerton University, Kenya; University of Pretoria, South Africa; and the University of Costa Rica, Costa Rica. Creativity in training program design will be encouraged by the ME so as to build partnerships between U.S. and HC universities, to keep costs low, and to improve the quality of training programs. Suggested partnering strategies include sandwich programs, opportunities for students at advanced HC universities to conduct research in laboratories in the U.S., professional internships in the U.S. with private and public sector organizations, jointly offered Internet-based distance-education courses, and faculty exchanges for the instruction of specialized courses at partner universities.

d. Short-Term Training in Cutting-Edge Technologies, Tools and Management Skills: The ability to utilize technologies and to manage and commercialize the flow of goods and services generated by those technologies are essential for achieving economic growth. The Pulse CRSP is committed to providing opportunities for host country scientists, students and managers to have access to modern cutting-edge technologies, research tools and program management techniques/ principles through short-term training opportunities. The Pulse CRSP will require PIs to be responsive to the short-term training needs of host country partner institutions and to incorporate this training into workplans and budgets. Creative approaches to short-term training will be promoted including: technical training at a center for excellence, offering and teaching short-courses in host countries, organizing regional workshops on topics of broad interest, support for internships and sabbaticals, training-of-trainers workshops, etc. Short-term training will be encouraged on such topics as agribusiness development and competitiveness, entrepreneurship, grant writing, and outreach programming to achieve developmental impacts, professional ethics, gender and biodiversity.

e. Support to Address Facilities and Professional Development Needs: Achievement of institutional capacity building goals requires more than investments in training. The Pulse CRSP will seek to be responsive to the holistic needs of HC institutions by providing support for facilities and professional activities that enhance an institution's capacity for research and outreach. To this end, the Pulse CRSP will fund scientific equipment, computer technology, irrigation systems, etc. that are justified and considered essential for the conduct of CRSP research and outreach activities. In addition, projects may include support for research sabbaticals for HC scientists to develop new research skills, participation of HC scientists in regional networking meetings and professional conferences, and visits to research programs and industries in other regions and continents (i.e., visits by African PIs to Latin American institutions) to learn from one another.

II. MANAGEMENT APPROACH

A. CAPACITY OF PROPOSED MANAGEMENT ENTITY

1. LEADERSHIP OF MICHIGAN STATE UNIVERSITY

Michigan State University (MSU) has the unique combination of outstanding capacity and a commitment to global outreach to provide leadership to the Pulse CRSP. Since its founding in 1855 as the first land grant university in the U.S., MSU has adhered to its original mission: “to strive to discover practical uses for theoretical knowledge, and to speed the diffusion of information to residents of the state, the nation, and the world.”

The MSU College of Agriculture and Natural Resources (CANR) has a long and distinguished history of involvement in international programs, with over half of its 450 faculty having participated in more than 175 MSU international projects related to agriculture, natural resources, institution building and rural development. In accord with its land-grant mandate, the CANR seeks to serve the interests of agricultural and natural resource sectors in Michigan, as well as the country and world. The dry bean industry is vitally important to MSU because of its contribution to Michigan’s agro-economy. Michigan ranks #2 in the U.S. in dry bean production. In an effort to support the continued growth and competitiveness of the dry bean industry, the CANR is committed to maintaining its national/international leadership role by seeking to house the Management Office (MO) of the Pulse CRSP. Administrative support for MSU’s role as the Management Entity (ME) is evidenced in a letter from Dean Jeffrey Armstrong (see Annex 3) and by MSU’s provision of a major in-kind contribution (>\$723,000).

2. CAPACITY TO UNDERTAKE MANAGEMENT ENTITY RESPONSIBILITIES

As the ME of the Pulse CRSP, MSU has the capacity to efficiently administer a productive multi-institutional, multi-disciplinary, multi-regional integrated research and training program in partnership with the Office of Agriculture, EGAT/USAID Washington, and to provide the needed technical leadership to achieve program objectives in a manner consistent with USAID’s *Policy Framework for Bilateral Foreign Aid*.

a. Outstanding Performance Record: Michigan State University has demonstrated the capacity to effectively administer a CRSP through its 27 years of service as the ME for the Bean/Cowpea CRSP. As noted by the EEP in the Five-Year Technical Review of the Bean/Cowpea CRSP (2006), “*MSU exhibited exceptional leadership during a period characterized by dramatic change (appointment of new Director and Deputy Director in 2000 and the establishment of a new program in 2002). Its administrative prowess enabled it to build on lessons learned, respond to changing USAID priorities, take advantage of advances in science, address emerging new challenges of the bean and cowpea sectors, change program design for greater regional impact, provide competitive opportunities for new scientist and university engagement, strengthen ties with private and public stakeholder groups, while all along maintaining continuity of purpose and competent staff in the MO. The satisfaction and consistent support provided by partner U.S. universities and HC institutions for MSU’s role as the ME give evidence of exceptional management capacity and ability to implement a first rate CRSP program.*” (See representative letter of support from the Principal of Bunda College of Agriculture, Malawi, in Section IV.)

b. Distinctive Capacities: Capacities that distinguish and uniquely position MSU to serve as the “Leader University” and Management Entity for the Pulse CRSP include:

Technical expertise and administrative experience to design and implement a global research, training and outreach program- The proposed Director, Dr. Irvin Widders, and Deputy Director, Dr. Mywish Maredia, have extensive administrative experience having been responsible for the design and successful implementation of the revitalized Bean/Cowpea CRSP (2002-07). The technical leadership capability of this MO team is attributable in part to the complementary disciplinary expertise in crop physiology and agriculture economics of the Director and Deputy Director. Both Drs. Widders and Maredia have academic appointments at MSU, Full Professor and Adjunct Associate Professor, respectively, which directly links them to the academy and provides voice. Between the two, they have over 30 years of research and teaching experience, extensive professional involvement in international programs (e.g., IARCs, NGOs, USAID programs, international research collaborations), direct experience working in numerous regions of the world (Latin America, Africa, and Asia) and fluency in multiple languages.

Demonstrated leadership in institutional capacity building- The USAID Initiative for Long-Term Training and Capacity Building (UILTCB), a pilot program funded by the EGAT/USAID-Washington, was designed by Drs. Widders and Maredia in partnership with USAID and is being administered by the CRSP MO staff (2005-09). Profiting from the lessons learned, including the creative new features of the UILTCB program, the focus on responding to HC institutional capacity needs, reducing degree program costs, limiting U.S. residency, and partnership with HC USAID missions, MSU will be positioned to implement a revitalized CRSP training program.

USAID Contracts and Grant Administrative Experience- The MSU Office of Contract and Grant Administration (CGA) holds fiscal authority and responsibility for the MSU contractual portfolio with USAID. The University receives nearly \$35 million annually in externally funded international projects, approximately \$15 million of which is from USAID. CGA is responsible for the financial and legal aspects of MSU’s externally supported grants and contracts. CGA administers approximately \$250 million annually in expenditures, of which >\$150 million are from Federal sources. To ensure that MSU complies with USAID regulations and provides quality services, CGA has staff dedicated to the administration of USAID contracts.

Extensive expertise in “bean research” and international programs for consultative purposes- An extensive multi-disciplinary cadre of faculty engaged in bean/pulse research at MSU is accessible to the MO staff for advice on technical matters. These include such internationally recognized professors as Dr. James Kelly (geneticist/plant breeder), Dr. Maurice Bennink (human nutrition), Dr. Rick Bernsten (production economics), Dr. Anne Ferguson (Women in Development), Dr. Diane Ruonaavara (resource development and extension), Dr. Scott Swinton (environmental economics), Dr. Sieglinde Snapp (sustainable cropping systems), and Dr. Mark Uebersax (food science), just to name a few. Of these, four had been employed at IARCs to work on beans and other related pulses and grains including Kelly (CIAT), Bernsten (IRRI), Swinton (CIP) and Snapp (ICRISAT).

Strong linkages with “bean” industry groups- The MO has cultivated strong ties with private bean industry groups in Michigan, the U.S. and globally. These relationships ensure consideration of stakeholder input into the technical direction of the Pulse CRSP and thus, a clearer understanding of “relevancy” of outputs from CRSP activities to growth and competitiveness of the pulse sub-sectors. The Pulse CRSP will also be well positioned to mobilize private sector resources to provide technical assistance to pulse value-chain sub-sectors. This linkage is evidenced by Dr. Irvin Widders’ appointment to the Board of the U.S. Dry Bean Council (USDDB) and membership on the Health and Promotions Committee (see letter from Cindy Brown, USDDB in Section IV).

Leadership in human health and nutrition research- The Pulse CRSP is positioned to assume an immediate intellectual leadership role in ‘human health and nutrition,’ a proposed *Focal Area for Developmental Impact*. Dr. Widders was instrumental in creating an industry vision for the establishment of the *Beans for Health Alliance* (BHA), a Global Developmental Alliance supported by USAID. In recognition of MSU’s leadership, the BHA sub-contracted with MSU for the administration of the “*Bean Health Research Program*” with Dr. Widders serving as Director (2003-06). The ME is committed to providing scholarship on the role of agriculture in addressing global human health and nutrition issues and to be an advisor to EGAT and the CRSP community on this Focal Area.

B. ORGANIZATIONAL STRUCTURE OF THE MANAGEMENT OFFICE

1. STRUCTURE OF THE MANAGEMENT OFFICE

a. Goals of the Proposed Management Office Structure: Michigan State University proposes a Management Office (MO) structure, based on the following guiding principles, to serve as the main operational administrative unit of the program:

- 1) **Streamlined Administrative Team:** The Management Office will be staffed with a quality administrative team: Program Director (0.9 FTE), Program Deputy Director (0.5 FTE), Administrative Officer (1.0 FTE), and a Clerical staff person (0.5 FTE). This represents a staff reduction of 0.8 FTE from the current Bean/Cowpea CRSP MO. This management team will work closely with the MSU Office of Contract and Grant Administration to ensure quality contractual and financial administration of both the Leader and Associate awards.
- 2) **Centralized Administrative Functions:** The proposed MO structure will provide centralized administrative functions for the Pulse CRSP that include, but are not limited to: a) development of sub-agreements with lead U.S. universities receiving sub-awards; b) oversight of the preparation and implementation of workplans for research and training projects; c) receipt, administration and monitoring of the use of USAID funds; d) accounting to USAID for program accomplishments and expenditures, including the required match through reports; e) obtaining necessary USAID clearances and approvals as per the ADS regulations; and f) development and implementation of project review and evaluation procedures to ensure high performance and achievement of program objectives.
- 3) **Cost-Effectiveness and Value:** The proposed administrative management costs of the Pulse CRSP will be 22% of the program budget over the five years. As a Leader Award recipient, MSU is proposing to match about 31% (US \$723,818) towards administrative management and program implementation costs budgeted under the ME over the five

years of the grant. This match includes paying approximately 1.2 years (out of five years) of the Program Director's salary and contributing more than \$440,000 of in-kind contribution by reducing the NICRA from the on-campus (51% MTDC) to off-campus rate (26% MTDC). This allows nearly 75% of the program funds to be invested in research, training and outreach for long-term impacts with additional match to be contributed by sub-awardees. Other cost control measures proposed by MSU include the elimination of top heavy governance structures, the use of electronic means for communication and reporting (e.g., CRSP Online Reporting System, electronic newsletters, email, electronic conferencing, etc.) and the reduction of MO staff. This requires that certain functions be out-sourced (e.g., website, publications, etc.) and/or the employment of students.

- 4) **Core Values:** The MO is committed to the following "Core Values" for the administration of the Pulse CRSP: quality client-oriented management, excellence in all activities, honesty and integrity, respect for diversity, innovation for improved effectiveness and efficiency, and communication and consultation with partners. To ensure accountability and objectivity in management, the MO will work closely with advisory groups (e.g., TMAC, Administrative Advisory Committee) and establish a manual on policies and guidelines for the program.

b. Roles of the Management Office: MSU, through its program Management Office, is committed to fulfilling with excellence the following roles in the Pulse CRSP:

- 1) Establish and manage a portfolio of high quality, innovative and integrated research, training, and outreach projects related to pulses (e.g., beans and cowpeas) that speak to the needs of the stakeholders, policy makers and development professionals. This entails: putting in place a competitively selected project portfolio; establishing MOUs and sub-agreements with participating institutions; facilitating communications within and among projects to promote multi-disciplinary collaboration, maximize synergies and avoid duplication; and being the primary point of contact for USAID for acquiring synthesized information on progress and outputs from CRSP activities.
- 2) Track progress of sub-awards, prepare annual reports, and collect success stories of where outputs contributed to changes in policy, practices or developmental impacts, synthesize information to formulate coherent program results and lessons learned, and distribute widely this information to partners and stakeholders.
- 3) Fulfill financial management and reporting responsibilities to USAID.
- 4) Develop, implement and actively participate in program level strategies to gain additional support and resources for broader developmental outcomes and impacts.
- 5) Administer Associate awards received from USAID country Missions and regional bureaus.
- 6) Contribute to the goals of the CRSP Council and provide intellectual leadership in a focal area for developmental impact (e.g., health and nutrition). The MO will monitor the scientific literature, synthesize information, engage in scholarly discourse and writing on important global development issues, and be a resource to USAID and the international development community.
- 7) The MO will be the primary point of contact for USAID and act as an "on call" advisor and intellectual resource to USAID on substantive issues and technical assistance services associated with dry grain pulses.

c. Responsibilities of the Proposed Management Office Staff:

Program Director: Oversee day-to-day programmatic and financial management of the Pulse CRSP; Monitor the technical aspects of the projects and organize activities to facilitate achievement of program goals; Administer the RFP process for sub-awards; Organize and supervise the CRSP MO staff to carry out the functions, responsibilities, and support of the project; Assure compliance with USAID and MSU regulations and guidelines; Represent the Pulse CRSP in CRSP Council and stakeholder meetings; Provide intellectual leadership for one of the USAID focal areas; Serve as a primary contact for the USAID CTO, PIs, advisory groups and the pulse industry; Coordinate and participate in advisory group meetings; Respond to requests from USAID/W, Missions, and Regional offices; Actively seek opportunities for and negotiate leveraged Associate awards; Coordinate implementation of research programs with U.S. and HC institutions and IARCs; Facilitate the establishment of sub-awards and MOUs with U.S. and HC institutions; Maintain regular communication and interaction with the administrative offices of the ME—CANR Institute of International Agriculture (IIA), Office of the Dean of International Studies and Programs, Office of Contracts and Grant Administration, etc.; Generate professional reports and documents for management advisory groups and USAID/W; and Produce scholarly outputs related to the contributions of pulse research and training to development.

Deputy Director: Serve operationally as the secondary administrative officer in line with USAID guidelines and MSU regulations and procedures. Responsibilities include: Backstopping the Director; Participate in all MO staff functions; Assist in organization of staff responsibilities and carry out tasks identified; Oversee the MO in the Director's absence; Assist in the administration of competition for sub-awards; Perform administrative support functions for the CRSP training and capacity building efforts; Assist the Director in M&E of projects, especially socio-economic research, and in organizing activities to facilitate overall technical achievement; Maintain a trainee database; Synthesize information and prepare Annual Research/Training Reports; Accompany the Director as needed to governance committee and CRSP Council meetings; and Prepare materials for newsletters and briefs highlighting major results and achievements.

Administrative Officer: Plan and supervise the fiscal management of the Leader award: Maintain computerized financial records of all projects; Monitor total project costs against obligations; Monitor cost share and U.S. and HC expenses; Prepare financial reports (including pipeline, accruals); Prepare financial reports and present them to advisory groups; Act as a liaison between the MO and the USAID's OAA; Monitor compliance with USAID grant requirements; Maintain frequent communication with the USAID's OAA on fiscal matters; Develop and maintain the *Operations and Policy Manual*; Provide budgetary and compliance support to program sub-awards; Organize and conduct workshops for financial officers as appropriate; Develop and process sub-agreements and periodic amendments for sub-awards; Conduct site visits to resolve fiscal problems and conduct informal internal audits of projects; Arrange travel and conference/meeting accommodations for MO organized events; Process MSU travel notifications and requests for reimbursement for domestic and international travel related to MO functions; and Perform fiscal management responsibilities for Associate awards.

Clerical Staff Person: Assist in the preparation of reports, newsletters, brochures and other promotional materials/publications; Maintain mailing and distribution databases and program

directories; Respond to requests for CRSP publications; Ensure adherence to USAID branding and marking rules in CRSP promotional materials; and Initiate requisitions for MO supplies.

Other ME staff: Other support staff may be seconded from IIA, CANR and ISP to assist the Management Office in accomplishing management responsibilities on an as-needed basis. The talents of graduate students will also be utilized for specific program management tasks.

d. Director Replacement: In the event that the Director leaves his/her position in the MO, MSU's Dean of the College of Agriculture and Natural Resources will be responsible for initiating an open competitive search process and identifying a qualified replacement. The goal will be to find a tenured professor with extensive international and research program administration experience within the ranks of MSU with knowledge of the pulse sector for the Director position. The CTO will be consulted on the position description and invited to be involved at all steps during the process.

e. Qualifications of Key Personnel: MSU proposes the following ME staff for the key positions of Program Director and Deputy Director: Dr. Irvin E. Widders and Dr. Mywish K. Maredia, respectively. The full CV for Dr. Irvin Widders is included in Annex 2.

Dr. Irvin Widders, current Director of the Bean/Cowpea CRSP (2000-06), is a tenured full Professor in the Department of Horticulture within the College of Agriculture and Natural Resources (CANR) at MSU with expertise in environmental plant physiology. During the course of his 25 year career at MSU, Dr. Widders administered a research program which served the needs of the fresh and processing vegetable industries in Michigan, receiving competitively awarded USDA, NSF and private industry grants. Dr. Widders has been a member of over 90 M.S. and Ph.D. guidance committees serving as the major Professor for twelve. He taught courses in vegetable production, environmental physiology, and plant mineral nutrition. In recognition of his professional expertise, Dr. Widders served from 1991-99 on the Editorial Board of "*Scientia Horticulturae*," the Journal for the International Society for Horticultural Science. Dr. Widders has provided leadership to MSU in academic programming by serving on numerous undergraduate/graduate curriculum and academic policy committees and chairing the University Graduate Council (1996-97). Dr. Widders received recognition for his contributions to the "Task Force for Curricular Revitalization" whose recommendations resulted in major changes in the structure and requirements of academic programs in CANR. In 2002, Dr. Widders was honored as the "Outstanding Advisor of the Year" by MSU's Office of Student Life. Dr. Widders' international experience began in Costa Rica and Honduras (1969-72) where he worked on vegetable crop production and marketing. Throughout his career, he has consulted and participated in USAID, World Bank and NGO projects in Zimbabwe, Vietnam, Uruguay and Honduras. In 1994, Dr. Widders spent a sabbatical leave at la Escuela de Agricultura para la Region Tropical y Humeda (EARTH University), Costa Rica, where he lectured in Spanish. Dr. Widders currently coordinates MSU study abroad programs in Peru and Costa Rica (at EARTH) and serves on the Advisory Council for the Center for Latin American and Caribbean Studies. Since 2000, Dr. Widders has served as the Director for three USAID funded programs; the Bean/Cowpea CRSP, the "Bean Health Research Program" of the Beans for Health Alliance and the USAID Initiative for Long-Term Training and Capacity Building (UILTCB) jointly with Dr. M. Maredia. In recognition of his leadership, Dr. Widders was elected Chair (2002-04) and Vice-Chair (2005-present) of the CRSP Council. At MSU, Dr. Widders is a member of the

university level International Program Directors Council through the Office of the Dean of International Studies and Programs and the CANR International Program Directors' Roundtable.

Dr. Mywish Maredia is the Deputy Director of the Bean Cowpea CRSP and Adjunct Associate Professor in the Department of Agricultural Economics at MSU. She has over 13 years of experience in international research and development. As part of the CRSP MO team, she also directs the UILTCB program for Zambia and Ghana. Dr. Maredia has continued to pursue scholarly interests and professional engagements that contribute to her professional development as well as bring dividends to the CRSP MO. She has worked as a consultant with many international organizations including, the World Bank, FAO, CGIAR, CIMMYT and WIPO, and published several papers and made presentations at international conferences/workshops. She has worked extensively in the area of the economics of agricultural research and development, plant breeding research, impact assessment, seed system development and policies, and the economics of biotechnology, IPRs and biosafety. As a result of her international recognition and her expertise on assessment of research impacts, she has been appointed to and currently serves on the CGIAR Science Council's "Standing Panel on Impact Assessment" (SPIA).

2. STRUCTURE, FUNCTIONS, & RESPONSIBILITIES OF GOVERNANCE BODIES

a. Program Organizational Structure: Figure 1 gives an illustrative overview of the proposed organizational structure for the Pulse CRSP. This structure includes: 1) USAID through EGAT and the Office of Acquisitions and Assistance (OAA); 2) MSU through the Contract and Grant Administration Office (CGA) and the Management Office housed in the Institute of International Agriculture (IIA), CANR; 3) Partner U.S. universities and Host country institutions through their respective contract offices, Institutional Representatives and Principal Investigators (PIs); and 4) three advisory groups--External Advisory Panel (EAP), Technical Management Advisory Committee (TMAC), and the Administrative Advisory Committee (AAC).

Well-defined lines of communication will be established between the various bodies as illustrated by the arrows in Figure 1. Substantial interactions are depicted by darker arrows. The rationale for the proposed structure is to ensure accountability for performance of the technical program and fiscal management. Three main organizational groups exist within this proposed structure (depicted by dark bold box lines in Figure 1)—USAID as the funding agency, MSU as the ME, and U.S. and HC institutions as managers of sub-awards (yet to be identified). The individuals and offices within these three organizational groups will have distinct roles, functions and responsibilities in the technical and fiscal management of the CRSP. The grant contract document between USAID and MSU will spell out the obligations of the ME. The CTO, appointed by EGAT in consultation with the ME, will maintain direct lines of communication with the ME (principally with the MO) for technical direction (as defined in the terms for substantial involvement in CRSPs). The USAID OAA will be responsible for fiscal and contractual oversight. The relationship between MSU and sub-award institutions will be defined by a MOU, sub-agreements, project workplans, and amendments for obligations of funds. The MO within the ME will serve as the operational administrative unit and provide leadership on technical and financial management. The MO will draw technical expertise and resources from MSU's IIA and CANR. The office of CGA at MSU will be responsible for contractual administration of the Leader Award with USAID and all the sub-awards with partner institutions.

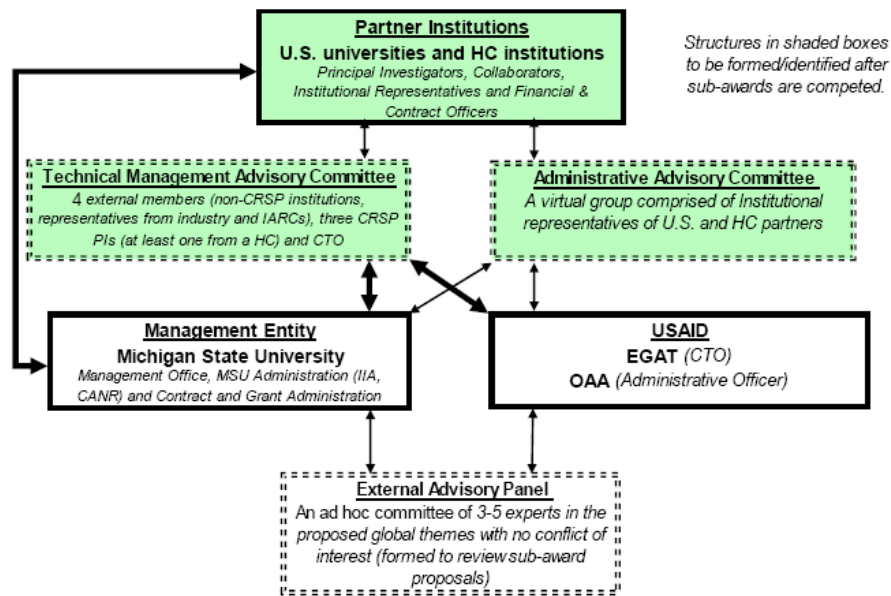


Figure 1: Overview of the Proposed Organizational Structure of the Dry Grain Pulses CRSP

The U.S. and HC partner institutions to be involved in the Pulse CRSP will be sub-contracted to implement projects. Principal Investigators (PIs) and collaborators at these institutions will plan, execute, supervise and report on all activities for their sub-awarded projects. PIs will be accountable for the successful completion of research, training and outreach activities and contributions to the achievement of global program objectives as outlined in the workplans. The PIs will interact directly with the ME through the MO. The Office of CGA at MSU will oversee the contractual relationships between MSU and the contract and grant offices of the respective partner institutions. The ME will utilize the institutional representatives (IRs) from the sub-contracted institutions to address issues regarding the implementation of Pulse CRSP projects that necessitate administrative intervention. Mechanisms such as workplans, technical and financial reports, institutional site visits, periodic evaluations and audits will be used by the ME to ensure accountability and compliance.

b. Advisory Groups: Three advisory groups to the ME will be established for the Pulse CRSP; an External Advisory Panel (EAP), a Technical Management Advisory Committee (TMAC), and an Administrative Advisory Committee (AAC). This governance structure has advantage over the current structure for the Bean/Cowpea CRSP. It involves fewer layers of administrative oversight, reduced conflict of interest, and lower cost. Specific terms of reference for each of these groups will evolve with input from USAID after the Leader award is made and will be incorporated in the *Operations and Policy Manual* of the Pulse CRSP.

External Advisory Panel: An EAP will be convened ad-hoc for review of proposals and consultation on the selection of projects to constitute a quality and coherent portfolio of sub-awards for the Pulse CRSP. The EAP will not be a permanent advisory group for the five-year duration of the grant, but will be convened when sub-awards are competed. The composition of the EAP will consist of 3-5 individuals as justified. The EAP will be formed with input and concurrence from the CTO based on the following criteria: a) no conflicts of interest with institutions identified in proposals for sub-awards; b) expertise in technical areas relevant to

Topical Areas in the RFP, c) knowledge of international agriculture development issues and d) experience in agriculture research administration.

Technical Management Advisory Committee: The TMAC will be an advisory body that performs both strategic planning and monitoring functions. The MO will consult with the TMAC on emerging issues and technologies, strategies for building sustainable institutional capacity and achieving development impacts, and program management approaches. The TMAC will also assist in the monitoring and evaluation of the CRSP program, including: 1) monitoring the scientific quality and productivity of projects and recommending adjustments; b) reviewing project workplans and budgets; and c) identifying potential topical areas for future sub-awards. The TMAC will be comprised of seven members; two external individuals of international stature, one industry representative, one representative of an IARC, three CRSP PIs including at least one from a HC, and the CTO (who will have a vote). The TMAC will be formed after the sub-awards are selected and partner institutions identified. The four non-CRSP external members will be appointed by the MO in consultation with the CTO for the five-year duration of the Leader award based on their qualifications and experience. The three internal members (CRSP PIs) will be elected by the PIs for staggered two-year terms of service. The TMAC will hold three face-to-face meetings over the five-year period, but is expected to conduct most of its business through conference calls and electronic communication.

Administrative Advisory Committee: The Administrative Advisory Committee (AAC) is envisioned as a virtual committee comprised of Institutional Representatives (IRs) with responsibility to approve an *Operations and Policy Manual* for the Pulse CRSP, to provide advice in addressing program implementation issues, and to provide administrative support for CRSP PIs at their respective institutions. The IRs, typically Deans or Directors, are designated by the administration of each university/institution participating in the CRSP. The AAC will interact via email or conference calls. The MO will engage IRs directly regarding personnel issues including the replacement of a PI, poor project performance, etc.

C. STRATEGY FOR PROGRAM PLANNING, REPORTING AND ANALYSIS

1. GLOBAL PROGRAM PLANNING AND IMPLEMENTATION STRATEGY

The MO will be responsible for the implementation of a portfolio of multidisciplinary collaborative research/training projects involving teams of U.S. and HC scientists and institutions supported through EGAT/USAID core funding. The implementation process of the Global Program for the proposed CRSP was conceptualized with the following objectives in mind:

- To award sufficient projects to capture the breadth of multi-disciplinary scientific capacities of the U.S. universities so as to build a robust program that effectively addresses the constraints and emerging opportunities of the bean/cowpea sectors in developing countries,
- To foster interdisciplinary, multi-commodity and cross-regional collaboration to achieve efficiencies and coordination,
- To implement innovative cost-effective new approaches for institutional capacity building and human resource development,
- To institute mechanisms to ensure that projects achieve benchmarks and provide opportunity to redirect funds so as to be responsive to emerging new issues or opportunities, and

- To view CRSP investments in sub-awards as “seed monies” for leveraging additional funding from government agencies, foundations, and private and public sector groups.

a. Global Program Structure: MSU is proposing to implement a two-phase technical program with two award cycles (2.5 and 2 years) for the initial five-year authorization of the Pulse CRSP (2007-12). Supplemental funds will be set aside to provide added incentive to sub-awardees for innovation and achievement of institutional capacity building goals. The majority (nearly 75%) of the core funding will be competitively awarded for multi-institutional projects that focus on two or more priority topical areas and USAID IEHA objectives. The initial contracts for such research and training projects will be for a two-and-a-half year period with the possibility of a two-year extension contingent on acceptable technical performance and achievement of benchmarks. The advantage of a two-phase program is that it provides an opportunity for midstream assessment and thus technical and budgetary adjustment of projects. It also enables the funding of shorter duration projects and the opportunity to respond to emerging issues.

b. Program Planning and Management: Needs assessments, prioritization, focusing, planning, coordination, innovation, monitoring and reassessment are iterative ongoing-activities in the management of a comprehensive CRSP research, training and outreach program. The ME plans to utilize the TMAC as the principal advisory body for many of these functions. Subsequent to the selection of sub-awards, the TMAC will be asked to review and provide guidance to PIs regarding proposed workplans, to recommend funding levels for projects, to assess achievement of benchmarks, and to advise on strategies for achievement of developmental outcomes in the Pulse CRSP. The TMAC will play an especially important role during the third year of the program in providing recommendations to the MO on the extension of projects and the selection of Topical Areas for short-term projects during the final two years of the program.

c. Facilitating Communication and Coordination Among Projects: Experience has shown that networking, collective planning, and the coordination of research and training activities among projects does not occur without structures that facilitate interaction among scientists and institutions. To this end, a Global Program PI Meeting will be convened after projects to be subcontracted have been selected (within the first six months of the grant). This Global PI Meeting will provide opportunity for U.S. and HC scientists to refine their research approaches, develop collaborative research and training workplans, network and coordinate activities with other project teams, and to formulate strategies for leveraging additional resources. A similar meeting is planned for the beginning of the fifth year, after Phase 2 projects have been awarded.

MSU is committed to the use of modern electronic communication technologies for reporting and communication purposes. These include the use of the CRSP On-line Reporting System for the submission of workplans, budgets, and travel and progress reports. Electronic newsletters and a new CRSP website will enable rapid dissemination and increased access to CRSP information for both participants as well as stakeholders. Conference calls and Internet-based phones (e.g., Skype) will be used to the extent possible to save on travel and communication costs. The MO views the use of electronic technologies as important components to building the capacity of developing country institutions to become globally engaged.

d. Contractual and Fiscal Management: The ME will establish a Memorandum of Understanding (MOU) with all U.S. and HC institutions selected to participate in the Pulse CRSP. Sub-agreements will be established with Lead U.S. universities to manage projects comprised of sub-subcontracted HC partners and other U.S. institutions. The ME will establish standards to ensure expeditious obligation of funds, processing of invoices and reimbursement of expenditures so as to ensure timely cash flow to HC institutions. The rapid negotiation of sub-agreements is especially critical for the implementation of the short-term awards (e.g., 30 and 24 month awards). The sub-agreements will clearly specify federal regulations and contractual obligations required by USAID of the recipient of the Leader award (the ME university).

The ME will utilize a spread sheet-based financial management system for improved efficiency and quality control, to enable effective monitoring of Host Country expenditures relative to budgets, and to facilitate financial reporting to USAID and partner institutions. Monitoring with up-to-date financial information is critical for the assessment of accruals, pipeline funds, cost share, and alignment of expenditures with budgets, all of which can serve as indicators of potential financial management problems. Unannounced audits of sub-contractors may be conducted by the ME if evidence of financial or contractual management problems emerges.

An Operations and Policy Manual, to be developed for the Pulse CRSP, will address appropriate steps for project implementation, procedures for financial management, policy regarding encumbrances, procedures for travel notification, authorization for equipment purchases, and guidelines for participant training.

2. STRATEGY FOR PROGRAM M&E, REPORTING AND SYNTHESIS

a. Compliance with USAID Reporting Requirements: The ME will collect and compile the necessary program reporting documents for all sub-contracted projects and submit them to USAID as required in the contract with the ME. Such documents include detailed workplans and budgets for all research, training and outreach projects, annual technical progress reports and final project reports.

b. Monitoring and Assessment Plan: The use of performance indicators, annual progress reports and institutional site visits will constitute the primary mechanisms for monitoring and assessment of projects. Annual reports will provide a basis for assessment of scientific quality, technical progress toward benchmarks, effectiveness in the use of funds, collaboration with both CRSP and other programs, leveraging of additional resources, and effectiveness in the dissemination of outputs to end-users to achieve intended outcomes. Of particular importance will be evaluative feed back to PIs from the MO at the end of the first year of the projects. This information will enable PIs to better understand program expectations and provide opportunity for interventions and mid-course adjustments to ensure success in achievement of development objectives. The TMAC will be the principal advisory group responsible for regular monitoring and assessment of technical progress and for advising the MO on technical and budgetary matters. The Program Director and Deputy Director are committed to maintaining active interactions with U.S. and HC PIs. Through visits to participant HC and U.S. institutions, they will gain insights into the conduct of projects, and be able to address performance issues.

c. Ongoing Program Improvement and Responding to Emerging Issues: The use of two award cycles within a five-year authorization of the Pulse CRSP provides a mechanism for effective technical program management. Technical assessments of projects, consideration of lessons learned, and identification of emerging issues affecting pulse value-chains during Phase 1 (initial 30 month award period) will be instrumental in providing direction and defining foci of projects during Phase 2 (final 24 months). Performance concerns will be addressed by requiring appropriate changes in technical direction or approach during the second phase of extended projects. Having short-term projects in the portfolio will enable the MO to also respond to new needs and opportunities identified by pulse research communities, private sector groups, and USAID Missions in developing countries.

d. Program Synthesis and Reporting: A key role of the MO will be to periodically prepare synthesis reports of the aggregate program to inform stakeholders of potential contributions of outputs to development outcomes. These syntheses of the Pulse CRSP will be published as annual program highlights, white papers and bulletins and distributed to government ministries, stakeholders of pulse value-chains, NGOs, IARCs, and USAID Missions along with partners in the Pulse CRSP. Program synthesis will involve regular and systematic recording of research outputs (i.e., significant findings, publications, technologies, etc.), short-term and degree training data, contributions to institutional capacity building, and of outreach/technology dissemination activities and achievements in databases. These databases will be structured by thematic area to record activities that contribute to special targets in gender equity, biodiversity or to categories within the *USAID Policy Framework for Bilateral Foreign Aid*.

e. Leadership in a Focal Area: The Director and Deputy Director have the responsibility afforded by the administrative platform of the ME to draw upon the expertise and development experiences of the scientific community both within the ME and partner institutions so as to provide intellectual leadership to a specific “focal area” of global developmental importance. Leadership implies engagement in scholarly activities that define and bring attention to major issues, facilitate international dialog on solutions, and encourage strategic responses. The ME proposes the focal area of “Improving Human Health and Nutrition” as being most appropriate for the Pulse CRSP. In this role, the MO would compile, synthesize, and disseminate scholarly information plus create venues for dialog within the CRSP and international development communities. The ultimate objective will be to influence the thinking of government and private organizations of the important link between human health and nutrition, agriculture productivity, economic growth, and societal welfare, to stimulate dialog regarding innovative new approaches (i.e., public - private sector alliances, etc.) to address major global health and nutritional crises (e.g., obesity, HIV/AIDS, child and maternal malnutrition, etc.), and to be an advocate for leveraging new resources for this area.

D. PLAN FOR COMPETITION, SELECTION AND MANAGEMENT OF SUB-AWARDS

1. GOALS BY THE ME FOR THE COMPETITION AND SELECTION PROCESS

- To expedite the process so as to be able to establish sub-agreements with lead partner U.S. universities and HC institutions within six months of the start of the new Pulse CRSP,
- To provide opportunity for all U.S. universities and colleges including minority serving institutions to compete and participate in projects on a “level playing field,”

- To minimize transaction costs in terms of proposal requirements for sub-awards without compromising on program quality and coherency,
- To involve qualified external individuals with no conflicts of interest in the review of proposals for sub-awards, and
- To implement a system of checks and balances to ensure integrity, transparency, fairness and accountability of the process.

2. PROCESS FOR COMPETITION AND MANAGEMENT OF SUB-AWARDS

a. Preparation and Issuance of the RFP: The goal of MSU is to initiate and complete the competition process expeditiously, so as to establish sub-awards and initiate research and training projects as soon as possible. If selected as the ME of the Pulse CRSP by USAID, MSU proposes to issue a Request for Proposals (RFP) for sub-contracted projects in mid-2007. The goal is to receive, review and select new sub-awards by September-October 2007. The ME would then negotiate and finalize MOUs and sub-agreements for projects with partner institutions and oversee the development of workplans so that projects can be initiated within six months of the start date of the Pulse CRSP (August-September 2007). This time-line is critical for the implementation of the proposed two award cycles.

The RFP will be prepared in consultation with the USAID CTO (see the sample of the RFP in the “Sample Solicitation” section). The RFP will be distributed broadly using electronic list serves (NASULGC, etc.) and posted on the Pulse CRSP website. The MO will make special effort to contact key administrators at minority serving institutions (e.g., 1850s, 1890s, Hispanic and Indian serving, etc.) to encourage their submission of proposals. A “pre-RFP notification” will also be distributed widely at least 2-3 weeks in advance of the issuance of the RFP.

b. Proposal Preparation: A two-step process involving the submission of both “Expressions of Interest to Participate” and “Full Proposals” is being proposed. The ME believes that the posting of Expressions of Interest on a web page for public viewing will encourage multi-institutional and multi-disciplinary teaming in the preparation of project proposals. Important information requested in the “Expressions of Interest” will include contact information of the institution, proposed PIs, topical areas of interest, commodity of focus (e.g., beans, cowpeas), and potential country(s) and HC institutions for collaboration. To ensure equal opportunity, those universities planning to submit a proposal as a Lead university of a sub-award will be required to submit an Expression of Interest. Only candidate lead U.S. universities may submit proposals for sub-awards. Interested ME faculty will also need to follow this process and compete just as those from other universities. The ME is willing to provide guidance to young faculty with no CRSP experience, but all shared information will be posted on a CRSP web page so as not to advantage certain applicants.

c. Review of Proposals: A transparent, objective and fair process will be implemented for the evaluation and selection of sub-awards. Eligible proposals will be reviewed by an External Advisory Panel selected ad-hoc with expertise in the relevant disciplinary areas but with absolutely no conflicts of interest. Proposed criteria for consideration in the evaluation and selection of projects for funding include: 1) Scientific merit, innovation and effectiveness of a technical approach to achieve objectives as related to a priority topical area(s); 2) Qualifications of PIs and research/training capacities of proposed U.S. and Host Country institutions for the conduct of the proposed project; 3) Effectiveness of proposed activities in building sustainable

capacity of strategic host country institutions in response to human resource and facility needs; 4) Contributions to USAID IEHA objectives; 5) Integration of essential program elements including gender equity, biodiversity conservation, and the consideration of social, political, economic and environmental influences of the potential adoption of research outputs (a systems approach); 6) Strategy to promote Mission and developing country policy maker engagement; 7) Identification of appropriate partners for dissemination of outputs to ensure achievement of developmental outcomes in host countries and regions; 8) Cost-effectiveness and justification of the budget for the proposed activities; 9) Likelihood that proposed benchmarks will achieve measurable development outcomes.

d. Selection of Sub-awards and Implementation of Program: A comprehensive conceptually coherent global program of up to nine sub-contracted core projects will be configured for the Pulse CRSP in consultation with the EAP and the CTO. The goal of the ME is to constitute a portfolio of projects that will collectively enable the program to achieve 3-5 major developmental outcomes during the initial five years of the award.

The ME will commence the implementation process by negotiating MOUs and sub-agreements with the selected participant U.S. and HC institutions. Prior to the obligation of funds and initiation of research/training/outreach activities, the MO will initiate an iterative process with the newly identified Principal Investigators that will culminate with the submission of workplans and budgets for the respective projects. During this process, the MO will request that PIs address technical issues of concern identified by external reviewers and adjust budgets (if necessary). The final step in workplan and budget preparation will occur in the context of the Global Program PI Meeting to be attended by selected U.S. and HC PIs from all projects. The purpose of this meeting is to facilitate networking, collaboration and community building, the refinement of workplans so as to address gaps and avoid duplication, to explore opportunities for leveraging new resources, and the development of plans for ongoing engagement with country and regional USAID Missions. Prior to making sub-awards, the MO will seek USAID Mission concurrence and input regarding the Pulse CRSP projects in the respective countries. Non-concurrence by a Mission may result in a project not being funded. Approval of workplans will be obtained from TMAC before funds are obligated to sub-contracted institutions.

e. Ongoing Consultation with PIs during Project Implementation: ME responsibilities continue at all stages of project implementation. The ME believes that a culture of partnership and open communication among the PIs and the MO are essential for a successful Pulse CRSP. To that end, the MO will seek to regularly interact with project PIs, respond to technical and financial management challenges, monitor research progress and achievements, meet infrastructure and human resource needs of HC institutions, and exploit possible opportunities for expanded CRSP engagement with USAID Missions and other programs.

3. MISSION AND STAKEHOLDER ENGAGEMENT

The ME is committed to pursuing partnerships with USAID Missions. The MO plans to constitute a portfolio of research, institutional capacity building and development projects that have strong Mission interest and involvement. The MO will also proactively engage country USAID Missions at various stages during the implementation of the Pulse CRSP. Mission representatives will be invited to participate in project events and meetings with HC stakeholder groups. The MO will consult with Missions concerning foci of projects to be competed and

implemented during the last 24 months of the five-year grant as well as for the five-year extension. Copies of all technical reports and white papers generated by the Pulse CRSP will be distributed in a timely manner to Missions. The hope is that Missions will view the Pulse CRSP as a valued resource and involve PIs in strategic planning activities.

E. IMPLEMENTATION OF ASSOCIATE AWARDS

Michigan State University is well positioned to manage Associate Awards due to its extensive experience in administering numerous highly successful bilateral awards from USAID Missions and Regional Bureaus (e.g., Food Security III in Zambia and Mozambique, Pearl in Rwanda, ABSP I in Egypt, etc.). As the ME for the Pulse CRSP, the MO recognizes the importance of providing technical support services to field Missions and Bureaus in a manner consistent with USAID's *Foreign Assistance Framework*.

As the "Leader" of a Leader with Associate (LWA) award involving sub-contracts with many partner institutions, MSU is committed to providing unbiased representation of the capacities of the community of U.S. and HC scientists and institutions which participate in the Pulse CRSP. The proposed Director and Deputy Director have an outstanding record of promoting the global program and will strive to be an honest "broker" for the Pulse CRSP.

The Pulse CRSP can provide a broad range of deliverables to Missions to achieve their in-country foreign assistance and development objectives including:

- Technologies to enhance the productivity and marketability of beans, cowpeas and related pulses including pigeonpeas, fava beans, chickpeas, and lentils.
- Capacity for cost-effective training (e.g., short courses, graduate degree training).
- Consultative services in such areas as biotechnology, disease diagnosis, market development, food processing, human health (including child and maternal health and HIV/AIDS), community nutrition, and extension methodologies (farmer field schools).
- Development assistance in partnership with pulse industry groups (i.e., farmer organizations, food companies, etc.), development contractors and NGOs.
- Research to find solutions to crisis situations (crop disease outbreaks).
- Seed of improved bean and cowpea varieties for distribution to farmers in response to natural and political disasters.

Through the Leader with Associate award mechanism, USAID Missions can readily contract with the ME for associate awards to be implemented by any of the sub-contracted U.S. partners in the Pulse CRSP and allocate funds to the respective institution. In response to the interests of USAID, the ME and its future partners will be willing to prepare concept papers and full proposals for consideration. The selection of U.S. universities to receive Associate Awards may be achieved either through open competition or the matching of Mission need for deliverables with clear and predominant capacity of a particular university.

III. SAMPLE SOLICITATION

DRY GRAIN PULSES COLLABORATIVE RESEARCH SUPPORT PROGRAM

REQUEST FOR PROPOSALS

This Request for Proposals (RFP) is issued by the Management Entity of the Dry Grain Pulses CRSP, 321 Agriculture Hall, Michigan State University, East Lansing, MI 48824, USA.

Website: <http://www.isp.msu.edu/CRSP> Email: xyz@msu.edu

Important Dates: Date of issuance of RFP: xx/xx/2007

Deadline for receipt of “Expressions of Interest to Participate”: yy/yy/2007

Deadline for receipt of Proposals: zz/zz/2007

Target date for announcement of selections: ww/ww/2007

The Dry Grain Pulses Collaborative Research Support Program (CRSP), managed by Michigan State University under a five-year award from the U.S. Agency for International Development (USAID), invites proposals for collaborative research, outreach and capacity building projects on beans and cowpeas that will generate mutual benefits to developing countries and the U.S. Proposals must target regions and themes in furtherance of the development goals of USAID’s Office for Economic Growth, Agriculture and Trade, as described in this RFP. Projects are to be led by a U.S. university with collaborative activities subcontracted to other U.S. and Host Country partner institutions. Eligible “lead” universities include U.S. land-grant universities, colleges, and minority-serving institutions as defined by the Title XII legislation of the Foreign Assistance Act of 1961 (and its subsequent amendments).

Up to nine multi-institutional and multi-disciplinary projects addressing the global themes of reducing production costs and risk, increasing utilization, improving performance and sustainability of value-chains and building institutional capacity will be funded under this RFP. The total award period of funded projects will be 30 months with the possibility of a 24-month extension contingent upon acceptable performance and relevance of project focus. Total financial support for projects will range from \$300,000 to \$450,000 for the 30-month period.

TOPICAL AREAS FOR RESEARCH, OUTREACH AND CAPACITY BUILDING

The overall research context for this RFP is poverty alleviation through income generation and improvements in nutritional and food security for sustainable development of the dry grain pulse sectors. The research priorities of the Dry Grain Pulses CRSP are reflected in the following four global themes (goals):

Global Themes of Dry Grain Pulses CRSP:

- A. To reduce bean and cowpea production costs and risks for enhanced profitability and competitiveness.
- B. To increase the utilization of bean and cowpea grain, food products and ingredients so as to expand market opportunities and improve community health and nutrition.
- C. To improve the performance and sustainability of bean and cowpea value-chains, especially for the benefit of women.

- D. To increase the capacity, effectiveness and sustainability of agriculture research institutions which serve the bean and cowpea sectors and developing countries.

The integrated research, capacity building and outreach projects of the Dry Grain Pulses CRSP will be organized by topical areas under these four global themes. **Topical Areas** are recommended areas for research inquiry to address priority constraints under a global theme. A coherent portfolio of research projects will be selected and managed by this CRSP in a manner that achieves maximum developmental impacts and addresses USAID policy documents and guidelines described in this RFP. Proposals should put forward an innovative research, capacity building and outreach plan that will result in the generation of technologies, practices, knowledge and recommendations **in a minimum of two Topical Areas** under the four Global Themes described below. **At least one of these topical areas must address Global Theme D, “Capacity building and sustainability of agricultural research institutions.”** The text under each topical area is provided for illustrative purposes and is not intended to be prescriptive.

A. Topical Areas under the Theme of “Production Cost and Risk Reduction”

The success of commodity value-chains is largely contingent upon the ability of the production sector to consistently provide the desired agricultural products, with the required quality attributes, in adequate quantities and at competitive prices to satisfy target markets. The Dry Grain Pulses CRSP is therefore seeking proposals in the following Topical Areas which contribute to lower costs of production and minimize risks for resource-poor farmers and traders of beans and cowpeas.

1. Genetic Improvement for Increased Productivity: The planting of improved varieties of beans and cowpeas with resistance to biotic and abiotic stresses, desired agronomic traits, and stable high yield potential in distinct agro-ecological zones is a sustainable and cost-effective approach for resource-poor small-scale farmers to increase crop productivity and reduce risk. Although gains have been made over the past two decades in genetic improvement, major challenges remain. The Dry Grain Pulses CRSP seeks innovative research proposals that will utilize traditional breeding techniques and modern tools of molecular genetics (i.e., gene mapping, marker-assisted selection, micro-array analysis, etc.) to improve the rate and efficiency of genetic improvement and to develop a new generation of pulse varieties to meet market demand and enable resource-poor farmers to be competitive.
2. Integrated Crop Management: Resource-poor farmers must have access to knowledge regarding effective integrated crop management (ICM) approaches to be able to reduce production costs, effectively manage production risk factors, and increase cropping system sustainability through conservation of the natural resource base. Consideration of long-term sustainability, including conservation of biodiversity, must be reflected in all production management decisions including cultivar selection, meeting the mineral nutrient requirements of the crop, soil quality improvement, adoption of integrated pest management practices, and the implementation of appropriate cropping systems (i.e., crop rotations, intercropping, etc.). The Dry Grain Pulses CRSP is therefore seeking research proposals with the objective of developing appropriate and sustainable integrated crop management approaches to increase the productivity of beans and cowpeas on low fertility soils and to manage economically important pests for the specific agro-ecologies where these crops are grown.

3. Mitigating Effects of Low Soil Fertility and Drought: Low soil fertility and drought persist in being the primary constraints to increased pulse productivity in Sub-Saharan Africa and Latin America. New cost-effective and sustainable approaches are needed to address these recalcitrant production constraints. The redesign of root architecture and genetic improvement of root and whole-plant physiological traits afford promise in mitigating the effects of these abiotic factors. ICM approaches (i.e., conservation tillage, fertilization strategies, modification of plant spacing, etc.) which enhance the efficiency of nutrient and water uptake and utilization by bean and cowpea crops would be worthy areas of inquiry.

4. Grain Quality: The quality of bean and cowpea grain produced by resource-poor farmers is a frequent constraint to competitiveness in regional and global markets. Multidisciplinary research and outreach projects that contribute to improvements in grain quality attributes for trade are needed. Important quality factors of potential focus include cooking time, seed coat integrity and color retention, incidence of insect and disease damage, composition of nutritional constituents (i.e., protein, sugar, etc.), and food processing attributes.

5. Sustainable Seed Systems: Farmer access to quality seed of improved varieties of beans, cowpeas and related pulses presents a challenge to increasing productivity. The fact that pulses are self pollinated, enables farmers to retain seeds for planting from one season to another, and reduces private sector incentive for investment in seed system development. Proposals investigating approaches and interventions to improve farmer access to improved seeds of beans and cowpeas are invited. Potential objectives for research and outreach activities under this Topical Area include: a) to develop sustainable seed multiplication and dissemination systems for pulse crops, b) to increase access to affordable quality seed by resource-poor (especially women) farmers in Sub-Saharan Africa, and/or c) to investigate appropriate seed system policies that promote conservation of biodiversity.

B. Topical Areas under the Theme of “Increasing Utilization”

Increasing global consumption and utilization of beans, cowpeas and related pulses is a priority theme of the Dry Grain Pulses CRSP. Value-chains cannot grow unless consumption and thus market demand increase for bean and cowpea grain, fresh plant parts (e.g., leaves, fresh pods, peas, etc.), processed foods, and ingredients. Suggested Topical Areas for research, training and outreach that contribute to increased utilization include:

1. Health and Nutritional Attributes: Obesity and associated chronic diseases are reaching epidemic proportions in many developing countries, especially among urban populations. Nutritional research indicates that regular pulse consumption reduces the risk of chronic diseases including cardiovascular disease, type 2 diabetes and cancers plus enhances satiety, thus providing a food-based solution to a growing global health crisis. Worthy areas of inquiry might include identification of bio-active compounds in beans and cowpeas that provide specific health benefits, increasing understanding of the functional properties of these constituents, and enhancing the content and activity of health promoting compounds through plant breeding, cultural management and processing. Research proposals are also sought to better understand the nutritional contributions of beans and cowpeas to growth and cognition of young children and the slowing of the progression of HIV to AIDS.

2. Consumer Attitudes and Preferences: For continued increases in global bean and cowpea consumption and utilization, food processors and producers must understand and respond to shifts in consumer attitudes and preferences. In both developed and developing countries, the demographic of consumers is changing. In general, potential pulse consumers of tomorrow will be younger, live in urban areas, lead a fast-paced life, and tend to associate beans and cowpeas with traditional diets of the poor. Research is needed to understand dietary attitudes and food preferences of target populations, especially urban poor which constitute a major market for bean- and cowpea-based foods in the future. Such information will give direction to public/private sector education and promotional programs to change the image of pulses and to food processing entrepreneurs regarding demand for value-added bean/cowpea-based food products.

3. Influencing Decision Makers: The experience of certain countries indicates that pulse consumption tends to decline when consumers are presented with greater food choices (e.g., resulting from the emergence of supermarkets) and have greater disposable income for food purchases. Due to the association of pulses with traditional diets, there is a general lack of appreciation for the health and nutritional benefits of eating pulses. To reverse such trends, public and private sector interventions to influence decision makers are justified. Research is needed to link health consequences with dietary shifts away from beans and cowpeas and the projected long-term costs to society for consequent increases in health care costs. Investigations into the cost/benefits of investments in public initiatives that promote the integration of locally produced pulse crops into public health and nutrition education programs, food assistance programs, and feeding programs (e.g., school lunch programs) in terms of increased productivity and reduced health care costs would be important. Policies that might result from such studies would bring societal benefits as well as generate increased demand for bean, cowpea and related pulses in domestic markets.

4. Urban Consumer Access to Foods: Urban consumers, which represent the largest market segment for pulses and value-added foods, demand affordable, nutritious, processed convenience foods and ingredients with appropriate flavors and textures for the local pallet. In developing countries with emerging food industries, food science and nutrition research is needed to add knowledge to the base of the functional (including biochemical and physiological) characteristics of beans and cowpeas. Multi-disciplinary studies are also needed on value-chain economics, food distribution chains, market basket surveys, and the relationship of culture with food and diets to identify niches for bean/cowpea-based food products in urban markets. In response to the growth of cottage industries managed by women entrepreneurs which prepare consumer ready food products in many African and Latin American countries, appropriate food processing technologies (e.g., extrusion, etc.) are needed to enable these enterprises to be productive and profitable.

C. Topical Areas under the Theme of “Performance and Sustainability of Value-Chains”

Successful commodity value-chains that extend from producer to consumer are characterized by strong and interconnected sub-sectors which understand the importance of consumer demands and markets as driving forces. In order to achieve improved performance and sustainability of bean and cowpea value-chains, the Dry Grain Pulses CRSP seeks projects that integrate the following Topical Areas with research addressing either production (Theme 1) or utilization (Theme 2) constraints. The goal of requiring a value-chain approach in this CRSP is to ensure

that research is relevant, demand-oriented and leads to development impacts. Suggested topical areas include:

1. Understanding constraints to smallholder pulse farmer participation in markets and trade: Due to the globalization of grain trade, producers and traders in developing countries need to be able to identify regional and global market opportunities for beans and cowpeas as well as position themselves to be more competitive in ever changing domestic markets. The objectives of activities under this topical area are: a) to link producers to local, regional and international markets, and b) to ensure that research outputs have effective demand from end-users. The expectation is that the knowledge and technologies generated by the Dry Grain Pulses CRSP will be adopted either by small-scale farmers or processors to add value to pulse products in markets. The Dry Grain Pulses CRSP invites proposals for innovative research, capacity building and outreach projects that achieve these objectives and promote smallholder farmer (including women and indigenous groups) participation in markets and trade. Proposals are especially welcome that address this topical area by focusing on a specific output to be generated under another topical area.
2. Identifying "weak links"/constraints in the functionality of dry grain pulse value-chains: Bean and cowpea value-chains involve many actors dealing with these commodities, ranging from agricultural input industries to the final consumer, via production, transportation, processing, and marketing. Research and outreach activities are needed to address constraints that will strengthen the value-chain and ensure that buyers and sellers are linked throughout the chain. Projects under this topical area should not only describe strategies for identifying "weak links" in the value-chain but also seek to explain how the proposed activities will provide direction for further research and developmental activities.
3. Identifying strategic public sector interventions to alleviate constraints or market failures in partnership with other public and private sector institutions: One of the goals of research on value-chains is to identify weak links caused by market failure. Such failures result in insufficient private sector incentive to participate in meeting the needs of certain members of the value-chain due to the nature of the commodity or its market. The Dry Grain Pulses CRSP invites proposals in this topical area to identify and implement strategies for public sector involvement in strengthening the value-chain (e.g., adaptive research, outreach, training, linking producers/processors to technologies, etc.).

D. Topical Areas under the Theme of "Capacity Building and Sustainability of Agriculture Research Institutions"

For CRSP research to achieve long-term development impacts, strong and responsive public-private sector institutions are needed with a commitment to serve the dry grain pulse sectors. In many developing countries, critical institutions lack the human resources, infrastructure, and capacity to provide the needed assistance. In recognition of the importance of building institutional capacity and sustainable agricultural research institutions, the Dry Grain Pulses CRSP considers this theme to be "cross-cutting." Therefore, **all project proposals must address at least one of the topical areas described below.** The Dry Grain Pulses CRSP also invites stand-alone proposals addressing two or more topical areas under this Global Theme (D).

1. Building and promoting partnerships with key stakeholders (in public and private sector institutions): The objective of this topical area is to promote the adoption of research outputs (technologies, practices, knowledge, information and recommendations) generated from the three global themes – reducing production costs and risks, increasing utilization, and improving the performance of pulse value-chains. Project proposals addressing the other Global Themes should present a partnership building plan to ensure that the development of knowledge and technology, and its dissemination are closely tailored to the needs of the commodity sector. The design of research projects should integrate development strategies that engage key stakeholders (i.e., government agencies, NGOs, CSOs, farmer organizations, private companies) to enable the generation, financing and dissemination of innovations.

2. Strengthening regional dry grain pulse commodity research networks: Participation of bean and cowpea scientists in regional networks has been effectual in improving research collaboration and coordination and contributing to the dissemination of improved germplasm. The networks in Sub-Saharan Africa (e.g., PRONAF, SABRN, ECABREN) and Latin America and the Caribbean (e.g., PROFRIJOL) have lost much of their international donor support in recent years, even though their existence is more justified than ever. As a cross-cutting theme, the Dry Grain Pulses CRSP encourages proposals that provide opportunity for weaker national research programs in strategic countries to network with advanced programs within their respective region. Networking might involve coordinated testing of new technologies through regional trials, the sharing of germplasm, division of responsibilities in collaborative research projects, regional workshops, and joint short-term training activities. The goal is to generate dual benefits--to strengthen the national programs that are part of these regional research networks as well as to increase regional impacts of CRSP research.

3. Training young scientists in the use of modern tools for research, in research program management, and for service to private and public sectors: Due to scientific advances and the emergence of new research areas, an ongoing commitment is required to prepare NARS scientists with the skills and knowledge to exploit these opportunities. Proposals addressing this topical area should describe innovative and cost-effective training approaches for developing human resources and building institutional capacity in strategic areas of agriculture science that would benefit the bean and cowpea sectors. Proposals should lay-out clear plans for short- and/or long-term training that will contribute to building sustainable capacity of host country research institutions and help them link with bean and cowpea stakeholders. If a training plan requires more than 30 months to complete (i.e., Ph.D. degree training), proposals should outline a strategy for leveraging additional support. If the proposed training plan requires support from the Dry Grain Pulses CRSP beyond 30 months, the proposal should include a clear justification, a time-line for completion of the training activity, and a separate budget line for the projected costs after 30 months.

ACHIEVING DEVELOPMENT IMPACTS

The Dry Grain Pulses CRSP aims to achieve concrete development impacts through the implementation of integrated research, training and outreach projects. Specifically, the Dry Grain Pulses CRSP is seeking to fund proposals that will:

- a. Proactively promote the adoption of technologies, practices, knowledge and recommendations that emerge from research,
- b. Conduct research in a manner that creates sustainable capacity for research and outreach through genuine collaboration with host country scientists, training of a new generation of scientists, partnership in the leveraging of new funds, and promoting linkages with stakeholder groups, and
- c. Support the development objectives and initiatives of USAID.

To achieve these goals, successful proposals must meet the following technical considerations:

Promotion of Research Outputs and Outreach

- Proposals must present a viable plan for outreach and dissemination of research results with the ultimate goal of achieving developmental impact. Suggested strategies to meet this expectation include the establishment of meaningful partnerships with public, private and NGO entities involved in development activities in host countries, alignment of CRSP projects with planned or existing USAID Mission development programs or initiatives of host country governments or private sector organizations, and the utilization of innovative outreach approaches (i.e., electronic media, community volunteers, etc.) to facilitate the dissemination of CRSP outputs.
- Proposals must include a detailed list of expected outputs/materials (benchmarks) from the proposed CRSP projects for which to be held accountable. Successful proposals will produce a variety of outputs/materials on development topics over the course of the 30-month award period including peer reviewed journal articles, reports in publications dedicated to development issues, and policy briefs. The objective is to make research and findings more accessible to policy makers, development professionals and lay people.

Collaboration and Capacity Building

- Projects must involve genuine collaboration between a Lead U.S. university and one or more Host Country institutions (NARS, agriculture universities, NGO, etc.) and other partners as needed (other U.S. universities/colleges, IARCs, private sector development organizations, etc.). Collaboration with multiple Host Country institutions is encouraged because of the benefits accrued by networking, access to resources, and the potential for broader geographical impact.
- As institutional capacity building is a priority global objective of the Dry Grain Pulses CRSP, proposals must present a compelling rationale for the selection of the Host Country institution(s) including evidence of need and interest by the respective institution(s).
- Proposals must describe an integrated research, training and outreach activity plan that addresses a minimum of two Topical Areas described in this RFP plus at least one Topical Area under the Global Theme of “building capacity and sustainability of agricultural research institutions.” Successful proposals are expected to devote at least 30% of project funds on HC capacity building activities (Topical Areas under Theme D).

Support of USAID Objectives and Initiatives

- Proposals must be consistent with USAID’s strategic objectives, goals and requirements as reflected in the *USAID Agriculture Strategy*, *Strategic Framework for Africa*, *USAID Policy Framework for Bilateral Foreign Aid*, and the Strategic Objectives for the respective USAID Missions in host countries of involvement. Cautionary note: The MO will seek USAID country-level concurrence prior to making sub-awards. Non-concurrence by a Mission may result in a project not being funded.
- The Dry Grain Pulses CRSP’s primary geographical focus for achieving development impact is on Sub-Saharan Africa with a secondary focus on Latin America. Proposals will be evaluated, among other criteria, based on the strength of linkages to host countries within the following general guidelines.
 - i. The proposal must focus on at least one USAID-eligible country (i.e., a country where USAID is present) in the two focus regions—Africa and Latin America. Project engagement in neighboring countries within the same region or across regions is encouraged. For a list of USAID-presence countries, see USAID’s website: www.usaid.gov.
 - ii. Recommended countries for future engagement by the Dry Grain Pulses CRSP include: In Africa: Angola, Burkina Faso, Burundi, Democratic Republic of Congo, Ghana, Mali, Malawi, Mozambique, Niger, Nigeria, Rwanda, Senegal, Tanzania and Zambia. In Latin America: Bolivia, Ecuador, El Salvador, Guatemala, Haiti, Honduras and Nicaragua. Proposals targeting activities in countries other than the recommended countries must be justified.
 - iii. USAID requires that 25% of the overall Dry Grain Pulses CRSP portfolio focuses on priorities and countries included in the President’s *Initiative to End Hunger in Africa (IEHA)* (http://www.usaid.gov/locations/sub-saharan_africa/initiatives/ieha.html). Current IEHA countries and regional programs identified are: Mali, Ghana, Niger, Zambia, Malawi, Mozambique, Uganda, Kenya, REDSO, WARP and RCSA. Proposals that fulfill IEHA objectives and collaboratively engage researchers, policy makers and development professionals involved with IEHA and CAADP in research design and implementation are highly encouraged.
- Proposals must describe a systemic process for engagement of Missions and, where appropriate, of developing country policy makers to ensure complementarities with Mission programs and achievement of developmental goals in the Host Countries.

Gender Equity and Other Considerations

- USAID policy requires that gender issues be addressed in all funded activities. To this end, the Dry Grain Pulses CRSP has set a goal to train an equal number of men and women in their long-term and short-term capacity building activities and tailor its research and outreach activities to women. Proposals must, therefore, present a gender inclusivity strategy; the integration of gender considerations into overall project design and implementation.
- Proposals must meet high scientific standards as assessed by peer review. Preference will be given to those activities which are multi-disciplinary in nature and involve modern research tools and methodologies of interest to developing country institutions.
- In compliance with Title XII legislation, proposals must demonstrate dual benefits to both Host Countries as well as U.S. agriculture.

BUDGET AND CONTRACTUAL CONSIDERATIONS FOR AWARD OF A CRSP PROJECT

- Each proposal must identify at least one Principal Investigator (PI) from a U.S. institution and one PI from a Host-Country institution. PIs are those individuals that assume the technical leadership and administrative responsibility for the project.
- Proposals must include a budget for a 30 month award with total funding ranging from \$300,000 to \$450,000. Since funding typically will be allocated on an annual basis, budgets should be broken down into three time periods: first 12 months (Period 1), subsequent 12 months (Period 2), and final 6 months (Period 3). As with all USAID contracts, all annual allocations will be contingent upon annual obligations of funding from USAID-Washington to the ME and performance under the provisions of the sub-agreements.
- Proposals must include a budget for each institution participating in the respective project, providing accurate estimates of institutional costs, negotiated administrative rates (e.g., indirect costs), and institutional match.
- A minimum of 50% of the direct funds must be expended in or on behalf of the Host Country Institutions participating in this CRSP. Higher percentages of funding budgeted for Host Country Institutions will, however, be viewed favorably.
- The Dry Grain Pulses CRSP requires that each research project provide cash or in-kind contributions (cost share) on funds received according to the following guidelines:
 - Each applicant Lead U.S. university must provide U.S. non-federal cost share as defined by the USAID reference document for cost-share -- 22CFR 226.23.
 - The cost-share required from each project is at least 25% of the total U.S. costs. U.S. costs include total costs (direct + indirect) budgeted for U.S. personnel (staff salaries and fringes, labor cost, consultants), supplies, equipment, travel and non-participant training in the U.S.
- The Dry Grain Pulses CRSP is responsible for contributing toward the overall USAID IEHA program by directing at least 25% of the total budget to support IEHA objectives. In order for activities to be attributed to IEHA targets, sub-awarded projects will be asked to report on USAID-established indicators.
- Budget proposals should include itemized support for degree and short-term training at both U.S. universities and/or advanced institutions around the world. All trainees that come to the U.S. must be in compliance with USAID guidelines for Participant Training (ADS 253).
- Proposals that leverage support from private and public sources (i.e., through grants, endowments, in-kind contributions) will be given high consideration. Leveraging provides opportunity to broaden the scope and extend outputs of CRSP projects.
- Upon project selection, Michigan State University will establish sub-agreements with Lead U.S. Partner Universities. The “Lead” universities will be responsible for negotiating sub-sub-agreements with partner institutions, oversight of collaborative activities, and compliance with reporting requirements for expenditures and project accomplishments.
- Technical program reporting requirements will include annual workplans and budgets, and annual activity reports summarizing results and accomplishments. In addition, PIs may be requested to prepare trip reports and research updates as needed.
- Research, training and outreach activities implemented under sub-awards will comply with the USAID guidelines and standards regarding environmental quality and sustainability, biodiversity conservation, soil quality, and IPM. In the event that a project under this CRSP

proposes to investigate the use of pesticides, Genetically Modified Organisms, or non-indigenous or non-endemic, non-established species, the PIs need to obtain approval via the ME from the EGAT Bureau's Environmental Officer before the activity is initiated.

- Studies involving human and animal subjects must obtain full review of protocols and approval from the appropriate U.S. Lead university review bodies before implementation in the U.S. and the Host Country.

PROPOSAL PREPARATION GUIDELINES

Expressions of Interest

Candidate "Lead" U.S. universities are required to submit an "Expression of Interest to Participate" no later than mm/dd/yyyy. Submission of an Expression of Interest is also encouraged from institutions interested in collaborating as partners. Expressions of Interest should be submitted to XYZ, Director, Dry Grain Pulses CRSP, via e-mail: <xyz@msu.edu> and should contain the name of the institution, proposed lead PI, Topical Areas of interest and potential host countries for CRSP activities. Information received from Expressions of Interest and responses to questions related to this RFP posed to the MO will be posted on a web page (www.isp.msu.edu/CRSP). The purpose of soliciting and posting "Expressions of Interest" is to provide opportunities for young scientists with limited international experience or institutions who have not participated in previous Bean/Cowpea CRSP projects to team-up and contribute to the preparation of competitive proposals.

Full Proposal

Full proposals will be the basis for the selection of projects for awards in the Dry Grain Pulses CRSP. Full proposals must be prepared according to the following guidelines:

a. Proposal Organization and Format: All proposals must contain the following elements:

1. Cover page (Project title, Lead U.S. university, U.S. and HC PIs, HC institutions, other collaborating institutions and scientists, total USAID funds requested, commitment of cost-share from non-federal sources, signature of the Lead U.S. PI and an authorized institutional signature)
2. Table of Contents
3. Proposal Summary (not to exceed two pages)
4. Technical Approach (eight pages)
 - Problem Statement and Justification- Identify constraint to be addressed. Discuss relevance to topical area(s) of importance to bean and cowpea value-chains. Describe contributions to Dry Grain Pulses CRSP global development objectives and themes. Present justification for research, training and/or outreach strategy to address the constraint. Provide evidence of knowledge of scientific literature.
 - Objectives- Identify coherent and concise objectives for the proposed project.
 - Approaches and Methods- Describe research and/or outreach approaches and methods. Identify modern cutting-edge research methodologies to be used.
 - Collaboration with Host Country Institutions- Present plan for collaboration and partnership in achievement of project objectives, including division of responsibilities and coordination of activities.
 - Benchmarks- Identification of specific outputs to result from the 30 month

project. Present a timeline for implementation with indicators to assess progress toward achievement of outputs.

5. HC Institutional Capacity Building (two pages)
 - Plan for sustainable institutional capacity building in consideration of HC institutional needs and priorities.
 - Strategy for human resource development involving innovative and cost-effective approaches for short- and long-term training.
6. Contribution to USAID Objectives and Initiatives (two pages)
 - Contributions of proposed activities to IEHA objectives and USAID's *Policy Framework for Bilateral Foreign Aid* and strategic objectives for agriculture and economic growth in respective Host Countries.
 - Strategy for integration of gender equity, biodiversity conservation, and social, political and environmental considerations and objectives into project design and implementation.
 - Plan for Mission engagement.
7. Strategy for Achieving Developmental Impacts (three pages)
 - Strategy to ensure that project outputs contribute to development outcomes and impacts.
 - Plan for outreach to stakeholders, end users and beneficiaries of bean and cowpea value-chains and dissemination of outputs.
8. Budget (no page limit)
 - Detailed budget for the 30 month period, identifying both direct and indirect costs, U.S. and HC expenses, and cost share (see Budget Form provided).
9. Annexes (no page limit):
 - Brief Curriculum Vitae of key personnel (Lead U.S. PI, HC PI and other Co-PIs).
 - Letters of interest to collaborate from HC and other U.S. partner institutions.
 - Plan for leveraging additional resources towards project objectives.
 - Literature cited.

b. Other Instructions: Applications must be in English with narrative portions prepared in MS Word with Times New Roman font size 12. The budget portions of the cost application must be prepared in Microsoft Excel in the format suggested. Page size cannot exceed 8 ½ x 11” for the technical proposal and 8 ½ x 14” for the cost proposal. All pages except for the cover page must be numbered. Additional required elements include; a) Authorized institutional signature on the cover page and the budget summary page, and b) Evidence of communication and interest to collaborate by HC institutions and other proposed partners.

c. Proposal Submission: Full proposals must be submitted electronically by the deadline of dd/mm/yyyy as an attachment to an email to xyz@msu.edu. Two hardcopies should also be mailed to the Pulse CRSP, 321 Agriculture Hall, MSU, East Lansing, MI 48824. Proposals that do not meet this deadline or the specified content and format will not be considered.

d. Proposal Evaluation: An External Advisory Panel (EAP) comprised of up to five independent expert reviewers with no conflicts of interest will evaluate the proposals. In consultation with the EAP and the USAID Cognizant Technical Officer (CTO), a portfolio of high quality projects with thematic coherence and appropriate regional and commodity

(beans/cowpeas) balance will be selected. Prior to establishing sub-agreements with Lead U.S. universities, the MO will contact USAID Missions to notify them about the proposed research activities and solicit their concurrence and input regarding synergies with on-going activities and Mission strategic objectives.

CRITERIA FOR EVALUATION OF PROPOSALS

- a. Technical merit of proposal (50 points)-** Contribution of proposed research and outreach activities for achievement of Dry Grain Pulses CRSP's global objectives/themes; Relevance of institutions and countries to bean/cowpea sub-sectors; Appropriateness of technical approach relative to topical area(s); Excellence of science; Qualifications of researchers (PIs); and Feasibility of research design and time-line for implementation.
- b. Collaboration and capacity building (15 points)-** Evidence of commitment to meaningful collaboration in the implementation of projects; Effectiveness of strategy to develop human resources and build sustainable capacity of institutions in developing countries; Clear plan for long- and short-term training.
- c. Contribution to USAID objectives and initiatives (15 points)-** Evidence of direct connections between CRSP project objectives and activities and USAID development frameworks/objectives, including Mission strategic objectives; Contribution of research activities to relevant USAID initiatives (e.g., IEHA) and priorities (e.g., gender equity, biodiversity, IPM, etc.).
- d. Contribution of outputs to development outcomes and impact (15 points)-** Strength of plan to ensure that project outputs lead to development outcomes; Evidence of commitment to partner with appropriate stakeholder groups, especially those associated with bean and cowpea value-chains in developing countries, so that outputs (i.e., technologies, recommendations, knowledge, etc.) will be used by constituencies; Identification of specific benchmarks for achieving development outcomes plus indicators to assess progress.
- e. Cost-effectiveness (5 Points)-** Justification of costs in the project budget; Evidence of institutional commitment for cost-share; Potential to leverage support from other private and public sources (i.e., other grants, endowments, in-kind contributions) to broaden the scope and outputs of proposed CSRP research, training and outreach activities.

PROGRAM IMPLEMENTATION

Following selection of awards, project teams will be asked to prepare detailed workplans and budgets. To facilitate this process, the ME will organize a Global PI Meeting to be attended by selected U.S. and HC PIs from all projects. This meeting will also provide opportunity for networking, refinement and coordination of activities, exploration of opportunities to leverage new resources, and planning for stakeholder and USAID Mission engagement. PIs that, post-selection, do not provide timely responses to MO requests and/or cannot participate in the planned Global PI Meeting may be disqualified from participation in the Dry Grain Pulses CRSP.

IV. PAST PERFORMANCE

A. PAST PERFORMANCE REFERENCES

To provide evidence of capacity and performance in program administration, a total of six **Contractor Performance Report** forms are presented; three for Michigan State University, as the candidate Management Entity for the Dry Grain Pulses CRSP, and three for Dr. Irvin E. Widders, as the proposed Director. The six programs identified (see listing below) all involve Michigan State University as either the Prime or a subcontractor for work conducted over the past five years, and USAID as the donor agency.

Contractor Performance Reports for the Proposed ME (Michigan State University):

1. Food Security III
2. Food Security III- Zambia
3. Afrobarometer Round 3

Contractor Performance Reports for the Proposed Director (Dr. I. Widders):

4. Bean/Cowpea Collaborative Research Support Program (CRSP)
5. USAID Initiative for Long-Term Training and Capacity Building (UILTCB)
6. Bean Health Research Program

The Food Security III, Food Security III-Zambia, and the Afrobarometer Round 3 programs demonstrate Michigan State University's institutional capacity to effectively administer both "Leader" and "Associate" cooperative agreement awards, to achieve international recognition for excellence in scholarship and delivery of training and development outputs, and to provide intellectual leadership to programs that influence governmental policy in developing countries.

The Bean/Cowpea CRSP and the Bean Health Research Program are programs for which Dr. Irvin Widders has served as Director, 2000-07 and 2003-06, respectively. Dr. Widders also currently serves as Co-Director of the UILTCB Program along with Dr. Mywish Maredia, the proposed Deputy Director for the Dry Grain Pulses CRSP.

Dr. Widders' leadership of the Bean/Cowpea CRSP has been exemplary. He led the Management Office (MO) team through the preparation of a proposal for the revitalized Bean/Cowpea CRSP program in 2002, the competition of all sub-awards, and the successful implementation of the new program. The 2002 Bean/Cowpea CRSP award involved a major paradigm shift from historical support of bean and cowpea production oriented research to a "value-chain" approach for defining research priorities. This translated into a greater research focus on increasing consumer consumption/utilization and understanding markets, driving forces for pulse value-chains. Throughout the process, Dr. Widders played a key role in defining and articulating this new vision for the program and constituting multidisciplinary regional project teams to address constraints to value-chains extending from producers to consumers.

The UILTCB program, a BIFAD mandated pilot training program in Zambia and Ghana, is evidence of effective partnering of the MO with EGAT/USAID and USAID Missions in the design and implementation of a program. Dr. Widders visited the Zambian and Ghanaian Missions to establish country specific training program objectives, identify potential target host

country institutions needing enhanced capacity, plan the application and selection process, define and coordinate roles of Mission Training Officers and MO staff to work in partnership, and to participate in the interview of candidates. Dr. Widders' experience as a university educator, understanding of university graduate admissions and program issues, and vision for the contribution of training programs to the building of strong institutions were invaluable in the establishment of this innovative new model for USAID training.

The *Bean Health Nutrition Program* was a competitive health research program for which MSU was sub-contracted by the "Beans for Health Alliance," a Global Developmental Alliance supported in part by USAID. Under Dr. Widders' leadership, an RFP was prepared identifying health research priorities involving beans and cowpeas, proposals were peer reviewed by health and nutrition scientists with no conflicts of interest, a Research Advisory Council of research directors from major food processing companies was appointed to select the projects for funding, and four projects were awarded to research universities/institutions. It is noteworthy, that three of the four sub-contractors which received awards had no affiliation with the Bean/Cowpea CRSP, and the one project that involved a current CRSP PI was conducted in Botswana, a non-CRSP host country. This demonstrates the ability of Dr. Widders to effectively partner with bean stakeholder groups, to design and execute a research program that is responsive to the private sector and USAID interests, and to provide intellectual leadership in the area of health and nutrition, a proposed Focal Area for Developmental Impact of the Dry Grain Pulses CRSP.

B. ADDITIONAL REFERENCES AND DOCUMENTATION

Additional documents, including letters of reference, are presented in this section following the Contractor Performance Reports. These documentations give evidence of the quality performance record of Michigan State University (including the Office of Contracts and Grants Administration) and the proposed Management Office team (Program Director, Deputy Director, and Administrative Officer) in varying aspects of program administration and stakeholder satisfaction.

1. Five-Year Technical Review (2002-2007) of the Bean/Cowpea CRSP by the External Evaluation Panel (EEP): Section VIII. Review of Management and Administrative Functions (p. 71-74)

This excerpt from the EEP Five-Year Technical Review Report of the Bean/Cowpea CRSP, completed in 2006, speaks to the leadership of the proposed Director and the administrative performance of the MO. As a fully external evaluative group comprised of internationally recognized experts in international agriculture development and research administration with no ties to the CRSP, the EEP provides a quality objective assessment of both technical and administrative functions to USAID. A full copy of the EEP's Five-Year Technical Review of the Bean/Cowpea CRSP can be obtained from the USAID CTO, Dr. Jiryis Oweis.

2. Support Letter by U.S. Dry Bean Council

The U.S. Dry Bean Council is a stakeholder and beneficiary of the Bean/Cowpea CRSP, a Title XII program. The attached letter directed to the Administrator of USAID, describes industry support for Michigan State University's role as the Management Entity of the Dry Grain Pulses CRSP and their assessment of Dr. Widders' visionary leadership of the research and training program of the current Bean/Cowpea CRSP.

3. Letter from Principal Kanyama Phiri, Bunda College of Agriculture, Malawi

Bunda College of Agriculture in Malawi is a partner Host Country institution in the Bean/Cowpea CRSP with faculty involved in collaborative research and training activities in food science, seed multiplication and dissemination, and breeding of beans. Although the purpose of the attached letter by Principal Professor George Y. Kanyama-Phiri (June 2006) was to recommend a five-year extension of the Bean/Cowpea CRSP, it is presented here as an example of the broad Host Country institutional satisfaction with Michigan State University's administration and technical leadership of the program.

4. Health and Nutrition Research Report (2006)

As the final technical report for the *Bean Health Research Program* to the Beans for Health Alliance, this publication gives evidence of the Director's ability to successfully administer a competitive grant research program of international scope with a focus on human health and nutrition. A copy of the Health and Nutrition Research Report can be obtained from the USAID CTO for the Beans for Health Alliance, Dr. Jiryis Oweis.

CONTRACTOR PERFORMANCE REPORT – SHORT FORM (1 of 6)

Project Title: Food Security III

PART I: Contractor Information (to be completed by Prime)	
1. Name of Contracting Entity:	USAID
2. Contract Number:	GDG-A-00-02-00021-00
3. Contract Type:	Cooperative Agreement
4. Contract Value (TEC): (if subcontract, subcontract value)	\$3,125,000
5. Problems: (if problems encountered on this contract, explain corrective action taken)	None to report
6. Contacts: (Name, Telephone Number and E-mail address)	
6a. Contracting officer:	Charis Nastoff Ph: 202-712-1041 E-mail: cnastoff@usaid.gov
6b. Technical Officer (CTO):	George Gardner Ph: 202-219-0492 E-mail: ggardner@afr-sd.org
6c. Other:	
7. Contractor:	Michigan State University
8. Information Provided in Response to RFP No.:	M-OAA-EGAT-DHWA-07-496
PART II: Performance Assessment (to be completed by Agency)	
1. Quality of product or service, including consistency in meeting goals and targets, and cooperation and effectiveness of the Prime in fixing problems.	Comment:
2. Cost control, including forecasting costs as well as accuracy in financial reporting.	Comment:
3. Timeliness of performance, including adherence to contract schedules and other time-sensitive project conditions, and effectiveness of home and field office management to make prompt decisions and ensure efficient operation of tasks.	Comment:
4. Customer satisfaction, including satisfactory business relationship to clients, initiation and management of several complex activities simultaneously, coordination among subcontractors and developing country partners, prompt and satisfactory correction of problems, and cooperative attitude in fixing problems.	Comment:
5. Effectiveness of key personnel including: effectiveness and appropriateness of personnel for the job; and prompt and satisfactory changes in personnel when problems with clients were identified.	Comment:

CONTRACTOR PERFORMANCE REPORT – SHORT FORM (2 of 6)

Project Title: Food Security III-Zambia

PART I: Contractor Information (to be completed by Prime)	
1. Name of Contracting Entity:	USAID-Zambia
2. Contract Number:	690-A-00-03-00247-00
3. Contract Type:	Cooperative Agreement
4. Contract Value (TEC): (if subcontract, subcontract value)	\$3,774,130
5. Problems: (if problems encountered on this contract, explain corrective action taken)	None to report
6. Contacts: (Name, Telephone Number and E-mail address)	
6a. Contracting officer:	Bruce MacFarland Ph: 267-363-1200 E-mail: info@usaid-rca.org
6b. Technical Officer (CTO):	Jan J. Nijhoff Ph: +260 (0)1 254303/6 E-mail: jnihoff@usaid.gov
6c. Other:	
7. Contractor:	Michigan State University
8. Information Provided in Response to RFP No.:	M-OAA-EGAT-DHWA-07-496
PART II: Performance Assessment (to be completed by Agency)	
1. Quality of product or service, including consistency in meeting goals and targets, and cooperation and effectiveness of the Prime in fixing problems.	Comment:
2. Cost control, including forecasting costs as well as accuracy in financial reporting.	Comment:
3. Timeliness of performance, including adherence to contract schedules and other time-sensitive project conditions, and effectiveness of home and field office management to make prompt decisions and ensure efficient operation of tasks.	Comment:
4. Customer satisfaction, including satisfactory business relationship to clients, initiation and management of several complex activities simultaneously, coordination among subcontractors and developing country partners, prompt and satisfactory correction of problems, and cooperative attitude in fixing problems.	Comment:
5. Effectiveness of key personnel including: effectiveness and appropriateness of personnel for the job; and prompt and satisfactory changes in personnel when problems with clients were identified.	Comment:

CONTRACTOR PERFORMANCE REPORT – SHORT FORM (3 of 6)

Project Title: Afrobarometer Round 3

PART I: Contractor Information (to be completed by Prime)	
1. Name of Contracting Entity:	USAID
2. Contract Number:	RLA-G-00-04-00062-00
3. Contract Type:	Grant
4. Contract Value (TEC):	(if subcontract, subcontract value)
5. Problems:	(if problems encountered on this contract, explain corrective action taken) None to report
6. Contacts:	(Name, Telephone Number and E-mail address)
6a. Contracting officer:	Georgia Fuller Ph: 202-712-0551 E-mail: gfuller@usaid.gov
6b. Technical Officer (CTO):	Mr. Ryan McCannell Ph: 202-216-3373 E-mail: rmccannell@usaid.gov
6c. Other:	
7. Contractor:	Michigan State University
8. Information Provided in Response to RFP No.:	M-OAA-EGAT-DHWA-07-496
PART II: Performance Assessment (to be completed by Agency)	
1. Quality of product or service, including consistency in meeting goals and targets, and cooperation and effectiveness of the Prime in fixing problems.	Comment:
2. Cost control, including forecasting costs as well as accuracy in financial reporting.	Comment:
3. Timeliness of performance, including adherence to contract schedules and other time-sensitive project conditions, and effectiveness of home and field office management to make prompt decisions and ensure efficient operation of tasks.	Comment:
4. Customer satisfaction, including satisfactory business relationship to clients, initiation and management of several complex activities simultaneously, coordination among subcontractors and developing country partners, prompt and satisfactory correction of problems, and cooperative attitude in fixing problems.	Comment:
5. Effectiveness of key personnel including: effectiveness and appropriateness of personnel for the job; and prompt and satisfactory changes in personnel when problems with clients were identified.	Comment:

CONTRACTOR PERFORMANCE REPORT – SHORT FORM (4 of 6)

Project Title: Bean/Cowpea Collaborative Research Support Program (CRSP)

PART I: Contractor Information (to be completed by Prime)	
1. Name of Contracting Entity:	USAID
2. Contract Number:	GDG-G-00-02-00012-00
3. Contract Type:	Grant
4. Contract Value (TEC): (if subcontract, subcontract value)	\$10,658,662
5. Problems: (if problems encountered on this contract, explain corrective action taken)	None to report
6. Contacts: (Name, Telephone Number and E-mail address)	
6a. Contracting officer:	Charis Nastoff Ph: 202-712-1041 E-mail: cnastoff@usaid.gov
6b. Technical Officer (CTO):	Jiryis Oweis Ph: 202-712-1367 E-mail: joweis@usaid.gov
6c. Other:	
7. Contractor:	Michigan State University
8. Information Provided in Response to RFP No.:	M-OAA-EGAT-DHWA-07-496
PART II: Performance Assessment (to be completed by Agency)	
1. Quality of product or service, including consistency in meeting goals and targets, and cooperation and effectiveness of the Prime in fixing problems.	Comment:
2. Cost control, including forecasting costs as well as accuracy in financial reporting.	Comment:
3. Timeliness of performance, including adherence to contract schedules and other time-sensitive project conditions, and effectiveness of home and field office management to make prompt decisions and ensure efficient operation of tasks.	Comment:
4. Customer satisfaction, including satisfactory business relationship to clients, initiation and management of several complex activities simultaneously, coordination among subcontractors and developing country partners, prompt and satisfactory correction of problems, and cooperative attitude in fixing problems.	Comment:
5. Effectiveness of key personnel including: effectiveness and appropriateness of personnel for the job; and prompt and satisfactory changes in personnel when problems with clients were identified.	Comment:

CONTRACTOR PERFORMANCE REPORT – SHORT FORM (5 of 6)

Project Title: USAID Initiative for Long-term Training and Capacity Building (UILTCB)

PART I: Contractor Information (to be completed by Prime)		
1. Name of Contracting Entity: Centro Internacional de Agricultura Tropical (CIAT)/USAID		
2. Contract Number: None (referred in contract as “BIFAD Long-term Training Program”)		
3. Contract Type: Grant		
4. Contract Value (TEC): (if subcontract, subcontract value) \$1,817,500		
5. Problems: (if problems encountered on this contract, explain corrective action taken) None to report		
6. Contacts: (Name, Telephone Number and E-mail address)		
6a. Contracting officer: Kathryn Laing Ph: (57 2) 4450000 ext 3306 E-mail: k.laing@cgiar.org		
6b. Technical Officer (CTO): John Thomas and Eric Witte Ph: 202-712-0239 202-712-1906 E-mail: jthomas@usaid.gov ewitte@usaid.gov		
6c. Other:		
7. Contractor: Michigan State University		
8. Information Provided in Response to RFP No.: M-OAA-EGAT-DHWA-07-496		
PART II: Performance Assessment (to be completed by Agency)		
1. Quality of product or service, including consistency in meeting goals and targets, and cooperation and effectiveness of the Prime in fixing problems. Comment:		
2. Cost control, including forecasting costs as well as accuracy in financial reporting. Comment:		
3. Timeliness of performance, including adherence to contract schedules and other time-sensitive project conditions, and effectiveness of home and field office management to make prompt decisions and ensure efficient operation of tasks. Comment:		
4. Customer satisfaction, including satisfactory business relationship to clients, initiation and management of several complex activities simultaneously, coordination among subcontractors and developing country partners, prompt and satisfactory correction of problems, and cooperative attitude in fixing problems. Comment:		
5. Effectiveness of key personnel including: effectiveness and appropriateness of personnel for the job; and prompt and satisfactory changes in personnel when problems with clients were identified. Comment:		

CONTRACTOR PERFORMANCE REPORT – SHORT FORM (6 of 6)

Project Title: Bean Health Nutrition Program

PART I: Contractor Information (to be completed by Prime)	
1. Name of Contracting Entity: International Alliance to Promote Health Benefits of Beans and Pulses (Beans for Health Alliance—BHA)/USAID	
2. Contract Number: REE-A-00-03-00094-00	
3. Contract Type: Grant	
4. Contract Value (TEC): (if subcontract, subcontract value) \$696,050	
5. Problems: (if problems encountered on this contract, explain corrective action taken) None to report	
6. Contacts: (Name, Telephone Number and E-mail address)	
6a. Contracting officer: Stacey A. Zowel Ph: 781-749-6844 E-mail: stacey@zowelhealth.com ; stacey@beansforhealth.org	
6b. Technical Officer (CTO): USAID CTO: Jiryis Oweis Ph: 202-712-1367 E-mail: joweis@usaid.gov	
6c. Other: BHA Board Chair : Sara Rose Ph: 865-450-4116 Email: srose@bushbros.com	
7. Contractor: Michigan State University	
8. Information Provided in Response to RFP No.: M-OAA-EGAT-DHWA-07-496	
PART II: Performance Assessment (to be completed by Agency)	
1. Quality of product or service, including consistency in meeting goals and targets, and cooperation and effectiveness of the Prime in fixing problems. Comment:	
2. Cost control, including forecasting costs as well as accuracy in financial reporting. Comment:	
3. Timeliness of performance, including adherence to contract schedules and other time-sensitive project conditions, and effectiveness of home and field office management to make prompt decisions and ensure efficient operation of tasks. Comment:	
4. Customer satisfaction, including satisfactory business relationship to clients, initiation and management of several complex activities simultaneously, coordination among subcontractors and developing country partners, prompt and satisfactory correction of problems, and cooperative attitude in fixing problems. Comment:	
5. Effectiveness of key personnel including: effectiveness and appropriateness of personnel for the job; and prompt and satisfactory changes in personnel when problems with clients were identified. Comment:	

ADDITIONAL REFERENCES AND DOCUMENTATION

Excerpt (pages 71-74) from:

EXTERNAL EVALUATION PANEL FIVE-YEAR TECHNICAL REVIEW (2002-07) OF THE BEAN/COWPEA COLLABORATIVE RESEARCH SUPPORT PROGRAM (CRSP)

September 2006

Prepared by: Drs. Robert Herdt, Cornell University
Julia Kornegay, North Carolina State University
Daryl Lund, University of Wisconsin-Madison
Mamadou Ouatarra, AU/SAFGRAD, Guinea
John Stovall, Independent Consultant (Chair)

VIII. Review of Management and Administrative Functions

The EEP's Five-Year Technical Review of the Bean/Cowpea CRSP not only addresses technical issues but also how the CRSP is managed and supported administratively and how funds available to it are distributed and accounted for. These issues influence program productivity and quality.

Our comments and recommendations presented here are based on written material provided to the EEP, discussions with the MO staff, numerous interactions with PIs (both U.S. and HC), and interaction with the USAID CTO. Comments and recommendations are organized around four major areas of responsibility: (1) providing administrative support, (2) exercising program leadership, (3) governance, organization and structure and (4) fulfilling obligations to USAID.

Michigan State University (MSU) was awarded the planning grant in 1978 which led to the design of the CRSP. MSU has been given responsibility for the Management Office since the CRSP grant was awarded in 1980. MSU has given the Bean/Cowpea CRSP strong support for all those years and has a long tradition of supporting international activities more generally. This institutional support has been an important factor in the success of the MO. MSU has provided experienced and tenured faculty as the CRSP Director and the university administrators have strongly supported the program by allowing numerous faculty members to work on CRSP projects as well as in less obvious ways.

The MO is staffed with very competent and dedicated personnel and receives adequate attention, support and oversight from responsible administrators at all levels of MSU. The office is operated on a USAID budget which has remained just under the maximum level of 20 percent of the total Bean/Cowpea CRSP obligation from USAID. In addition to the CRSP, the director manages a related project called the "Beans for Health Alliance" (BHA) which has both USAID and private support. The BHA provides some salary and administrative support for the MO. In addition, the MO was asked in September 2004 to take on responsibility for a pilot degree training project called the "USAID Initiative for Long-term Training and Institutional Capacity

Building (UILTCB)” which focuses on Ghana and Zambia. In addition to being complementary to ongoing CRSP training activities, it also allows for cost share of MO staff salaries.

The CRSP Council is still another activity that has taken a considerable amount of time away from the director. Dr. Widders chaired the CRSP Council for three years and continues to play an important leadership role for this key organization. The additional financial support from some of these non-CRSP activities enables the MO to meet the required “20% or less” rule. It also means the staff does not devote full time to the Bean/Cowpea CRSP. This is not intended as a criticism because the EEP view them as quite complimentary to the CRSP.

The MO office provides oversight for the Bean/Cowpea CRSP training which cuts across all three regional projects. The MO staff is to be commended for documenting and analyzing the training provided by region, discipline and gender. This will be useful for future selection of trainees and explaining the benefits of this important component of the CRSP.

The CRSP director has developed a strong relationship with the U.S. dry bean industry which has in turn reorganized to work with and support the CRSP more effectively. The U.S. Dry Bean Council, recently established to replace the three former organizations, invited Dr. Widders to serve on its Board.

Overall, we believe the MO has provided exceptional leadership to the Bean/Cowpea CRSP. This conclusion is supported by our observations and feedback during our site visits from HC and US participants and other evidence. The MO is respected by U.S. and HC PIs as well as the IR as evidenced by their unanimous support for MSU’s request to be awarded another five-year grant without competition.

Providing Administrative Support

An important function of the MO is to provide administrative support to all elements of the CRSP, including financial and accounting oversight. This is a huge challenge given the number of U.S. and Host Country institutions involved and the USAID record keeping and reporting requirements. The challenge was further complicated during the first year of the new grant by (1) the unexpected need to relocate the MO office on the Michigan State University campus and (2) an unplanned delay in USAID funding. It is significant that both circumstances were beyond the control of the MO.

These two unanticipated events created an enormous administrative workload, coming on top of the heavy workload associated with closing out one grant and starting up the new program. The EEP commends the MO for successfully completing the transition in spite of these handicaps. This accomplishment is a tribute to the dedication and commitment of the MO staff to the CRSP.

Funding delays by USAID and the necessity of additional paperwork also imposed an added burden on all CRSP participants, especially principal investigators, collaborators and their staff. Significantly, however, none that we interacted with blamed the MO for their frustrations and delays. Although there is no way to measure the costs of the funding delays by USAID, the impact on the program was certainly significant. When it became apparent that USAID would not be able to fund the new grant as planned, funds were allocated under the old grant for a two

month extension (August 1 to September 29, 2003) after which the new grant was funded. This created a paperwork nightmare all up and down the CRSP organization! The EEP suggests that USAID review procedures for grant funding to find ways to minimize the transaction costs associated with transitions between grants.

The increased number of subgrants and Memorandums of Understanding (MOU) in the new grant imposed an added paperwork burden on all participating institutions. The lack of timely completion of paperwork by some institutions also contributed to start up delays and some U.S. institutions continue to have difficulty in moving money to HC institutions in a timely fashion. The EEP recommends that in the next grant period that the MO consider establishing and managing directly all subagreements to HC institutions.

The MO has made a special effort to minimize transaction costs in administering the current grant as encouraged by USAID. The EEP applauds this effort but must point out that ironically, a large fraction of total transaction costs incurred by the CRSP are necessary to comply with USAID requirements and adjust to funding uncertainties.

Exercising Program Leadership

Providing leadership for the Bean/Cowpea CRSP is perhaps the most essential function performed by the MO, notwithstanding the important role played by the TC. At the end of the day, it is the MO that must account for any failure to lead the program to successful completion.

The MO is to be commended for exercising strong program leadership, especially in the first difficult year of the grant. The MO staff appears to be very well informed about the personnel working on the projects and the progress on the projects and they make good use of the technical expertise represented on the TC. The MO is also to be commended for their commitment to institutional capacity building as evidenced in part by the special effort to strengthen weak institutions in Africa.

The MO emphasizes a “collaborative leadership style” in exercising program leadership, relying heavily on the TC and PIs for technical guidance. The EEP believes that this is appropriate but we also recognize that there are circumstances in which decisive action by the MO is called for. We encourage the MO to make tough unilateral decisions when needed. The EEP expects the MO to exercise their authority to make shifts in funds between projects, when appropriate, as an exception to the normal decision-making process.

An essential element of program leadership is a clear vision of the program objectives and how they are to be achieved. The EEP is convinced that the MO leadership has such a vision for the Bean/Cowpea CRSP and has articulated that vision clearly to all participants and clientele.

Assessing Program Structure and Organization

The Bean/Cowpea CRSP, organized around three regional projects, thematic areas and research activities, is rather complex. The MO is assisted in governance by a Board of Directors, composed of Institutional Representatives, and a Technical Committee (TC) made up of PIs from each region plus a representative from CIAT and IITA.

With 11 U.S. universities, 22 Host Country institutions and 32 research activities, a hierarchical organizational structure is necessary. Organizing around three regional projects, while not perfect, is working quite well. An unintended consequence is that there is little interaction or coordination across regions on activities associated with each thematic area. For example, training needs in LAC as compared to needs in Africa are not routinely evaluated or vetted. The EEP recommends that the MO and TC give more attention to this deficiency but it is too late in this grant period to make any changes in organizational structure.

We strongly believe that the next phase of this CRSP make provision for the evaluation function to continue, although we leave it to USAID and the MO to decide how it is to be implemented.

Fulfilling Responsibilities to USAID

The ME/MO has special responsibilities to USAID as the major source of funds for the Bean/Cowpea CRSP. Not only is USAID a donor but it is also a partner in a larger international development effort. The 11 participating U.S. universities contribute a significant portion of the costs of the CRSP and they also lend much needed political support for international development. Thus, not only does the Bean/Cowpea CRSP have special responsibilities to USAID that go with any grant, there are shared responsibilities as partners to further international agricultural development.

The EEP believes that MSU has faithfully fulfilled its responsibility as a grantee to USAID and could serve as a model for future university/USAID partnerships.

UNIVERSITY OF MALAWI

PRINCIPAL

Prof. G. Y. Kanyama-Phiri, BSc, MS, Ph.D.



BUNDA COLLEGE OF AGRICULTURE

P.O. BOX 219, LILONGWE, MALAWI.

Telephone: (265) 277 222

Fax : (265) 277 364

Telex : 43622 BUNDA MI

Telegrams: "BUNDAGRIC"

Our Ref.: BC/16/6

June 21, 2006

Ambassador Randall L. Tobias
Director of U.S. Foreign Assistance and Administrator
USAID
RRB 6.09A
Washington, D.C. 20523-6800

Dear Administrator Tobias

Bunda College of Agriculture has been informed that the Bean/Cowpea Collaborative Research Support Program (CRSP) will be terminated by the U.S. Agency for International Development (USAID) on September 29, 2007, after only five years of a new grant.

Because of benefits derived by Bunda College of Agriculture in collaborating on cowpea research with U.S. university scientists through the Bean/Cowpea CRSP and the significant impacts of technologies from the CRSP program on the livelihoods of resource poor farmers as well as other stakeholders in cowpea value chains in Malawi, this decision by USAID/Washington is of great concern to us. We strongly encourage USAID to reconsider and to award a five-year extension to the grant with Michigan State University for the management of the Bean/Cowpea CRSP so that the program can effectively achieve its global mission and objectives.

As it may be appreciated, Bwana Ambassador, cowpeas play significant role in the food and nutritional security of Malawi. As long as 85% of the population depends on agriculture sector for its livelihood; it is reasonable to argue that the cowpeas shall continue to assume increasing importance in the economic future of

the agriculture sector and indeed in the contraction to the livelihoods of the resource poor farmers.

Bunda College of Agriculture, the only institution in the country which has had a long history of collaboration with the Bean/Cowpea CRSP programme has benefited greatly from this programme for example, of the numerous faculty members that have been trained under these programmes, two have been advanced to Deanship positions. Professionally, the Bean/Cowpea CRSP programme has facilitated research that has enabled some of these scientists to develop cutting edge technologies some of which have led to release of new varieties for smallholder farmers. Additionally some of the data has been published in refereed journal articles to the extent that some of those staff concerned have since been promoted to ranks of Senior Lecturer, Associate and Full Professors.

It is our understanding that USAID is considering the establishment of a new CRSP program on "Dry Grain Pulses." Although this program may also support research on cowpeas, we are greatly concerned about how this change will affect the research and outreach programs of Bunda College of Agriculture. Because of the declining availability of external funding from international donors for agriculture research, any disruptions in funding from the CRSP would be disastrous for us. Past experience has shown that transitions between Bean/Cowpea CRSP grants or changes in relationships with U.S. universities requiring the need to negotiate new sub-agreements frequently result in interruptions of six months or more in receipt of funds. We anticipate that if there is a change in the Management Entity and completely new research program implemented, the length of the period without funding will likely be much longer, perhaps up to two years. Disruptions in funding of this nature without a reassurance of future funding would force our institution to terminate strategic programs, redirect research efforts, and perhaps even lay off staff.

We candidly do not understand USAID's justification for wanting to establish a new program when the Bean/Cowpea CRSP has been so successful and the focus of the proposed new program would be similar to the current CRSP. Moreover, we want to share that the collaborative research relationships we have with U.S. universities in this current grant have been highly productive and enabled our institution to build its capacity in the areas of Plant Breeding, Plant Protection, Dambo Water Management, Food Nutrition and Agronomy, just to mention a few. Because of the research momentum that we have achieved since 2002, termination of the research relationships with our collaborating U.S. universities

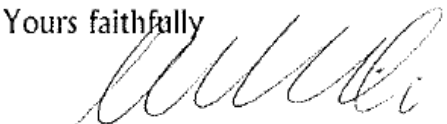
June 21, 2006

after only five years would limit our ability to achieve our primary research objectives. You may further wish to appreciate the fact that the research supported by the Bean/Cowpea CRSP in breeding, biotechnology, crop production, food science, is long term in nature. In order to achieve the intended technology development goals and to disseminate these technologies to the intended beneficiaries for impact, a ten-year commitment of funding is clearly justified.

Bunda College of Agriculture also wants to communicate to you our satisfaction with Michigan State University's administration and technical leadership of the Bean/Cowpea CRSP over the years. As the Management Entity, they have demonstrated a commitment to: (1) high standards of scientific excellence in the research and training programs; (2) the building up of research capacity in areas of cutting-edge science; (3) promoting an environment of professional respect and partnership between U.S. and Host Country scientists; and (4) administering the program in a participatory manner through active engagement of Host Country PIs in the joint development of work plans and budgets. Although our sub-agreements are largely with other U.S. universities which participate in the Bean/Cowpea CRSP, we have found that the Management Office is highly responsive to our needs and concerns, has an excellent understanding of the technical aspects of the research activities, and is providing the services and visionary leadership necessary for the success of this strategic program.

Bunda College of Agriculture therefore strongly supports a five-year extension of the Bean/Cowpea CRSP and Michigan State University's continued role as the Management Entity. We believe that an extension is not only in USAID's interests in terms of achieving its develop assistance goals, but also in the interests of the stakeholders in cowpea/bean value chains in our country.

Yours faithfully



Professor G.Y. Kanyama Phiri
PRINCIPAL

cc: Irvin Widders, Director of the Bean/Cowpea CRSP, Michigan State University
Don Cooksey, Chair of the Board of Directors, University of California-Riverside
Jiryis Oweis, CTO, Office of Agriculture, EGAT, USAID-Washington
The Director of the USAID Mission, P O Box 30455, Lilongwe 3



February 21, 2007

Ambassador Randall L. Tobias
Director of U.S. Foreign Assistance and Administrator
USAID
RRB 6.09A
Washington, D.C. 20523-6800

Dear Administrator Tobias:

The United States Dry Bean Council (USDBC), a trade association comprised of dry bean growers, processors and corporate members involved in the dry bean industry throughout the United States, would like to make you aware of our support for Michigan State University's (MSU) proposal to administer the new Dry Grain Pulses CRSP with Dr. Irvin Widders as Director.

We have had the opportunity to work with MSU in their role of managing the Bean/Cowpea CRSP as well as the Bean Health Research Program and have been very pleased with the achievements they made. The development of improved bean varieties and a better understanding of the health attributes of beans have not only benefited our domestic farming communities but have had an important impact on subsistence farm families and urban poor throughout the world.

MSU's partnership with USDBC has provided technical assistance in bean breeding, food science and crop management. The MSU and Beans for Health Alliance partnership was instrumental in working with FDA to obtain the Dietary Guidance Message for beans. Each of these examples has helped the industry take advantage of new market opportunities in both the domestic and global markets.

Dr. Irvin Widders has provided strong leadership in the Bean/Cowpea CRSP and has been highly responsive to the dry bean industry research and training needs. Examples of Dr. Widders' leadership include his assistance in obtaining funding for the Beans for Health Alliance (a GDA funded by USAID), the appointment of an industry representative on the CRSP Technical Committee and his current service on the Health and Promotions Committee of the USDBC. In particular we acknowledge Dr. Widders visionary leadership which has enabled the industry to refocus and make "improving health and nutrition by eating beans" a research and promotion priority.

70 East Robbins Road (P.O. Box 550), Grapeview, Washington 98546
Main: 360/277-0112 Fax: 360/233-0621 DC Liaison Office: 202/466-4500



As a benefactor and a stakeholder of the future Dry Grain Pulses CRSP, the USDBC asks you to confirm Michigan State University as the Management Entity and Dr. Widders as the Director of this program.

Respectfully,

Cindy Brown

Cindy Brown
President
US Dry Bean Council

V. ANNEXES

ANNEX 1: LIST OF ACRONYMS

AAC	Administrative Advisory Committee
ADS	Automated Directives System
AIDS	acquired immunodeficiency syndrome
AO	Agreement Officer
BHA	Beans for Health Alliance
CAADP	Comprehensive African Agricultural Development Programme
CANR	College of Agriculture and Natural Resources
CGA	Contract and Grant Administration
CGIAR	Consultative Group on International Agricultural Research
CIAT	Centro Internacional de Agricultura Tropical
CIMMYT	Centro Internacional de Mejoramiento de Maiz y Trigo
CIP	Centro Internacional de Papa
CRSP	Collaborative Research Support Program
CSO	Civil Society Organizations
CTO	Cognizant Technical Officer
CV	Curriculum Vitae
EAP	External Advisory Panel
EARTH	Escuela de Agricultura para la Region Tropical y Humeda
ECABREN	Eastern and Central Africa Bean Research Network
EEP	External Evaluation Panel
EGAT	Economic Growth and Agriculture Trade
FAO	United Nation's Food and Agriculture Organization
FDA	Food and Drug Administration
FTE	Full time equivalent
GMOs	Genetically Modified Organisms
GPM	Global Principal Investigators' Meeting
HC	Host Country
HIV	human immunodeficiency virus
IARCs	International Agricultural Research Centers
ICM	Integrated Crop Management
ICRISAT	International Crops Research Institute for Semi Arid Tropics
IDC	Indirect cost
IEHA	Initiative to End Hunger in Africa
IIA	Institute of International Agriculture
IITA	International Institute of Tropical Agriculture
IPM	Integrated Pest Management
IRRI	International Rice Research Institute
IRs	Institutional Representatives
ISP	International Studies and Programs
LWA	Leader with Associate
M&E	Monitoring and Evaluation

M&IE	Meals and Incidental Expenses
MTDC	Modified Total Direct Cost
ME	Management Entity
MO	Management Office
MOU	Memorandum of Understanding
MSU	Michigan State University
N	Nitrogen
NARS	National Agricultural Research System
NASULGC	National Association of State Universities and Land-Grant Colleges
NEPAD	New Partnership for Africa's Development
NGOs	Non-governmental Organizations
NICRA	Negotiated Indirect Cost Rate Agreement
NSF	National Science Foundation
OAA	Office of Acquisition and Assistance
P	Phosphorus
PI	Principal Investigator
PROFRIJOL	El Programa Cooperativo Regional de Frijol para Centro América, México y El Caribe
PRONAF	French acronym for "Cowpea Network for Africa"
Pulse CRSP	Dry Grain Pulses CRSP
R&D	Research and Development
RCSA	Regional Office for Southern Africa
REDSO	Regional Economic Development Services Office for East and Southern Africa
RFA	Request for Assistance
RFP	Request for Proposal
SABRN	Southern Africa Bean Research Network
SPIA	Standing Panel on Impact Assessment
SSA	Sub-Saharan Africa
TMAC	Technical Management Advisory Committee
UILTCB	USAID Initiative for Long-term Training and Capacity Building
U.S.	United States
USAID	U.S. Agency for International Development
USAID/W	USAID Washington
USDA	U.S. Department of Agriculture
USDBC	U.S. Dry Bean Council
WARP	West Africa Regional Project
WHO	World Health Organization
WIPO	World Intellectual Property Organization

ANNEX 2: CURRICULUM VITAE OF DR. IRVIN E. WIDDERS, PROPOSED PROGRAM DIRECTOR

Irvin Eugene Widders

HOME ADDRESS

1895 LiveOak Trail
Williamston, MI 48895
Phone: (517) 655-4776

OFFICE ADDRESS

Bean/Cowpea CRSP
321 Agriculture Hall
Michigan State University
East Lansing, MI 48824
Phone: (517) 355-4693
E-mail: widders@msu.edu

CURRENT APPOINTMENT

Director, Bean/Cowpea Collaborative Research Support Program 0.9 FTE
Professor, Department of Horticulture 0.1 FTE

EDUCATION

Ph.D. University of California, Davis 1982 Plant Physiology
M.S. University of California, Davis 1977 Vegetable Crops
B.S. Pennsylvania State University 1975 Horticulture

EXPERTISE

International Agriculture Development
Cultural Management of Vegetable and Pulse Crops
Environmental Stress Physiology (water, temperature and mineral nutrient stress)
Plant Mineral Nutrition and Ion Transport

PROFESSIONAL EXPERIENCE

2000- Present Director, Bean/Cowpea Collaborative Research Support Program (CRSP)
2003-2006 Director, Bean Health Research Program
1998-2000 Deputy Director, Bean/Cowpea CRSP
1996- Present Professor, Department of Horticulture, MSU
1987-1996 Associate Professor, Department of Horticulture, MSU
1982-1987 Assistant Professor, Department of Horticulture, MSU

PROFESSIONAL ORGANIZATIONAL MEMBERSHIPS

Association of International Agriculture & Rural Development (AIARD)
Bean Improvement Committee (BIC)
The American Society for Horticultural Science

HONORS AND/OR AWARDS

Outstanding Advisor of the Year (2001-2002), MSU
Recognition for Outstanding Contribution, Task Force for Curricular Revitalization, College of Agriculture and Natural Resources, MSU

INTERNATIONAL ACTIVITIES

- 2000-present Director, *Bean/Cowpea Collaborative Research Support Program (CRSP)*: Direct global multi-institutional program funded by USAID and provide administrative oversight for collaborative research and training projects in Sub-Saharan Africa and Latin America.
- 2003-present Co-coordinator and instructor: MSU Study Abroad Program "*Land of the Incas*" in Peru.
- 1997-present Program Coordinator, MSU Study Abroad Program at the EARTH University (*Escuela de Agricultura para la Region Tropical y Humeda*), Costa Rica: Recruit students, coordinate program arrangements and conduct evaluations.
- 2005-2006 Co-Director, *USAID Initiative for Long-Term Training and Capacity Building (UILTCB)*: Provide leadership in the design and implementation of an innovative pilot USAID supported training M.S. degree program that contributes to the building of institutions in Zambia, Ghana and Malawi.
- 2003-2006 Director, *Bean Health Research Program*: Administer project competition, provide oversight of research activities in Botswana, Tanzania and at U.S. universities, and serve on the Board of Beans for Health Alliance.
- 1998-2000 Deputy Director, *Bean/Cowpea CRSP*: Back-stop Director and provide technical oversight of sub-contracted research and training projects
- 1998 Consultant, World Bank Project, Instituto Nacional de Investigacion Agropecuaria (INIA), Uruguay: Consult on vegetable production and nutrient management for export.
- 1994 Sabbatical (six months); EARTH University, Costa Rica: Conducted research and lectured.
- 1993 Consultant to Vietnamese Ministry of Education, Hanoi Agriculture University, University of Hue, Thu Duc Agriculture University, and the University of Cantho, Vietnam: Presented workshops on Graduate Program Development in the Agriculture Sciences at five agriculture universities in Vietnam.
- 1985 Consultant, University of Zimbabwe, Harare, Zimbabwe, A MUCIA/MSU USAID institutional capacity building project. Consulted on Horticulture curriculum and research program development.
- 1969-1972 Vegetable Crops Extension Specialist, Mennonite Central Committee, Tocoa, Honduras: Designed and implemented vegetable research and development program in twelve villages in the Aguan Valley of Honduras.

FOREIGN LANGUAGES

Spanish: Near native speaking, writing and reading ability

MSU INSTRUCTIONAL PARTICIPATION (1982-1998)

HRT 341 Vegetable Production and Management 3(2-3)

HRT 401 Physiology and Management of Herbaceous Plants 3(3-0)

HRT 853 Plant Mineral Nutrition 3(3-0)

STUDENT ORGANIZATIONS

La Comunidad Latinoamericano, faculty advisor, 1993 - present

MSU Horticulture Club, faculty advisor, 1995 - 1997

COMMITTEE AND ADMINISTRATIVE SERVICES

1999	<u>University:</u>	Advisory Council for Center for Latin American and Caribbean Studies	2003- present
		ISP Council of International Program Directors	2000 - present
		Study Abroad Program Development Committee	1999 - 2001
		University Graduate Council (Chair, 1996-97)	1995 -
		Executive Committee for Academic Council	1996 - 1997
		Distinguished Graduate Fellowship Committee	1997, 1998
		MSU Pickling Cucumber Research Committee, Chair	1984 - 1999
		CQI Committee for International Graduate Student Admissions	1996
		University Curriculum Committee	1985 - 1987
		<u>College:</u>	CANR Graduate Committee (ex-officio)
		CANR Academic Policy Committee	1992 - 1994
		CANR Productivity and Academic Program Assessment Committee	1992 - 1993
		CANR Task Force for Curricular Revitalization	1988 - 1989
	<u>Department:</u>	Department Advisory Committee	1995 - 1997
		Undergraduate Affairs Committee, Chairperson	1983 - 1994

OTHER PROFESSIONAL AND OUTREACH ACTIVITIES

2005-2007 CRSP Council, Vice Chair

2006-2007 Health and Promotions Committee, U.S. Dry Bean Council

2005-2007 Health Research Advisory Committee, Pulse Canada

2002-2004 Council (comprised of Directors of nine CRSPs), Chair

1991-1999 Editorial Board, *Scientia Horticulturae*, Elsevier, Journal of the International Society for Horticultural Science

1990 Pickling Cucumber Improvement Committee, National Chairperson

RESEARCH GRANTS (last five years)

- 2002-2007 *Regional Partnerships to Enhance Bean/Cowpea Consumption and Production in Africa and Latin America (2002 - 2007).*
A five-year grant funded by USAID, Washington, to Michigan State University to administer the Bean/Cowpea CRSP as the Management Entity; Authorization of \$20,000,000.
- 2005-2008 *USAID Initiative for Long-Term Training and Capacity Building (UILTCB)*
A three-year grant total administered by MSU to support graduate education of students from Ghana and Zambia. Total award of \$1,800,000.
- 2003-2006 *Bean Health Research Program.* Program subcontracted with Michigan State University by the Beans for Health Alliance, a USAID-supported Global Developmental Alliance. Total award of \$900,000.

PUBLICATIONS

- Bisognin DA, L Velasquez, I Widders. 2005. Cucumber seedling dependence on cotyledon leaves for early growth. *Pesq. Agropec. Brasileira* v 40, n 6, 531-539.
- Christov A., R. Baughan, I. Widders, S. Ries. 1997. The effect of L(+) adenosine on cation exchange between corn shoot segments and the incubation medium. *Compt. Rend. Acad. Bulg. Sci.* (published)
- Christov, A., R. Baughan, I. Widders, S. Ries. 1997. The response of pea (*Pisum sativum*) leaf tissues to L(+) adenosine. *Compt. Rend. Acad. Bulg. Sci.* (published)
- Ries, S., I. Widders and R. Baughan. 1995. Light affects the flux of Ca from excised tomato leaves within four seconds. *J. Experimental Botany* 46:1867-1876.
- Widders, I.E. and M. Kwantes. 1995. Ontogenic changes in seed weight and carbohydrate composition as related to growth of cucumber (*Cucumis sativus* L.). *Scientia Horticulturae* 63:155-165.
- Widders, I.E. and M. Kwantes. 1995. Environmental effects on seed development as related to expansive growth of cucumber (*Cucumis sativus* L.). *Scientia Horticulturae* 64:21-31.
- Ries, S., I. Widders, S. Savithiry, V. Wert and R. Baughan. 1994. Cation signals rapidly elicited in several different plant species by pinching of leaves. *J. Experimental Botany* 45:367-371.
- Widders, I.E. and J.F. Hancock. 1994. Effects of foliar nutrient applications on highbush blueberry. *J. Small Fruit and Viticulture* 2:51-62.

- Janoudi, A.K., I.E. Widders, and J.A. Flore. 1993. Water deficits and environmental factors affect photosynthesis in leaves of cucumber (*Cucumis sativus* L.). *J. American Society Horticultural Science* 118:366-370.
- Ries, S., S. Savithiry, V. Wert and I. Widders. 1993. Rapid induction of ion pulses in tomato, cucumber and maize plants following a foliar application of 9- β -L(+) adenosine. *Plant Physiol.* 101:49-55.
- Janoudi, A.K. and I.E. Widders. 1993. Water deficits and fruiting affect carbon assimilation and allocation in pickling cucumber plants. *HortScience* 28:98-100.
- Widders, I.E. and R.W. Garton. 1992. Pretransplant nutrient conditioning rapidly affects elemental accumulation in tomato seedlings. *Scientia Horticulturae* 52:9-17.
- Widders, I.E. 1991. Absorption and translocation of foliar applied triazone-N as compared to other nitrogen sources in tomato. *J. Plant Nutrition* 14(10):1035-1045.
- Garton, R.W. and I.E. Widders. 1990. Nitrogen and phosphorus preconditioning of small-plug seedlings influence processing tomato productivity. *HortScience* 25:655-657.
- Engelkes, C.N., I. Widders and H. Price. 1990. Ontogenetic changes in calcium concentration and content in pickling cucumber fruit as influenced by genotype and environment. *J. Amer. Soc. Hort. Sci.* 115:555-558.
- Long, J.M. and I.E. Widders. 1990. Quantification of apoplastic potassium content by elution analysis of leaf lamina tissue from pea (*Pisum sativum* L. cv. Argenteum). *Plant Physiol.* 94:1040-1047.
- Widders, I.E. and H.C. Price. 1989. Effects of plant density on growth and biomass partitioning in pickling cucumbers. *J. Amer. Soc. Hort.* 114:751-755.
- Widders, I.E. 1989. Preplant treatments of N and P influence growth and elemental accumulation in tomato seedlings. *J. Amer. Soc. Hort. Sci.* 114:416-421.
- Fritz, V., S. Honma and I. Widders. 1988. The effects of petiole calcium status, petiole location and plant age on incidence and progression of bacterial soft rot (*Erwinia carotovora* spp. carotovora) in Chinese cabbage (*Brassica campestris* spp. pekinensis). *J. Amer. Soc. Hort. Sci.* 113:56-61.
- Berghage, R., D. Krauskopf, D. Warncke and I. Widders. 1987. Micronutrient testing of plant growth media: Extractant identification and evaluation. *Communication in Plant and Soil Science* 18(9):1089-1109.
- Widders, I.E. and O.A. Lorenz. 1983. Effects of leaf age on potassium efflux and net flux in tomato leaf slices. *Annals of Botany* 52:499-506.

Widders, I.E. and O.A. Lorenz. 1983. Effects of leaf age and position on the shoot axis on potassium absorption by tomato leaf slices. *Annals of Botany* 52:489-498.

Widders, I.E. and O.A. Lorenz. 1982. Ontogenetic changes in potassium transport in xylem of tomato. *Physiol. Plant.* 56:458-464.

Widders, I.E. and O.A. Lorenz. 1982. Potassium nutrition during tomato plant development. *J. Amer. Soc. Hort. Sci.* 107:960-964.

Widders, I.E. and O.A. Lorenz. 1979. Tomato root development as related to potassium nutrition. *J. Amer. Soc. Hort. Sci.* 104:216-220.

ABSTRACTS AND PROCEEDINGS

Widders, I.E. 2006. The Beans for Health Alliance: A public-private sector partnership to support research on the nutritional and health attributes of beans. *The XLIX Report of the Bean Improvement Cooperative* 49: 3-5.

Widders, I.E. 2005. Plenary Lecture: The changing edible legume research landscape: Adapting to new driving forces, agriculture research agendas, and funding opportunities. *International Edible Legume Conference and 4th World Cowpea Conference, Durban, S. Africa.* p. 9.

Widders, I.E. 2005. Creating programs to increase production and consumption of edible legumes and legume-based foods for nutritional security. *Workshop- Charting a Path for Future Legume Research Opportunities: Promoting a Healthier and More Nutritionally Secure Africa. International Edible Legume Conference, Durban, S. Africa.* p. 8.

Widders, I.E. 2004. Bean consumption reduces the risk of chronic diseases such as cancers, cardiovascular disease and type 2 diabetes. *Food Aid Conference, Tunis, Tunisia.*

Widders, I.E. 2003. *International Agriculture Research Priorities: The CRSP Perspective. Proceedings American Society of Agronomy.*

Widders, I.E. 1996. Activation of systemic acquired disease resistance in cucumber seed during germination. *HortScience* 31:569 (029).

Young, R.A., R. Hammerschmidt and I.E. Widders. 1996. Development of molecular markers for systemic acquired disease resistance in cucumber. *1996 Pickling Cucumber Improvement Committee Proceedings (Lexington, Kentucky).* p. 9.

Widders, I.E. and R. Hammerschmidt. 1995. Acquired disease resistance in pickling cucumbers is influenced by plant development and cultural factors. *Proceedings of Cucurbitaceae 94.* (G. Lester and J. Dunlap, eds.) 0. 176-178.

Newell, L., I.E. Widders and R. Hammerschmidt. 1994. Genotypic differences in the induction of disease resistance within *Cucumis sativus*. *HortScience* 29:471 (289).

Newell, L., I.E. Widders and R. Hammerschmidt. 1993. Acquired disease resistance: a viable strategy for disease management in pickling cucumbers. Proceedings 1993 Pickling Cucumber Improvement Committee Meetings, Chicago, IL. p. 34.

Newell, L., I.E. Widders and R. Hammerschmidt. 1993. Acquired disease resistance to angular leaf spot (*Pseudomonas syringae* cv. *lachrymans*). HortScience 28:230 (947).

Widders, I.E. 1993. Ion accumulation in pericarp and endocarp of cucumber fruit as influenced by xylem and phloem transport. HortScience 28:171 (566).

Widders, I. 1993. The impact of mechanical harvesting and handling on pickling cucumber quality. Proceedings of 1993 Spring Conference, Pickle Packers International, Inc., East Lansing, MI, p. 13-14.

Widders, I.E. 1992. Rapid changes in ion efflux from leaf mesophyll cells in response to rhizospheric salt or osmotic stress. Plant Physiol. 99(1):129.

Widders, I.E. and M.G. Kwantes. 1992. Nocturnal temperature and plant water deficit affect seed growth in cucumber fruit. Plant Physiol. 99(1):112.

Widders, I., R. Hammerschmidt and L. Newell. 1992. Influence of CGA 41396 on acid peroxidase activity and acquired disease resistance in pickling cucumbers under controlled environmental conditions. Proc. 1992 Cucurbit Conference, Raleigh, North Carolina, p. 42.

Widders, I.E., R. Hammerschmidt, M. Uebersax and L. Newell. 1992. Evidence for acquired disease resistance to angular leaf spot in field grown pickling cucumbers. Proc. 1992 Cucurbitaceae Conference, Raleigh, North Carolina, p. 48.

Wehner, T.C., G.W. Elmstrom, A. Gabert, J.E. Motes, J.E. Staub, G.E. Tolla and I.E. Widders. 1991. Genotype x environment interaction for yield of pickling cucumbers. Proceedings of the Symposium on Plant Breeding in the 1990's. Research Report No. 130, North Carolina State Univ., p. 22.

Arboleya, J. and I.E. Widders. 1991. Potassium nutrition of pickling cucumbers as related to fruit growth and plant photosynthesis. HortScience 26:127 (446).

Fernandes, R., I.E. Widders and M. Uebersax. 1991. Influence of endogenous calcium on post-processing textural quality of pickling cucumber fruit. HortScience 26:86 (153).

Hammerschmidt, R., I. Widders, M. Uebersax and D. Marshall. 1991. Systemic induction of disease resistance and wound healing in pickling cucumbers and its relationship to fruit storability and textural quality. Proceedings 1991 Pickling Cucumber Improvement Committee Meetings, p. 35.

- Widders, I.E. and M.G. Kwantes. 1991. Environmental effects on seed development and physiology in pickling cucumber fruit. Proc. 1991 Pickling Cucumber Improvement Committee Meetings, p. 34.
- Widders, I. 1991. A university researcher's perspective on future challenges and opportunities in pickling cucumber production. Proc. 1991 Pickling Cucumber Improvement Committee Meetings, p. 20-21.
- Widders, I.E. and M. Kwantes. 1990. Influence of NaCl on apoplastic ion accumulation and water relations of leaflet tissue of pea. HortScience 25:1077 (096).
- Garton, R. and I.E. Widders. 1990. Elemental content in tomato seedlings as influenced by pretransplant conditioning. HortScience 25:1129 (465).
- Kwantes, M. and I.E. Widders. 1990. Cucumber seed development as related to fruit growth and environmental factors. Proceedings 1990 PCIC Meetings, East Lansing, MI, p. 29.
- Fernandes, R., I.E. Widders and M. Uebersax. 1990. Influence of Ca fertilization and nutrition on textural quality of pickling cucumbers. Proceedings 1990 PCIC Meetings, East Lansing, MI, p. 32.
- Arboleya, J. and I.E. Widders. 1990. Potassium nutrition of pickling cucumbers as related to fruit growth and plant photosynthesis. Proceedings 1990 PCIC Meetings, East Lansing, MI, p. 34.
- Garton, R.W. and I.E. Widders. 1988. The influence of N and P nutrition on establishment of tomato transplants grown in plug trays. Proceedings International Conference on Stand Establishment for Horticultural Crops, p. 27.
- Garton, R.W. and I.E. Widders. 1988. Effects of pretransplant fertilization on nutrient status and growth of tomato seedlings. HortScience 23(3):810(651).
- Janoudi, A.K. and I.E. Widders. 1988. Osmotic adjustment in cucumber in response to water deficits. HortScience 23(3):799(577).
- Teng, W.L. and I.E. Widders. 1988. Apoplastic potassium accumulation in leaf lamina of pea. Plant Physiol. 86(4):101(609).
- Teng, W.L. and I.E. Widders. 1988. Ontogenetic changes in apoplastic potassium in leaf lamina of pea. HortScience 23(3):828(775).
- Widders, I.E. and A.K. Janoudi. 1988. Effects of water deficits on pickling cucumber productivity. HortScience 23(3):721(012).
- Widders, I.E. and M.A. Uebersax. 1987. Relationship of fruit anatomy and growth rate to quality of pickling cucumbers. HortScience 22(5):106(339).

Widders, I.E. 1986. Effects of phosphorus and nitrogen status in tomato seedlings on rates of growth and mineral uptake following transplanting. *HortScience* 21(3):176(507).

Fernandes, R.F. and I.E. Widders. 1986. The physiological importance of Ca status on quality of pickling cucumber fruit. *HortScience* 21(3):187(582).

Long, J.M. and I. Widders. 1985. Method for extraction of potassium from free space of leaf lamina tissue. *Plant Physiol.* 77(4):149(819).

Engelkes, C. and I. Widders. 1985. Calcium nutrition of pickling cucumber fruits. *HortScience* 20(3):91(340).

Hancock, J., I. Widders, J. Nelson and C. Schumann. 1984. Influence of foliar applied nitrogen on blueberry yield and quality. *Proceedings 5th North American Blueberry Research Workers Conference*, pp. 201-205.

Widders, I.E. and T. Moss. 1984. Absorption and translocation of foliar applied nitrogen in highbush blueberry. *HortScience* 19(3):118(539).

Widders, I.E. and O.A. Lorenz. 1980. Effects of age on potassium concentration in xylem sap and leaf tissue of tomato. *HortScience* 15(3):20.

ANNEX 3: SUPPORT LETTER FROM DEAN JEFFREY ARMSTRONG

MICHIGAN STATE UNIVERSITY

February 19, 2007

Ms. Charity Benson
Agreement Officer Team Leader
U.S. Agency for International Development
1300 Pennsylvania Ave. NW Rm 7.10-035
Ronald Reagan Building M/0AA/EGAT
Washington DC 20523

Dear Ms. Benson:

On behalf of the College of Agriculture and Natural Resources (CANR), I enthusiastically support Michigan State University's bid to become the Management Entity for the Dry Grain Pulses Collaborative Research Support Program (CRSP). This CRSP is consistent with MSU's Boldness by Design vision to be a "world grant" university. A goal of the CANR is to achieve international prominence by expanding the College's international reach through academic, research and economic development initiatives and global, national and local strategic alliances. I believe that providing technical and administrative leadership to the Dry Grain Pulses CRSP contributes to our achievement of that goal.

S

OFFICE OF THE
DEAN
**College of Agriculture
and Natural Resources**
Michigan State University
102 Agriculture Hall
East Lansing, MI
48824-1039
517/355-0232
fax: 517/353-9896
e-mail: armstroj@msu.edu
www.canr.msu.edu/

A priority commitment of MSU as a land-grant university is to serve the needs of the dry "bean" industry in Michigan, the U.S. and globally. Michigan ranks #2 nationally in bean production. Thus, the welfare of this industry is important to the economic future of Michigan and the vitality of rural farming communities. For this reason, MSU supports faculty positions in agriculture economics, crop science, bean breeding, plant pathology, food science, and human nutrition to address the needs of the bean sector. The presence of the Management Office for the Dry Grain Pulses CRSP in CANR will provide continued opportunity for MSU to maintain its position of leadership and excellence in pulse crop research and graduate programs, and to contribute to the growth of the "bean" sector nationally and internationally.

*MSU is an affirmative-action
Equal-opportunity employer.*

I also endorse the proposed appointment of Dr. Irvin Widders as the Director of the Dry Grain Pulses CRSP. Dr. Widders is a professor with 25 years of experience in vegetable crop physiology research and teaching in the Department of Horticulture at MSU. His leadership and administration of the Bean/Cowpea CRSP between 2000 and 2007 have been exemplary and brought distinction to MSU. The success of Dr. Widders in

strengthening CRSP ties with the bean and cowpea research programs at CIAT and IITA, respectively, as well as with the U.S. Dry Bean Council, a major stakeholder and beneficiary of the Bean/Cowpea CRSP, is commendable. I have total confidence that Dr. Widders will provide outstanding leadership to this new CRSP.

The prospect of the Management Office for the Dry Grain Pulse CRSP being a center for information gathering, intellectual dialog and scholarship on "health and nutrition" issues (a Focal Area for Developmental Impact) is exciting to MSU. A programmatic priority for the College is "Food and Health." With emerging interest by Michigan's agricultural community in promoting health and nutrition as a means of expanding market opportunities, the challenge is to better understand the contributions of food as components of diets to human health, consumer preferences for foods, the link between culture and foods, and the potential contributions of foods to addressing major societal health problems such as obesity and chronic diseases (e.g., cardiovascular disease, type 2 diabetes, and cancers). MSU faculty in the Department of Food Science and Human Nutrition will complement the demonstrated expertise of Dr. Widders in this increasingly important area.

I affirm MSU's commitment to provide an enabling administrative environment that will facilitate the achievement of the global program objectives of the Dry Grain Pulses CRSP by the Management Office, should MSU receive the "Leader" award. This commitment is also evidenced by MSU's substantial offer of cost share by lowering the indirect cost rate for Management Entity expenses as well as paying for a portion of the Director's salary.

Michigan State University desires the opportunity to manage the new Dry Grain Pulses CRSP and hopes for a positive outcome to the Management Entity competition. I strongly support this proposal and look forward to strengthen partnerships with EGAT/USAID in the future as we mutually strive to make accessible advances in agricultural science and technology for the benefit of human kind.

Sincerely,



Jeffrey D. Armstrong
Dean