

**IOWA STATE UNIVERSITY SUPPLEMENTAL BUDGET**

Type: UNIVERSITIES

**Fund-acct:**  
previous account: 404-40-45

Fed Type:

Sponsor: MICHIGAN STATE UNIVERSITY

Check ?	YES	NO
Amount: \$	_____	

Title: Enhancing Nutritional Value and Marketability of Beans Through Research and Strengthening

Prime Contractor: USAID-CRSP

Contract Period: 4/1/2008 to 9/30/2010

E Verify: N      ARRA: N

Lead PI: Mazur, Robert

ISU ID#: 541822442

Full/Allowable: Y

Department: Sociology-LAS

Research Location: Uganda & Rwanda

Admin D/I/C/E: Sociology-LAS

RRC Administering Unit: AES/CALS

Purpose: RESEARCH

Award Type: CONTRACT

Compliances	PI	Conflict	Name	ISUID	ACCT#	Incentive
Animal: N	1	N	Mazur, Robert	541822442	490-	15
Biohazard: N	2	N	Westgate, Mark	903620718	490-	0
Radiological: N	3	N	Jensen, Helen	025483709	490-	0
Human: N	4	N	Hendrich, Suzanne	069025965	490-	0
	5	N	Reddy, Manju	022673723	490-	0
	6	N	Murphy, Patricia	700844116	490-	0

**BUDGET**

Salaries/Hourly:	\$22,988
Payroll Benefits:	\$2,347
Equipment:	
Travel - Domestic:	
Travel - Foreign:	\$17,513
Student Tuition:	\$8,284

*Revised GS to change Admin D/I/C/E from CSRC-AES to Soc-LAS Attached.*

*MR 10/27/09*

**Supplies/Materials**

Ag and Vet Supplies:  
Lab/Research Supplies:  
Other Supplies: \$500

**Subcontracts**

Subject to IDC:  
NOT Subject to IDC: \$79,632

**Other Direct Costs**

Telecom Charges:  
Computer Usage:  
Printing/Copying:  
Honoraria/Services:  
Postage:  
Other: \$1,037

**RRC Distribution**

Unit	RRC 45%	If changes needed:		Date
		New RRC %	Signature	
AES	5.01 %	%	_____	/ /
HS	1.74 %	%	_____	/ /
LAS	38.25 %	%	_____	/ /

OSPA Approval: \_\_\_\_\_  
SPA Approval: \_\_\_\_\_

TOTAL DIRECT COSTS: \$132,301  
Indirect Costs: \$11,540  
TOTAL ALL COSTS: \$143,841

**This section is for Sponsored Programs Accounting use ONLY**

Rate 2690 Base 44,385 Code \_\_\_\_\_ IDC Budget \_\_\_\_\_  
Rate \_\_\_\_\_ Base \_\_\_\_\_ Code \_\_\_\_\_ IDC Budget \_\_\_\_\_

Resp Code: \_\_\_\_\_ Prime Contractor: USAID-CRSP

Contract #: 612950 CFDA: \_\_\_\_\_

Reimbursement Type:  C  F Account Type: \_\_\_ Admin \_\_\_ Sub of: \_\_\_\_\_

Bill: \_\_\_\_\_ Eligible for Incentive: YES (see above) NO

**AMENDMENT NO. 3**  
**61-2950**  
**To the Subagreement**  
**Between**  
**Michigan State University**  
**And**  
**Iowa State University**

*Buds  
for  
\$130,470*

The Subagreement No. 61-2950 between Michigan State University (MSU) and The Iowa State University (LEAD INSTITUTION) for the Dry Grain Pulses CRSP project titled, "Enhancing Nutritional Value and Marketability of Beans through Research and Strengthening Key Value Chain Stakeholders in Uganda and Rwanda," under Prime Award No. EDH-A-00-07-00005 is amended in part as follows:

**Article IV. Amount of Subagreement.** Delete the first and second paragraphs of the article and substitute the following:

The total estimated amount of the Subagreement shall not exceed Five Hundred Ten Thousand Five Hundred Fifty Three US Dollars (US\$ 510,553.00). Said amount consist of:

<b>OBLIGATION THRU AMENDMENT 1 &amp; 2</b>	
FY08-09 18-month project budget (4/1/08-9/30/09)	\$319,530.00
FY09 Supplemental Institutional Capacity Building budget	\$47,182.00
<b>AMENDMENT NO. 3 OBLIGATION INCREASE:</b>	
FY10 12-month project budget (10/1/09-9/30/10)	\$130,470.00
FY10 Supplemental Institutional Capacity Building budget	\$13,371.00
<b>TOTAL OBLIGATION</b>	<b>\$510,553.00</b>

MSU previously obligated the amount of Three Hundred Sixty Six Thousand Seven Hundred Twelve US Dollars (US\$366,712.00), as partial funding of the total estimated amount set forth above. Via this amendment MSU obligates


- 1- An additional One Hundred Thirty Thousand Four Hundred Seventy US Dollars (US\$130,470.00) as funds towards the fulfillment of the approved FY 2010 work plans (10/1/09-9/30/10—posted on the Pulse CRSP website) and represents final balance of the 30 months approved budget (4/1/08-9/30/10). Funds obligated hereunder should be sufficient for project expenditures through approximately September 30, 2010.
- 2- An additional Thirteen Thousand Three Hundred Seventy One US Dollars (\$13,371.00) to be exclusively expended for the purpose of enhancing the capacity of collaborating Host Country institutions (KIST \$6,050.00 & Makerere \$7,321.00). These funds are being provided in response to proposals received and subsequently approved by the Technical Management Advisory Committee (TMAC) of the Dry Grain Pulses CRSP. The Institutional Capacity funds are to be expended in accord with the budget and conditions specified in the attached Memorandum from the Management Office (see the letters from the Director of the Pulse CRSP dated September 29, 2009).

The total amount of obligation is now Five Hundred Ten Thousand Five Hundred Fifty Three US Dollars (US\$ 510,553.00).

LEAD INSTITUTION may not exceed the total estimated amount or the obligated amount of this Subagreement, whichever is less.


All other terms and conditions of this Subagreement will remain unchanged.

For Michigan State University

*jcp*  \_\_\_\_\_ 10-12-09  
Signature Date

*for*  
Typed Name and Title: Evonne Pedawi, Senior Contract & Grant Administrator

Authorized Contract officer for Iowa State University

 \_\_\_\_\_ 10/13/09  
Signature Date

Typed Name and Title **Tammy Polaski**  
**Associate Director**  
**Office of Sponsored Programs Administration**  
**Iowa State University**

Correct



<b>PULSE CRSP</b>	Year 1 (04/01/08- 09/30/08)	Year 2 (10/01/08- 09/30/09)	Year 3 (10/01/09- 09/30/10)	
<b>Iowa State University</b>				
<b>Personnel</b>				
<b>Graduate Research Asst., PhD - FSHN (25% time)</b>				
hourly prior to assistantship	\$1,000			
Stipend	\$1,214	\$9,780	\$9,213	\$20,207
<b>Graduate Research Asst., PhD-AGRON (25% time)</b>				
hourly prior to assistantship	\$1,000			
Stipend	\$1,214	\$9,780	\$9,213	\$20,207
<b>Undergraduate Research Assistants (3)</b>	\$2,280	\$4,560	\$4,560	\$11,400
<b>Subtotal Personnel</b>	<b>\$6,708</b>	<b>\$24,120</b>	<b>\$22,986</b>	<b>\$53,814</b>
<b>Fringe Benefits</b>				
<b>Grad. Research Asst., PhD - FSHN (25% time)</b>				
hourly benefits (11.6%)	\$116			
Benefits (11.6%)	\$141	\$1,134	\$1,069	\$2,344
<b>Grad. Research Asst., PhD - AGRON (25% time)</b>				
hourly benefits (11.6%)	\$116			
Benefits (11.6%)	\$141	\$1,134	\$1,069	\$2,344
<b>Student Hourly</b>				
Benefits (4.6%)	\$105	\$210	\$210	\$524
<b>Subtotal Fringe Benefits</b>	<b>\$618</b>	<b>\$2,479</b>	<b>\$2,347</b>	<b>\$5,444</b>
<b>Travel (International)</b>				
<b>PI &amp; 2 ISU Co-PIs (3 persons total)</b>				
Airfare (international, to Uganda & Rwanda)	\$8,250	\$8,498	\$8,752	\$25,500
Lodging (\$70 * 15 days)	\$3,150	\$3,245	\$3,342	\$9,736
Meal Per Diem (\$30 * 15 days)	\$1,350	\$1,391	\$1,432	\$4,173
Vaccinations & Medical / Evac. Insurance	\$600	\$618	\$637	\$1,855
Ground Transportation	\$250	\$250	\$250	\$750
Visas/Fees (2 countries)	\$450	\$450	\$450	\$1,350
<b>Graduate Research Assistants to/from U.S.</b>				
Airfare (\$2750 * 2 persons)	\$5,500	\$2,833		\$8,333
Lodging & Meals Per Diem (\$50/d * 45 days)		\$2,250	\$2,250	\$4,500
Ground Transportation	\$300	\$300	\$300	\$900
Visas/Fees	\$200	\$100	\$100	\$400
<b>Subtotal Travel</b>	<b>\$20,050</b>	<b>\$19,933</b>	<b>\$17,513</b>	<b>\$57,496</b>
<b>Equipment</b>				
Equipment	\$0	\$0	\$0	
<b>Material and Supplies</b>				
Computer (notebook)	\$2,000			\$2,000
Research Equipment	\$1,000	\$1,000	\$500	\$2,500
<b>Subtotal Material &amp; Supplies</b>	<b>\$3,000</b>	<b>\$1,000</b>	<b>\$500</b>	<b>\$4,500</b>
<b>Contractual Services</b>				
	\$0	\$0	\$0	
<b>Host Country Subawards</b>				
Makerere Subcontract	\$24,435	\$39,300	\$24,641	\$88,376
NaCCRI Subcontract	\$12,249	\$19,093	\$12,757	\$44,099
VEDCO Subcontract	\$25,960	\$32,131	\$18,107	\$76,198
KIST Subcontract	\$14,337	\$17,202	\$10,756	\$42,295
<b>Subtotal Host Country Subaward</b>	<b>\$76,981</b>	<b>\$107,726</b>	<b>\$66,261</b>	<b>\$250,968</b>
<b>Tuition</b>				
<b>Research Asst., PhD - FSHN (25% time)</b>				
Tuition	\$611	\$3,955	\$4,142	\$8,708
<b>Research Asst., PhD - AGRON (25% time)</b>				
Tuition	\$611	\$3,955	\$4,142	\$8,708

<b>Subtotal Tuition</b>	\$1,223	\$7,911	\$8,284	\$17,417
<b>Other Direct Costs</b>				
Communication (long distance, fax, DHL, etc.)	\$463	\$750	\$1,037	\$2,250
<b>Subtotal Other Direct Costs</b>	\$463	\$750	\$1,037	\$2,250
<b>Subtotal ISU Direct Costs</b>	\$109,042	\$163,919	\$118,928	\$391,889
<b>Indirect Costs</b>				
Overhead 26% (excl. equipment, tuition, all subs)	\$8,018	\$12,553	\$11,540	\$32,111
Overhead 26% * \$25K of ea. sub (M, N, V, K)	\$19,765	\$6,235	\$0	\$26,000
<b>Subtotal Indirect Costs</b>	\$27,783	\$18,788	\$11,540	\$58,111
<b>Total ISU</b>	\$136,825	\$182,707	\$130,468	\$450,000
<b>Cost Share</b>				
<b>Salary</b>				
R. Mazur, PI (10% AY)	\$4,330	\$8,854	\$9,119	\$22,303
S. Hendrich, Co-PI (2.5% AY)	\$1,647	\$3,368	\$3,469	\$8,484
M. Westgate, Co-PI (2.5% CY)	\$1,329	\$2,717	\$2,799	\$6,845
H. Jensen, Co-PI (2.5% AY)	\$2,197	\$4,492	\$4,492	\$11,182
<b>Subtotal Personnel</b>	\$9,503	\$19,431	\$19,879	\$48,813
<b>Fringe Benefits</b>				
R. Mazur, PI (26.7%)	\$1,156	\$2,364	\$2,435	\$5,955
S. Hendrich, Co-PI (26.7%)	\$440	\$899	\$926	\$2,265
M. Westgate, Co-PI (26.7%)	\$355	\$725	\$747	\$1,828
H. Jensen, Co-PI (26.7%)	\$587	\$1,199	\$1,199	\$2,985
<b>Subtotal Fringe Benefits</b>	\$2,537	\$5,188	\$5,308	\$13,033
<b>Subtotal ISU Cost Share</b>	\$12,040	\$24,619	\$25,187	\$61,847
<b>Indirect Costs</b>				
Overhead 26% (excl. equipment, tuition)	\$3,130	\$6,401	\$6,549	\$16,080
<b>Total ISU Cost Share</b>	\$15,171	\$31,020	\$31,736	\$77,927

## Dry Grain Pulses CRSP (budget template 10/1/09-9/30/10)

Enhancing Nutritional Value and Marketability on Beans through Research and Strengthening Key Value Chain Stakeholders in Uganda and Rwanda

Third period (12 months) 10/01/09 - 09/30/10

Institution Name	U.S. Institution	U.S. for Host Country	HC or U.S. Institution (1)	HC or U.S. Institution (2)	HC or U.S. Institution (3)	HC or U.S. Institution (4)
	ISU	ISU	Makerere U.	NaCRRI	VEDCO	Kigali Inst.
<b>a. Personnel Cost</b>						
Salaries	\$4,560	\$18,426	\$11,400	\$4,800	\$8,837	\$5,100
Fringe Benefit	\$210	\$2,137				
<b>b. Travel</b>						
	\$14,863	\$2,650	\$6,451	\$3,994	\$1,000	\$2,614
<b>c. Equipment (\$5000 Plus)</b>						
	\$0		\$0	\$0	\$0	\$0
<b>d. Supplies</b>						
	\$500		\$1,413	\$2,554	\$1,774	\$890
<b>e. Training</b>						
Degree		\$8,284	\$1,500			\$750
Non-Degree						
<b>f. Other</b>						
	\$1,037		\$1,637	\$250	\$4,650	\$424
<b>g. Total Direct Cost</b>	<b>\$21,170</b>	<b>\$31,497</b>	<b>\$22,401</b>	<b>\$11,598</b>	<b>\$16,461</b>	<b>\$9,778</b>
<b>h. Indirect Cost</b>						
	\$5,504	\$6,035	\$2,240	\$1,160	\$1,646	\$978
<b>i. Indirect Cost on Subcontracts (First \$25000)</b>						
	\$0.00	\$6,035	\$2,240	\$1,160	\$1,646	\$978
<b>j. Total Indirect Cost</b>	<b>\$5,504</b>	<b>\$6,035</b>	<b>\$2,240</b>	<b>\$1,160</b>	<b>\$1,646</b>	<b>\$978</b>
<b>Total</b>	<b>\$26,674</b>	<b>\$37,532</b>	<b>\$24,641</b>	<b>\$12,758</b>	<b>\$18,107</b>	<b>\$10,756</b>
<b>Grand Total</b>	<b>\$130,470</b>					

Total direct cost budgeted for U.S. institution(s)	Amount	Percentage
Total direct cost budgeted for H.C Institution(s)	\$52,667.00	46.65%
	\$60,238.00	53.35%

Cost Share	U.S. Institution	U.S. for Host Country	HC or U.S. Institution (1)	HC or U.S. Institution (2)	HC or U.S. Institution (3)	HC or U.S. Institution (4)	Total
	In-kind	Cash					
	\$31,736.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$31,736.00
<b>Total</b>	<b>\$31,736.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$31,736.00</b>
<b>Attribution to IEHA Objectives</b>							
Percentage of effort	81.00%	81.00%	90.00%	90.00%	90.00%	90.00%	85.57%
Amount corresponding to effort	\$21,605.94	\$30,400.92	\$22,176.90	\$11,482.20	\$16,296.30	\$9,680.40	\$111,642.66
<b>Attribution to Capacity Building (Theme "D")</b>							
Percentage of effort	55.00%	55.00%	89.00%	89.00%	83.00%	87.00%	71.27%
Amount corresponding to effort	\$14,670.70	\$20,642.60	\$21,930.49	\$11,354.62	\$15,028.81	\$9,357.72	\$92,984.94

Name of PI & Institutional Affiliation: Dr. Robert Mazur, Iowa State University



## DRY GRAIN PULSES CRSP MANAGEMENT OFFICE

Michigan State University  
321 Agriculture Hall  
EAST LANSING, MICHIGAN 48824-1039

VOICE: (517) 355-4693  
FAX: (517) 432-1073  
E-MAIL: [widders@msu.edu](mailto:widders@msu.edu)  
URL: [www.pulsecrsp.msu.edu](http://www.pulsecrsp.msu.edu)

September 29, 2009

### MEMORANDUM

To: Dr. Hilda Vasanthakaalam (KIST) and Dr. Robert Mazur (ISU)  
FROM: Irvin Widders, Director, Dry Grain Pulses CRSP  
RE: FY 2010 Funding to Enhance Host Country Institutional Capacity

The Management Office of the Dry Grain Pulses CRSP is pleased to inform you that FY 2010 Institutional Capacity Building Funds have been approved for the following proposal.

Proposal Title: *Enhancing Nutritional Value and Marketability of Beans through Research and Strengthening Key Value Chain Stakeholders in Uganda and Rwanda*

Beneficiary Host Country Institution: Kigali Institute of Science & Technology (KIST), Rwanda

Approved Activity: The purchase of a single screw extruder and supplies to strengthen the food science research capacity of KIST

Amount to be Obligated in FY10: \$ 6,050

The following are comments and a recommendation provided by Technical Management Advisory Committee (TMAC) to the Management Office following review of the above identified proposal.

*"The TMAC only recommended financial support for the single screw extruder and supplies (total funding of \$6,050) as this would strengthen the research capacity of KIST in the area of Food Science and create opportunities to develop value added bean-based processed foods. The support of a lab technician and a junior research fellow were not considered to be sustainable interventions. The TMAC also commented that host country institutions such as KIST must assume responsibility for staffing of research and academic facilities. External donors should not be responsible of providing financial support for large portions of a program."*

Please be informed that the approved amount of \$6,050 will be obligated via an Amendment by Michigan State University to the sub-contract with the Iowa State University for the above identified Phase I Dry Grain Pulses CRSP project (PI-ISU-1).

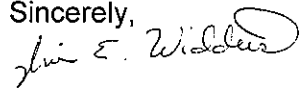
Since FY 2010 is the third and final year of Phase I projects, these funds must be spent by the sub-subcontracted Host Country institution for the intended institutional capacity building purpose prior to September 28, 2010. The expectation of the Management Office is that the Iowa State University will view these as pass-through funds and thus not charge indirect costs. The Fixed Price Contract with the Kigali Institute of Science & Technology (KIST), Rwanda should be amended for this amount of supplemental funds.

Proposa  
for  
\$6,050  
\$13,37

Please also be reminded that the PIs are required to submit an Equipment Authorization and Request to Purchase Form to the MO and obtain approval from USAID prior to the purchase of equipment costing >\$5,000. This form can be downloaded from the web page of the Dry Grain Pulses CRSP ([www.pulsecrsp.msu.edu/](http://www.pulsecrsp.msu.edu/)).

If you have any questions regarding this award, please feel free to contact the Management Office of the Dry Grain Pulses CRSP.

Sincerely,

A handwritten signature in cursive script that reads "Irvin E. Widders".

Dr. Irvin E. Widders



## Dry Grain Pulses CRSP

### PROPOSAL TO ENHANCE HOST COUNTRY INSTITUTIONAL CAPACITY

**Host Country Institution:** Kigali Institute of Science and Technology

**Host Country PI:** Dr. Hilda Vasanthakaalam

**Full Address:** Senior Lecturer, Department of Food Science & Technology,  
Kigali Institute of Science and Technology, BP: 3900, Kigali, Rwanda

**Phone:** 250-078530367

**Fax:**

**Email:** [hildajeya@hotmail.com](mailto:hildajeya@hotmail.com), and [h.vasanthak@kist.ac.rw](mailto:h.vasanthak@kist.ac.rw)

**Lead U.S. PI and University:** Dr. Robert Mazur, Iowa State University

#### A. Justification:

The research work at KIST has been appreciable so far. Further capacity building is essential. The Department has a prospective staff member who has finished her Masters Program in the Netherlands. With the incorporation of two new tutorial assistants, there is scope for increased capacity building. Hiring an additional laboratory technician to assist in the analysis of the samples and product development will go a long way to accelerate work in the project, since the Co-PI has been assigned to serve as Head of the Department soon after initiation of the project. The Team in Rwanda will be enhanced through such an approach. The Department can internally advertize for a Junior Research Fellow (from the graduating 4<sup>th</sup> year students) to build capacity in the areas of research. The research work needs a single screw extruder that can be taken for extension activities to the farmers.

#### B. Proposed Activity:

The Department has now four new labs, but only one technician. Hence, his services are inadequate for our needs. Therefore, hiring of another new lab technician exclusively for the project will facilitate strengthening the team in Rwanda. It will also strengthen the work of the technician in the field of beans research, and strengthen research in the Department. The technician will also serve as a link in the transfer of technology from lab to land.

#### C. Innovation/Cutting Edge:

KIST has the Nyagatare Satellite Centre that enables us to reach farmers. It is anticipated that the single screw extruder will help to reach farmers in Nyagatare to disseminate on value addition

along with the other traditional products that will be developed to enable them to understand and appreciate the diverse food products that can be developed. One Junior Research Fellow, a Lab Technician and one staff as MSc student will add to the capacity building activity in the country.

#### **D. Relationship to Pulse CRSP Projects:**

Research is being conducted in the country on different food crops such as bananas, pineapples, etc., but not on beans, particularly concerning value addition. Beans, though widely consumed and enjoyed as an important traditional food, do not have a great 'value of importance' as it ought to have. Therefore, the farmer who takes beans crop for granted will become a 'proud farmer' after knowing the worth and value of the crop. This was already felt by the researcher who has made several interactions with the farmers. It has already created interest in the eyes of the scientists and even the general public. On the other hand, consumption of value added products will help to reduce malnutrition among the farming population. There are school feeding programs in the country through which these recipes can be incorporated to overcome protein energy malnutrition.

#### **E. Gender Equity:**

Girl children are encouraged and given priority to go to school. Universal Free Primary Education is the concept through which the country is now working to increase the level of literacy. It will no longer be only girl children going to the farm to work. In addition, the extension of knowledge will help to enjoy cooking value added bean products both for home consumption and also for livelihood of their families on a small scale.

#### **F. Time Frame for Implementation:**

This work for which the supplemental fund is requested fits within the time frame of the project, as they do not involve additional activities but will enhance the already planned work.

**G. Budget:**

Designation	Monthly Cost	Total Per Year (USD)	Total for 2 Years
<b>Personnel</b>			
Lab Technician	300	3,600	3,600
Junior Research Fellow	300	3,600	3,600
Stipend	500	6,000	12,000
<b>Tuition and Fees</b>			
MSc at Makerere		5,100	10,200
Other Academic Fees	100	1,200	2,400
Research Fee		500	1,000
Project Defense			500
<b>Transportation</b>			
Air Ticket (2 times)		360	720
Bus Transportation (2 times/year)		50	100
<b>Materials and Supplies</b>			
Extension Materials		750	750
Extruder		4,750	4,750
<b>Sub-total</b>		<u>25,910</u>	<u>39,620</u>
<b>Administration Fee (10%)</b>		2,591	3,962
<b>TOTAL REQUESTED</b>		<b>\$28,501</b>	<b>\$43,582</b>

5500  
x 1.1  
-----  
6050

**Cost Sharing by KIST**

70% of salary for TA when at MAK	294	3,528	7,056
Staff at CITT Satellite Centre		500	500
Transportation within Nyagatare		300	300
Communication		100	100
<b>Total Cost Sharing</b>		<b>\$4,428</b>	<b>\$7,656</b>

**Signatures:**

**U.S. University Lead PI**

Robert E. Mazur                      *RM Mazur*                      July 3, 2009  
 Typed Name                                      Signature                                      Date

**Host Country PI or Institutional Representative**

Hilda Vasanthakaalam                      *Hilda Vasanthakaalam*                      3 July 2009  
 Typed Name                                      Signature                                      Date



## DRY GRAIN PULSES CRSP MANAGEMENT OFFICE

Michigan State University  
321 Agriculture Hall  
EAST LANSING, MICHIGAN 48824-1039

VOICE: (517) 355-4693  
FAX: (517) 432-1073  
E-MAIL: [widders@msu.edu](mailto:widders@msu.edu)  
URL: [www.pulsecrsp.msu.edu](http://www.pulsecrsp.msu.edu)

September 29, 2009

### MEMORANDUM

To: Dr. Dorothy Nakimbugwe (Makerere University) and Robert Mazur (ISU)  
FROM: Irvin Widders, Director, Dry Grain Pulses CRSP  
RE: FY 2010 Funding to Enhance Host Country Institutional Capacity

The Management Office of the Dry Grain Pulses CRSP is pleased to inform you that FY 2010 Institutional Capacity Building Funds have been approved for the following proposal.

Proposal Title: *Enhancing Nutritional Value and Marketability of Beans through Research and Strengthening Key Value Chain Stakeholders in Uganda and Rwanda*

Beneficiary Host Country Institution: Makerere University, Uganda

Approved Activity: The short term training of the MSc. graduate student (Catherine Ndagire) from Makerere University at Iowa State University.

Amount to be Obligated in FY10: \$7,320.50

The following are comments and a recommendation provided by Technical Management Advisory Committee (TMAC) to the Management Office following review of the above identified proposal.

*"The TMAC considers short term training at U.S. universities to be an investment that contributes much to the professional formation of young host country scientists. It therefore strongly supported the short term training of the MSc. graduate student (Catherine Ndagire) at Makerere University at Iowa State University. The TMAC on the other hand had genuine reservations about the need and potential contribution of a Muti Micro-plate Reader to the achievement of the research objectives of the Dry Grain Pulses CRSP project at Makerere. The justification in the proposal was weak. Moreover, the TMAC suspects that much lower cost spectrophotometers could be purchased to provide the same analytical capabilities even though automation would be compromised."*

Proposa  
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\$13,3

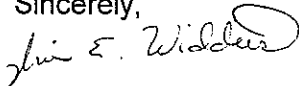
Please be informed that the approved amount of \$7,320.50 will be obligated via an Amendment by Michigan State University to the sub-contract with the Iowa State University for the above identified Phase I Dry Grain Pulses CRSP project.

Since FY 2010 is the third and final year of Phase I projects, these funds must be spent by for the intended institutional capacity building purpose prior to September 28, 2010.

If the funds are to be expended by the Host Country institution, the expectation of the Management Office is that the Iowa State University will view these as pass-through funds and thus not charge indirect costs. The Fixed Price Contract with Makerere University in Uganda should then be amended for this amount of supplemental funds.

If you have any questions regarding this award, please feel free to contact the Management Office of the Dry Grain Pulses CRSP.

Sincerely,



Dr. Irvin E. Widders

## Dry Grain Pulses CRSP

### PROPOSAL TO ENHANCE HOST COUNTRY INSTITUTIONAL CAPACITY

**Host Country Institution:** Makerere University

**Host Country PI:** Dr. Dorothy Nakimbugwe

**Full Address:** Department of Food Science & Technology, P.O. Box 7062, Kampala Uganda

**Phone:** +256 414 533 676; **Fax:** + 256 414 531 641

**Email:** [dnakimbugwe@agric.mak.ac.ug](mailto:dnakimbugwe@agric.mak.ac.ug) or [dngabo@yahoo.co.uk](mailto:dngabo@yahoo.co.uk)

**Lead U.S. PI and University:** Dr. Robert Mazur, Iowa State University

#### C. Justification:

This request for supplemental funds has two sub-components:

1. Equipment (Multi Micro-plate Reader)
2. Support for Graduate student (3 months research at Iowa State University)

#### 1. Request for Multi Micro-plate Reader

The Department of Food Science & Technology at Makerere University (DFST-Mak) was granted USD \$4000 in 2008 to purchase a 'Rapid Nutrient Analyzer,' but after wide consultations with Suppliers and faculty members at ISU, the team agreed that it is best to apply for supplemental fund and purchase the Synergy HT Multi-Mode Microplate Reader which has a wide range of applications for research, teaching and industry support. The Synergy HT Multi-Mode Microplate Reader can be used for enzyme kinetics studies, colorimetry and microbiological assays useful for assessing effectiveness of processing, thus improving food product safety and shelf-life. Work of Pulse CRSP graduate students at Mak-DFST involves several of the analyses described above, which are currently done using traditional, time consuming methods. Obtaining the reader will greatly enhance research capacity and speed up the students' work. The students will learn modern analytical techniques and use of the modern equipment. Having the Microplate Reader will also enhance analytical capacity at Mak-DFST as it reads 6-384 samples at a time; it will therefore greatly reduce waiting times and can also be programmed to run overnight, resulting in higher efficiency; uses smaller amounts of samples (micro liters) therefore requires lower volumes of reagents and will result in considerably lower requirements for reagents and has a wide range of applications, i.e., no fluorescence or luminescence.

#### 2. Support for graduate student (short-term research at Iowa State University)

A 2<sup>nd</sup> MSc. Student (Catherine Ndagire) has started her work on the Pulse CRSP project at Mak-DFST. One of the objectives of her work is to develop and optimize a protocol for a nutrient-dense, ready-to-eat product, utilizing the bean flour. The product will be optimized for nutrients, cost, shelf-life and sensory properties. The expertise and software required are currently not available at Mak-DFST, but they are available at ISU. In addition, while Mak-DFST is involved in product development works in different projects. The products are not optimized. The training will therefore be beneficial not only to Cathy but to Mak-DFST, as she will return and teach other researchers the techniques. We therefore also propose to buy the software.

**B. Proposed Activity:**

The Synergy™ 2 Multi Micro-plate Reader (SLFA)

1. The Micro reader is quoted at \$40,000 including shipping, handling and installation costs. Out of the \$40000, \$4000 was awarded in 2008. In addition, \$3000 was left over from purchase of a lab scale grinder. The total amount available is therefore \$7000. The additional amount being requested for equipment is therefore \$ 40000 - \$7000 = \$33,000.
2. MSc student support  
The MSc student will spend 3 months at ISU. She will be hosted in collaborators' lab without charges, except for \$1000 for lab supplies. The requested supplemental funds will therefore cover travel ticket, insurance and a living allowance of \$1000/month.

**C. Innovation/Cutting Edge:**

1. The current trend in nutrient analysis is towards use of rapid methods, that give results in real-time as opposed to the traditional, more time consuming techniques. The Synergy HT Microplate reader is a modern piece of equipment, currently being widely used in research. (Please see Section 'proposed activity' sub-section (1) for the cutting edge features).
2. Supporting the Makerere University MSc. student to undertake part of her research at Iowa State University will enhance the collaborative relationship between the two Institutions. The student will be exposed to modern research facilities that are still lacking at Makerere University and benefit from mentoring of highly experienced professors.

**D. Relationship to Pulse CRSP Projects:**

Current and future work of the Pulse CRSP project includes nutrient analyses conducted on beans and value-added bean flour and products. Success in the current project will lead to: good recommendations to farmers on the best agronomic practices for enhanced bean yields and nutritional value; successful product development will contribute to improved image of beans, increased bean consumption and an improved market for beans, resulting in higher incomes and better livelihoods for farmers. Developing a bean-based snack for school children will contribute to their improved nutrition, health and school performance. Having modern analytical equipment in the Department will contribute to success of the current and future CRSP projects and also facilitate other research work by students and staff. During the 3 months at ISU, Ugandan the MSc. student will work alongside the Ugandan PhD student, under co-supervision of the same faculty members. The coordinated teamwork should greatly enhance project outcomes positively.

**E. Gender Equity:**

The majority of bean growers in Uganda are women. Beans have a lowly image of being 'poor people's food.' Improving the image of beans by developing value-added products will increase their demand, create market for producers and ultimately increase farmer incomes. Preparing/packing snacks for school children is the responsibility of women. Currently, snacks on the market are expensive and less nutritious. The MSc student for whom funding is being sought is female. Supporting her will increase will further complement the gender balance on our project.

**F. Time Frame for Implementation:**

- ◆ The funds here requested fits within the implementation time line of the project.
- ◆ The MSc. student will complete her research by August 2010.

**G. Budget:**

<b>Item/Activity</b>	<b>Details</b>	<b>Amount</b>
<b>1. Equipment</b>		
Synergy™ HT Multi Micro-plate Reader (SLFA)	1 Piece including shipping/handling	33,000
<b>Sub Total</b>		<b>\$33,000</b>
<b>2. Training costs for Makerere student at Iowa State University</b>		
Air ticket	1 return	2,500
Visa fees		150
Insurance	comprehensive for 90 days	300
Accommodation	\$400/month	1,200
Meals	\$10/day for 90 days	900
Transportation (bus pass)	\$35/month	105
Lab. Supplies	Miscellaneous	1,000
Incidentals		500
<b>Sub Total</b>		<b>6,655</b>
<b>Total</b>		<b>39,655</b>
10% Admin fees		3,966
<b>GRAND TOTAL REQUESTED</b>		<b>\$43,621</b>
<b>Cost sharing Items Makerere</b>		
Office space	\$150 x 12 months	1,800
Laboratory space	\$200 x 12 months	2,400
Broadband internet access	\$100 x 12 months	1,200
<b>TOTAL COST SHARING</b>		<b>\$5,400</b>

*x 1.10  
= 7320.50*

**Signatures:**

**U.S. University Lead PI**

Robert E. Mazur \_\_\_\_\_ July 2, 2009  
 Typed Name Signature Date

Host Country PI or Institutional Representative  
 Dorothy Nakimbugwe \_\_\_\_\_ July 2, 2009  
 Typed Name Signature Date