Africa RISING Fast Track Workplan 2012: Sustainable Intensification of Cereal-Based Farming Systems in the Sudano-Sahelian Zone

IITA, June 2012

A. Ghana

Activity	Measurable deliverables	Country	Target Region	Lead Investigator (s)	Lead Institute (s)	Key Parners
Outcome 1: Sustainable increased of whole-farm productivity						
Output 1.1 Integrated crop and livestock production systems developed, evaluated, and effectively delivered to end users						
1.1.1 Baseline survey to identify bio-physical and socio-economic constraints, opportunities and entry points in rice-based systems	1) Spatial database that includes biophysical and socioeconomic data sets on constraints and opportunities available for use for planning interventions; 2) Study report ready by end of December, 2012	Ghana	NR, UER, UWR	AN Wiredu/PM Etwirew/JB Kamburi (SARI)/Aminou Arouna (AfricaRice)	SARI/AfricaRice	CSIR/AVRDC/UDS/ MoFA
1.1.2 Community and livelihood analysis	1) Front-line staff trained by 30 May; 2) Report ready by 30 July 2012	Ghana	NR, UER, UWR	Larbi/Kamara	IITA	MoFA
1.1.3 Bio-physical soil characterization	1) Proposal developed by 30 May; 2) Soil sampling completed by 30 September, 2012	Ghana	NR, UER, UWR	Larbi/Dogbe	IITA	SRI/SARI/UDS/MoFA
1.1.4 Conduct gender assessment survey to identyfy constraints and opportunities for women and women's groups in agriculture intensification	1) Key women's group in project sites idenfied; 2)Study report ready by end of September, 2012.	Ghana	UER, UWR, NR	Glady/Larbi	UDS/ITA	MoFA/MoH
1.1.5 Introduce and evaluate crop varieties and management practices (planting dates, spacing, density etc) and integrated soil fertility, weed, insect pest and disease options options to optimize crop productivity	1) Field trials on integrated soil fertility, parasitic weed, pest and disease management established by July 2012, 2) Database on responses of cereals and legumes to integrated soil fertility, parasitic weed, pest and diseases available by September; 3)Ten Farmer to farmer video's in integrated Striga and soil fertility management translated into local languages of northern Ghana by July 2012. 4) DVD with Fighting Striga videos mass-multiplied, and dissemination stragegy developed for project traget zones by September 2012; 5) Improved sorghum varieties/hybrids tested in 2 districts in UER and UWR	Ghana	NR, UER, UWR	Larbi/Kamara/Abaidoo/Weltzien/Atokple	IITA/ICRISAT	SARI/SANREM-CRSP/KNUST/Grain&Pulses CRSP

1.1.6 Organize community-based rice, maize, sorghum legume seed production systems and link to seed companies	For rice systems: 1) Partners responsisble for seed production identified by May and foundation seed available; 2) At least 5ha seed farms establsihed by September; 3) At laest 10t of rice seed of best quality produced in 2012; For maize systems: 1) At least 2 community based seed systems established and linked to seed companies, 2) At least 10t of maize and legume foundation seed produced; For sorghum systems: 1)Two women's groups trained in sorghum seed production in UWR and at least 500 kg of seed produced	Ghana	UER, UWR, NR	Larbi/Dogbe/Roger /Ayaji/Siise/Weltzi en	IITA /AfricaRice/ICRISA T/SARI	SEEDPAG, MoFA, ICOUR, FOs , Antika Seed, Savanna Seed, CRS, Doodiyiri and Yungo womem's gropus
1.1.7 Organize workshop to review potentials and opportunities for intensification of ruminant and non-ruminant production systems in northern Ghana	1) Work-shop organized by August; 2) Preliminary report prepared by September 2012	Ghana	NR, UER, UWR	Karbo/Fall	ILRI	MoFA/UDS/ARI
1.1.8 Build on existing innovation platforms to promote ruminant and non-ruminant value chains through action research.	Initiation meetings held and plans of action established	Ghana	NR, UER, UWR	Karbo/Fall	ARI/ILRI	MoFA/UDS
1.1.9 Test management feeding, health and reproductive management strategies to promote ruminant and non-ruminant value chains through action research	1) Database on feeding and health management of ruminants and non-ruminants, 2) Improved husbandry practices for sheep and guinea fowl production tested on-farm	Ghana	NR, UER, UWR	Karbo/Fall	ARI/ILRI	UDS/KNUST/MoF A
1.1.10 Carry out participatory appraisals on production systems to document existing vegetable varieties, assess relative share of vegetables in production landscape, estimate relative prevalence and performance of intercropping options	Preliminary report on participatory appraisal of at least 10 farming communities on existing vegetable varieties, vegetable existing vegetable crop diversity, relative share of vegetables in production landscape and cropping patterns (mixed, sequential, sole) involving vegetables in target locations by September 2012	Ghana	NR, UER, UWR	Tenkouano/Rouam ba	UDS	AVRDC/SARI
1.1.11 Conduct diagnostic survey on opportunities and constraints related to collective action and governance of inland valley systems	1) Governance and institutional challenge indicators affecting the value chain identified at each site; 2)Study report ready by end of December, 2012; 3) Database of stakeholder perspectives about MSP process and utility developed for key sites; 4)Three Rice Sector Development Hubs and MSPs established by end	Ghana	UER, UWR, NR	Dogbe/GY Nachim (SARI) Ajayi/Cara Raboanarielina (AfricaRice)	SARI	AfriacRice

1.1.12 Establish and operate Rice Sector Development Hubs and MSP process at key sites, including assessment and backstopping	1) Three Rice Sector Development Hubs and MSPs established by end of June, 2012; 2)Two stakeholder meetings held by end of December, 2012	Ghana	UER, UWR, NR	Dogbe/GY Nachim (SARI) Ajayi/Cara Raboanarielina (AfricaRice)	AfricaRice	SARI
1. 1.13 Introduce, evaluate and promote high value vegetables to improve system productivity	1) Seeds of 8-10 available vegetable varieties transferred to SARI for bulking in Ghana by March 2012; 2)Seeds bulked and seedling nurseries of 8-10 available vegetable varieties established by SARI for testing in Ghana by August 2012; 3)Field establishment of 8-10 available improved vegetable varieties for broad adaptation trials in target sites commenced by September 2012	Ghana	NR, UER, UWR	Tenkouano/Rouamba	SARI	AVRDC/UDS
Output 2. Innovative harvest and post-harvest technologies and practices identified, evaluated and promoted (no activities planned during April-September)						
Outcome 2. Improved on-farm and off-farm natural resource management						
Output 2. 1. Improved nutrient cycling and water use efficiency						
2.1.1 Test new fertilizer formulations (biological and chemical) to correct nutrient imbalance and to optimize biological nitrogen fixation in test legumes	1) Field trials established by July 2012, 2) Database on responses of cereals and legumes to new fertilizer formulations	Ghana	NR, UER, UWR	Abaidoo/Larbi	KNUST	IITA/SARI/SAREM-CRSP
2.1.2 Measure response to bradyrhizobium inoculation in soybeans and cowpeas under field conditions	1) Field trials established by July 2012, 2) Database on responses of legumes to bradyrhizobioum inoculations by September	Ghana	NR, UER, UWR	Abaidoo/Larbi	KNUST	IITA/SARI/SRI/SAREM-CRSP
2.1.3 Evaluate the interaction of legume genotype x rhizobium x environment x management in responsive and non-responsive soils	1) Field trials established by July 2012, 2) Database on responses of legume genotypes to rhizobium inoculation in different environments	Ghana	NR, UER, UWR	Abaidoo/Larbi	KNUST	IITA/ICRISAT/SARI/SRI/SAREM-CRSP
2.1.4 Evaluate and promote good agricultural practices (GAP) for integrated soil fertility management (ISFM) options (Yield gap assessment and nutrient omision validated	1) Yield gap established; 2) Nutrient omission trials conducted	Ghana	UER, UWR, NR	Dogbe (SARI)/ Ajayi/Saito (AfricaRice)	SARI/AfricaRice	SANREM, IFDC

2.1.5 Evaluate and promote integrated soil fertility management options	1) Best soil fertility option identified and recommended to farmers for adoption; 2) Best soil conervation practice identified and scaled up and out to other farmers; 3) Most appropriate grain legume partner for maize identified for increased maize production and recommended to maize farmers in the region by September	Ghana	UER	Vara/Kanton	SARI	SANREM-CRPS
Output 2.2 Improved biomass production and enhanced carbon sequestration (no activities planned during April-September)						
Output 2.3 Enhanced option of land use management which would prevent on- and off-farm land degradation (no activities planned during April-September)						
Output 2.4 Approaches and technologies for improved water and land management and use identified and promoted						
2.4.1 Scale up and out proven small scale irrigation technologies for smallholder farming, including dry season irrigation for vegetable	1) Two participatory videos prepared by September; 2) Three area maps on small-scale irrigation developed by September	Ghana	NR, UER, UWR	Fred/Regassa/Obuobie	IWMI	WRI/KNUST
2.4.2 Assess water productivity potential of maize varieties and hybrids that are water-efficient and striga-resistant, and with low-nitrogen use	1) On-farm and on-station trials established by July 2012, 2) Database on water productivity of cereals in target areas	Ghana	NR, UER, UWR	Larbi/Apraku/Fred	IWMI	SARI/CRS/CRI/DTMA/IWMI
2.4.3 Conduct in-situ soil moisture measurement through different management regimes (e.g., contour banding and tied ridging) for water	1) On-farm and on-station trials established by July 2012, 2) Database on water productivity in target areas	Ghana	NR, UER, UWR	Fred	IWMI	SARI/DTMA/IWMI
Outcome 3. Reduced vulnerability of target population (esp. women and children) and farming systems to adverse environmental and economic						
Output 3.1. Biophysical, socio-economic and management options developed to reduce vulnerability (no activities planned during April-September)						
Output 3.2. Options for reducing vulnerability and mitigating risk scaled up and out within regions (no activities planned during April-September)						
Output 3.3. Input and output market access for male and female farmers expanded to increase household income (no activities planned during April-September)						

Outcome 4. Increased nutritional and economic levels of the target population (especially women and children)						
Output 4.1. Desk study of key nutritional and food safety issues of the target population						
4.1.1 Review on nutritional status, quantity and quality of foods consumed, macro (energy and protein) and micronutrient intakes (vitamin A, iron, zinc and folic acid); nutrient retention during processing, infectious	A report ready by September	Ghana	NR, UER, UWR	Maziya-Dixon	IITA	UDS/MoFA/MoH
4.1.2 Desk review of food saftey issues including aflotoxin, water quality used during processing, pecticide residues, chemical and physical contaminants, and microbiological pathogens	A report ready by September	Ghana	NR, UER, UWR	Maziya-Dixon	IITA	UDS/MoFA/MoH
Output 4.2. Capacity building and awareness campaign on nutrition issues for the target population (no activities planned during April-September)						
Output 4.3. Increased availability, utilization and consumption of highly nutritious foods (fruits, vegetables, legumes, meat and milk)						
4.3.1 Introduce and disseminate best-bet technologies and practices to improve milk processeing and consumption	Radio and audio-visual plat forms, training workshops, report submitted by August	Ghana	NR, UER, UWR	Karbo/Fall	ARI/ILRI	MoFA/MoH/KNUST/UDS
Output 4.4. Evidence based dietary strategies for target population developed, tested and communicated						
4.4.1 Study existing processors (individuals/groups) and needs assessment of cottage, small and medium scale processors of maize, sorghum soybean, groundnut and	Survey report by September	Ghana	NR, UER, UWR	Maziya-Dixon/Weltzien	IITA/ICRISAT	UDS/MoFA/MoH
4.4.2 Carry out participatory appraisals on diets to assess and document existing dietary diversity, assess relative share of vegetables in diets, and estimate nutritional performance of existing dietary options	Preliminary survey report on participatory appraisal of at laest 10 farming communities on traditional foods, food preparation practices and food preservation options; existing dietary diversity and relative share of vegetbles in diets in target locations by September	Ghana	NR, UER, UWR	Tenkouano/Endres	UDS	AVRDC/SARI
Output 4.5. Management strategies for reduced mycotoxin, pesticide, and contamination with hazardous materials upscaled in target areas (no activities planned during April-						
Output 4.6. Diversified rural enterprises for women established (vegetables, fruits, legumes animal products and preprocessed foods) (no activities planned during April-						

B. Mali

Activity	Measurable deliverables and milestones	Country	Target region	Lead Investigator (s)	Lead Institute (s)	Key Parners
Outcome 1: Sustainable increased of whole-farm productivity						
Output 1. Integrated crop and livestock production systems developed, evaluated, and effectively delivered to end users						
1.1.1 Diagnostic survey of organisational and institutional issues realted to land-use, management of natural resources, inlcuding forest,	Survey reports available for each zone, validated by local and other partners Survey report on land use and natural resource management in project sites.	Mali	Bougouni, Koutiala	Ayantunde/ Kalinganire/ Falconnier/Binam	ILRI/ICRAF/ICRISAT	AVRDC, ICRISAT, AMEDD
1.1.2 Validation of local landuse plans and supporting key interventions planned collectively	Reports on land use and natural resource management plans, policies and their validations available, including workplans for key partners	Mali	Bougouni	Fall, Traore, Djire, Binam	ILRI/ICRAF	ICRISAT, AVRDC
1.1.3 Information campaign on Integrated Striga and Soil fertility Management, using video (already available) and other visual aids	Showings of all ISSFM videos conducted and monitored in at least 5 villages in each zone before the growing season 2012.	Mali	Koutiala, Bougouni	Van Mourik	ICRISAT	AMEDD, MOBIOM, AMASSA
1.1.4 Diversify seed enteprise options for of seed or tree nursery cooperatives and their unions (cereals, vegetables, fodder crops, varieties within each species) and tree nurseries (trees, shrubs)	a. Training programs of seed enterprises conducted on sorghum hybrid seed production, diversity of sorghum varieties, as well as training on farmer managed variety test kits for evaluating varieties of other priority crops. b. Training programs for tree nursery development. c. Breeders seed, and seed for farmer experimentation produced	Mali	Koutiala, Bougouni	Weltzien, Kalinganire	ICRISAT/ICRAF	AMEED, MOBIOM, AMASSA
1.1.5 Quantify biomass productivity (largely in on-going) farmer-managed experiments, quantifying gxe interactions (soil fertility, crop density, intercropping)	Protocol for biomass assessments finalized with partners	Mali	Koutiala, Bougouni	Falconnier/ Rattunde	ICRISAT/ICRAF	ICRAF, SANREM CRSP, AVRDC
1.1.6 Quantify total biomass in selected farms and possiby surrounding areas,	Protocol established for assessing tree, pasture and other biomass production at appropriate scales	Mali	Koutiala, Bougouni	Falconnier, P.S. Tarore, Bayala	ICRISAT/ICRAF	AMEDD, MOBIOM
1.1.7 Test fodder crops, tree crops and varieties in cereal based cropping systems for improved fodder	Protocoles for testing priority species and varieties etablished among partners	Mali	Koutiala, Bougouni	Fall/Alhassan Ba	ILRI	MOBIOM, ICRISAT, ICRAF
1.1.8 Create Innovation platforms for action research on ruminant value chains/dairy and fattening	Initiation meetings held, and plans of action established.	Mali	Koutiala, Bougouni	Fall	ILRI	

1.1.9 Carry out participatory appraisal on production systems to document existing vegetable varieties, assess relative share of egetables in production landscape, estimate relative prevalence and performance of	Preliminary report on participatory appraisal of at least 10 farming communities on existing vegetable varieties, existing vegetable crop diversity, relative share of vegetables in production landscape and cropping patterns (mixed, sequential, sole) involving vegetables in target	Mali	Koutiala, Bougouni	Tenkouano/Rouamba	AVRDC/ICRISAT/ILRI/ICRAF	AMEDD, MOBIOM
1.1.10 Introduce, evaluate and promote high value vegetables to improve system productivity	1)Seeds bulked and seedling nurseries of 8-10 available vegetable varieties established by at least 5 partner farmer cooperatives by August; 2)Field establishment of 8-10 available improved vegetable varieties for broad adaptation trials in at least 10 target sites commenced by September	Mali	Koutiala, Bougouni	Tenkouano/Rouamba/Kalinganire	AVRDC/ICRAF	AMEDD, MOBIOM
Output 2. Innovative harvest and post-harvest technologies and practices identified, evaluated and promoted (no activities planned during April-September)						
Outcome 2. Improved on- and off-farm natural resource management						
Output 2.1. Improved nutrient cycling and water use efficiency						
2.1.1 Integrate participatory breeding activities for sorghum and millet with local cattle breeder network.	Workplans, and protocoles for collaborative experimentation negotiated between partners, and experiments established, after appropriate	Mali	Bougouni, Koutiala	Weltzien	ICRISAT/ILRI	MOBIOM
Output 2.2. Improved biomass production and enhanced carbon sequestration (no activities planned during April-September)						
Output 2.3. Enhanced option of land use management which would prevent on- and off-farm land degradation (no activities planned during April-September)						
Output 2.4. Approaches and technologies for improved water and land management and use identified and promoted (no activities planned during April-September)						
Outcome 3. Reduced vulnerability of target population (esp. women and children) and farming systems to adverse environmental and economic						
Output 3.1. Biophysical, socio-economic and management options developed to reduce vulnerability (no activities planned during April-September)						
Output 3.2. Options for reducing vulnerability and mitigating risk scaled up and out within regions (no activities planned during April-September)						
Output 3.3. Input and output market access for male and female farmers expanded to increase household income						
3.3.1 Initiate the establishment of rural resource centers, focusing on options for sustainable intensification and income generation for women, youth and other resource-poor farmers.	Villages identified for hosting resource centers; process launched for their establishment	Mali	Koutiala	Kalinganire/Binam/Weltzien	ICRAF/ICRISAT	AMEDD

Outcome 4. Increased nutritional and economic levels of the target population, especially women and children						
Output 4.1. Desk study of key nutritional and food safety issues of the target population						
4.1.1 Desk review on nutritional status, quantity and quality of foods consumed, macro (energy and protein) and micronutrient intakes (vitamin A, iron, zinc and folic acid); nutrient retention during processing, infectious diseases and other factors affecting	Report made avialble to partners for review	Mali	Koutiala, Bougouni	Lugutuah	ICRISAT	AMEDD, MSF, MOBIOM
4.1.2 Desk review of food saftey issues including aflotoxin, water quality used during processing, pecticide residues, chemical and physical contaminants, and microbiological pathogens	Report made available for review	Mali	Koutiala, Bougouni	Waliyar	ICRISAT/Peanut CRSP	AMEED, MSF, MOBIOM
Output 4.2. Capacity building and awareness campaign on nutrition issues for the target population						
4.2.1 Develop and test options for introducing communication tools for preventing child malnutrition, into community health care system	Communication tools assembled and evaluated locally	Mali	Koutiala	Sanogo/Lugutuah	MSF/ICRISAT/AMEDD	HKI
Output 4.3. Increased availability, utilization and consumption of highly nutritious foods (fruits, vegetables, legumes, meat and milk)						
Output 4.4. Evidence based dietary strategies for target population developed, tested and communicated						
4.4.1 Carry out participatory apparaisal on diets to assess and document existing dietary diversity, assess relative share ofvegetables in diets, and estimate nutritional performance of	Preliminary report on participatory appraisal of at least 10 farming communities on traditional foods, food preparation practices and food preservation options; existing dietary diversity and relative share of vegetables in diets in target locations in	Mali	Koutiala, Bougouni	Tenkouano/Endres	AVRDC/ICRISAT	AMEDD, MOBIOM
Output 4.5. Management strategies for reduced mycotoxin, pesticide, and contamination with hazardous materials upscaled in target areas (no activities planned during April-						
Output 4.6. Diversified rural enterprises for women established (vegetables, fruits, legumes animal products and preprocessed foods) (no activities planned during April-						

C. Cross-cutting activities

	Measurable deliverables		**Target region**	**Lead**	**Lead**	**Key**
Activity		**Country**	**Region**	**Investigator (s)**	**Institute (s)**	**Parners**
Outcome 5. Effective management and linkages						
Output 5.1. Research framework completed						
5.1.1 Analyze different research models to identify a generic model that can be used across the region	Task force established by April to analyze research models	Ghana/Mali	NR, UER, UWR Koutiala, Bongouni	Glover	IITA/ICRISAT/IFPRI/ILRI	SANREM-CRSP/ICRISAT/ N2-Africa
5.1.2 Design and review scientifically rigorous research plan	1)Draft research plan circulated and discussed with key partners by May; 2) Research plan approved by end July	Ghana/Mali	NR, UER, UWR Koutiala, Bongouni	Glover	IITA/ILRI/ICRISAT/ AfricaRice/IFPRI	SARI/ARI/CRS
Output 5.2. Functional partnerships, effective project management						
5.2.1 Identify research and development partners and build multi-stakeholder partnerships	1) Launching workshop organized by January; 2) Stakeholders' workshop organized by March; 3) Joint activities initiated by May	Ghana/Mali	NR, UER, UWR Koutiala, Bongouni	Larbi/Kamara/Fall/ Kalinganire/Weltzien/Dogbe	IITA/ICRISAT/AfR	SARI/ARI/IER/MoFA
5.2.2 Identify project sites and communities	1) Tentative project sites identified at launching workshop organized by January; 2) Project sites and communities finalized end of April	Ghana/Mali	NR, UER, UWR Koutiala, Bongouni	Wood/Larbi/Weltzien	IFPRI/IITA/ICRISAT	SARI, ARI, MoFA
5.2.3 Set-up project office at Tamale, recruit staff, develop, allocate and monitor budget	1) MOU signed with SARI by March; 2) SARI staff seconded to project by April; 3) Project staff moved to offices in SARI by April; 4) Office equipment purchased by May; 5) Technical and administrative staff recruited as required			Hoeschle-Zeledon/Larbi/Issac	IITA	
5.2.4 Constitute steering committee; develop concept note, workplans and communication strategy	1) Concept note and 2012 workplans finalized by April; 2) Communication strategy developed by July; 3) Sub-contracts with partners made and funds disbursed as required			Hoeschle-Zeledon/Larbi/Kamara/Gyamfi/Weltzien	IITA	IITA/ICRISAT/AfricaRice
5.2.5 Organize end of year implementers and stakeholder meeting	1) Meeting with project implementers held in September to evaluate year1 and plan year2; 2) Meeting with wider stakeholder group from Ghana and Mali held in continuation	Ghana		Hoeschle-Zeledon/Gyamfi/Larbi	IITA	IITA/ICRISAT/AfricaRice

5.2.6 Liaise and communicate with USAID, IFPRI, ILRI and other major partners	1) Regular telephone contact with USAID about status of project; 2) regular visits paid to USAID missions and invitations extended to attend project meetings; 3) regular update of project partners using adequate means of communictaion; 4) project communication strategy implemented			Hoeschle-Zeledon		IITA/ICRISAT/AfricaRice
Output 5.3. Strengthened capacity of partners						
5.3.1 Organize a course on integrated crop-livestock production for research and extension staff	1) Course organized for at least 6 research and extension officers by August; 2) Preliminary report ready by September	Ghana	NR, UER, UWR	Karbo/Fall/Larbi	ILRI/ARI	IITA/SARI/ARI/MoFA/UDS
5.3.2 Organize a short-course on experimental design and data analyses for research staff	1) Course organized for at least 10 research and extension officers by August; 2) Preliminary report ready by September	Ghana	NR, UER, UWR	Nokoe/Mahmadu/Larbi	WUC/IITA	SARI/CRI/UDS/UG
5.3.3 Training on best-practice irrigation techniques	1) Course organized for at least 6 research and extension officers by August; 2) Preliminary report ready by September, 3) Training manual on best-practice irrigation techniques	Ghana	NR, UER, UWR	Fred/Regassa/Obuobie	IWMI	WRI/KNUST
5.3.4 Educate and train of households on the processing and utilization of cereals/legumes to enhance nutrition and income levels	Two training workshops, 2-3 demonstrations at the community level, and radio and audio-visual platforms organized by September.	Ghana	NR, UER, UWR	Gladys	UDS	MoFA-WAID, MoH, ICRISAT
5.3.5 Train food processors, handlers and marketers on food safety issues including information, education and communication on food safety at the community level.	Two training workshops, 2-3 demonstrations at the community level, and radio and audio-visual platforms organized by September.	Ghana	NR, UER, UWR	Gladys	UDS	MoFA-WAID, MoH, ICRISAT
5.3.6 Train facilitators and technical staff of partners organizations for farmer managed trial implementation, and use of farmer to farmer videos for Striga control	Two training workshops held, and follow-up support to partners in two projetc areas	Mali	Koutiala, Bougouni	Weltzien, van Mourik	ICRISAT	URTEL, MOBIOM, AMEDD, AMASSA