CGIAR

RESEARCH PROGRAM ON
Dryland Systems

West African Sahel and Dry Savannas Flagship

2015 Plan of Work and Budget

Revised: June 2015

Food security and better livelihoods for rural dryland communities

Table of Contents

Table 1. West African Sahel and Dry Savannas Flagship – IDOs

Level	Level of organization within the CRP	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Planned Budget ($ 000s)
1	West Africa Sahel and Dry Savannas	**Agro-pastoral system interventions** (testing, piloting and scaling up): W1&2: Kano-Katsina-Maradi Transect (Nigeria and Niger); W3/Bil: Burkina Faso Mali, Niger **Rainfed System interventions** (testing, piloting and scaling up): W1&2:Wa-Bobo-Sikasso Transect (Ghana, Burkina Faso, and Mali); W3/Bil: Niger, Nigeria, Mali, Mauritania **Irrigated Crops System interventions** (testing, piloting and scaling up): W3/Bil: Niger, Nigeria, Mali, Mauritania **Collaboration with other CRPs:** CCAFS (policy linkages/climate smart technologies) DC (dual-purpose cereals) RTB (market diversification) WLE (integrated watershed management/ecosystem services/biomass production)	**Progress towards CRP IDOs and indicators of progress** IDO1 • Tree density reduction rates decreased by 20% in participating farms at field sites (2017) • 10 % increase in vegetable and tree products for target food-insecure households. (2017) IDO2 • 20% of women acquired knowledge through participatory evaluation of dual-purpose crops. (2017) • 50% increase in income of women through adoption of least cost feed rations for sheep fattening. (2017) • 5% of households (low income HH: 10%) increased their income at field sites. (2017) IDO3 • At least one women association trained in tree propagation techniques (2016) 10% of households improved their dietary scores at field sites. (2017) IDO4 • Skill of at least 20% of farmers at the action site is increased in innovative agro-forestry techniques. (2017) • 10% increase in water productivity of crops and livestock at participating farms in field sites (2017) • 10% increase in agricultural biodiversity maintained by participating farms at field sites (2017) • 10% increase in livestock performance at participating farms in field sites (2017)	8,398.856

			ID05 • 10% improvement in the sex ratio and age ratio of farmers adopting approaches promoted. (2017) ID06 • 120 progressive farmers and stakeholders trained on systems innovation and community based seed production for improved seed delivery. (2016) • At least 2 CBOs or boundary partners have adopted innovative organization approaches at each field site. (2017)	

Table 2. West African Sahel and Dry Savannas - Cluster of Activities

Please note:

- Blue indicates capacity development activities
- Orange indicates gender-targeted activities

Level	Level of organization within the CRP	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Planned Budget ($ 000s)
1.1	Research Support	Local Partners meetings, research site coordination, support to cross-cutting issues and to W3/Bilateral projects **Partnership**: **CRP-DS CG Centres:** ICRAF, ICRISAT, ILRI, ICARDA, Bioversity **NGOs/CBOs**: 6 **NARS**: 5 **Private Sector:** 1 **Government Department**: 1 **Academia**: 2 **International Centers (NoCG):** 1 **CG Scientists:** 17	Organization of two IRT meetings (Burkina Faso and Mali) Flagship representation to the 2 RMC and annual S&IM Communication and dissemination of flagship product Data and information management for the flagship Flagship data analysis and system research design and modelling	243.000
1.2	System Research: Agro-pastoral system interventions (testing, piloting and scaling up)	**Location:** **W1&2**: Kano-Katsina-Maradi Transect (Nigeria and Niger); **W3/Bil:** Burkina Faso Mali, Niger **General objective:** To improve the multi-product productivity, stability and gender equity of agro-pastoral systems in West African Sahel by enhancing subsidiary linkages between annual crops, trees and livestock as well as	**Outputs in 6 months:** **(ICRAF-1)** PRA conducted (report); Surveys on 220 farms conducted (report); 1 progress report on crowdsourcing local knowledge about tree integration at field, farm and landscape scales; **(ICRISAT-2)** 1 progress report on gender preference on local dual purpose crops and progress on field trials; **(ICRAF-4)** Adaptive properties to drought of a priority indigenous fruit tree investigated (report); Training provided to at least 150 farmers (men and women) on tree domestication and propagation techniques (report); **(Bioversity-5)** Survey report on local management of tree, crop and animal breeds; **(Bioversity-6)** Survey report on locally produced nutritious foods and imported foods; **(ICRISAT-7)** Tree crop management demonstration protocols developed and installation achieved; Report on demonstration	5,605.953

Level	Level of organization within the CRP	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Planned Budget ($ 000s)
		promoting the use of indigenous knowledge and resources. **Specific objectives:** To characterize and understand roles of local knowledge and female and male farmers' practice about integration of tree on farms and landscapes in contributing to semi-arid agricultural systems' productivity and stability; To assess factors influencing farmers' decisions to grow multi-purpose trees (MPTs) and extent to which MPTs provide the functions and characteristics desired by farmers (gender differentiated); To test and evaluate least cost feed rations based on locally available feed resources for improved livestock productivity (sheep fattening) and efficient livestock-mediated nutrient transfer; To improve integrated domestication and commercialization of indigenous fruit and nut tree crops (IFTs) for food security and income generation at the action site and beyond involving female and male stakeholders; To identify and promote nutrition rich local foods; To identify optimal combinations of crop-tree-livestock management options, yet and feasibly and relevantly, resulting in improved multi-product productivity of agro-pastoral systems; Assess the effects of intensification on local agro-biodiversity in areas with	installation produced; **(ICARDA-8)** Innovative platform model for promotion of improved and integrated technology transfer, seed delivery and stakeholders linkage along the value chain involving 540 men and women active in farming established and operationalized in 3 IP sites (Kadawa, Alkamawa, Bagwai) of Kano; 3 functional community based seed multiplication scheme established, each involving 50-60 trained farmers for supply of high quality wheat seed across the 3 IP sites; **Outputs in 12 months:** **(ICRAF–1)** 3 feed-back workshops in all sites where PRA organized (report); 1 full report on Factors Influencing Farmers' Decisions to Grow MPTs and practice FMNR produced; 1 draft manuscript; 3 media products on FMNR and MPTs developed (Popular newspaper, blog and video); **(ICRISAT–2)** 1 complete report on gender preference on crops along with evidence from laboratories for food-fodder trait analysis; Gender preferred local dual purpose crops seeds (Pearl Millet, Sorghum, Cowpea and Groundnut) for gene bank collected from 2 villages' farmers (Milli and Gourjia) and used for wider multiplication and fodder quality analysis (report); **(ILRI-3)** 1 full report on on-farm fattening experiments; Practical guidelines for livestock extension workers on least cost ration for sheep fattening (guidelines); **(ICRAF-4)** At least one women association trained in tree propagation techniques in Niger (report); 1 draft report on provenance variation in seed- and seedling-related traits in survival, growth and dry matter partitioning of Sclerocarya birrea, a potential agroforestry species, in response to water stress; 1 drraft manuscript on Tree domestication/ Income Generating Grafted Fruit Trees; **(Bioversity-5)** 1 report on options for improved management of tree, crop and animal breeds; 2 Technical Advisory Notes on better tree, crop and animal breeds management practices, for extension workers and farmers; **(Bioversity-6)** 1 report on recommended nutritious foods that are locally available across the year to improve diets; 1 Factsheets on nutritious local foods and their utilization; **(ICRISAT-7)** At least 1 optimal combination of crop variety and options of soil fertility management for optimal yield and efficient water use in parklands system identified in participatory trials with 180 men and women farmers (report); 1 video on precision agriculture developed; **(ICARDA-8)** 120 progressive farmers and stakeholders trained (gender disaggregated CD of women and youth) on system innovations and community based seed production for improved seed delivery and technology transfer to local circumstances (report);	

Level	Level of organization within the CRP	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Planned Budget ($ 000s)
		intensification potentials and the roles of different stakeholders bringing about this effect; To strengthen female and male farmers' capacity in integrated management of tree (e.g. farmer-managed natural generation (FMNR) and MPTs), crop and livestock components in agro-pastoral system; To establish innovative platforms in a multi-stakeholders setting for promoting the out-and up-scaling of locally succeeded diversification/intensification options; **Methods:** Narrative-based system analysis of agricultural livelihood systems (including social-cultural (gender and youth) dimensions); Participatory Rural Appraisals (PRA) for domestication and commercialization analyses; Household-farm surveys (gender and age disaggregated); Gender analysis of systems targeted by research in 2015 (focus on transaction analysis); Participatory development of partnership models for technological transfers; Operational system modeling (TBD) **Gender dimension:** Understand gender preferred local dual purpose crops in mixed farming systems using field trials;	**Outputs in 12 months (W3/Bil):** **(ICRAF–1)** 1 project inception report for expected results in 2015–2016; 3 characterization study reports for the project intervention sites; At least 1 report describing options for improved land and water management; At least 1 report describing implementation of land and water management activities; At least 1 report on the integrative approach taken by the project and its implementation; 1 report describing the ME&IA framework of the project; Training of farmers in techniques to enhance food production through better management of soils as well as community mobilization and other integrative approaches with Inclusive approach to promote participation of different categories of farmers - male and female (at least 50%) and youth (report); **(ICRAF-2)** Capacity development interventions to disseminate the findings of the project towards beneficiaries; Information collected and disaggregated by gender (dataset); **(ICRAF - 3)** New and/or strengthened village-based extension approaches implemented for increased/wider use of context-specific climate-smart tree-crops systems and agroforestry practices (2015); Improved agroforestry seeds and seedlings (incl. vegetatively propagated plantlets) produced, distributed and commercialized (report); Tree seed and seedling systems sustainably managed with 512 lead producers (2015); Diversified market opportunities created for a range of high-quality tree products value chains with high market potential (including organizing agroforestry nursery groups of 30 members in each project site, training of trainers on commercialization techniques; Improved management of wild and domesticated fruit trees with specific aim of providing nutrients during the famine periods conservation methods for highly nutritional tree products (incl. leafy vegetables) for human and livestock transferred to 3,675 individuals (50% women) including indirect beneficiaries) (report) (2015); Demand-driven short-term training courses (1 per project site) targeting support institutions (including extension services and local NGOs), national students internships, and key value chain actors (including women and youth, and training-of-trainers sections) in developing and disseminating agroforestry technologies and practices, as well as their health/nutritional values, and income generating activities through multi-stakeholders Innovation Platforms (report); **(ICRAF - 4)** Tree-crop interactions evaluated and reported on-farm using different tree (accessions and) species and cereal varieties (2015); 1 new agroforestry technology/practice aiming at improving biomass production evaluated (2015); At least 75 farmers (30% women	

Level	Level of organization within the CRP	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Planned Budget ($ 000s)
			and youth: gender, social stratification, education, age, wealth, ethnicity will be considered for selecting the participants) and 1 student per country will benefit from training activities: learning by doing during and formal training sessions (2015); **(ICRISAT-7)** 5,176 men and 4,394 women received training in global climate change adaptation (report); 2,667 hectares under improved techniques or technologies (report); **Outcomes:** **(ICRAF-1)** Skills and knowledge of least 150 farmers (50% female), strengthened through practical farmer to farmer training and learning sessions on MPTs and FMNR (report); **(ICRISAT-2)** 200 women acquired knowledge through participatory evaluation of dual purpose crops (report); **(ILRI-3)** At least 100 farmers' skills enhanced in profitable sheep fattening and 50% increase in income (about 100 USD per HHs) of women participating in the sheep fattening scheme (report); **(ICRAF-4)** At least 150 farmers' skills (50% women) enhanced in use of tree domestication and propagation techniques (report); (**Bioversity-5)** 18 HHs applied better tree, crop and animal breeds management practices and 5% increased income from local crops (millet, tiger nut, leafy vegetables, etc) and small ruminants for marginal groups (women, elderly people) (report); **(Bioversity-6)** 18 HHs use improved combinations of locally available foods, changes in nutritional state of mothers and children and 5% increased demand for locally produced foods (report); **(ICRISAT-7)** At least 20 farmers increased their knowledge in use of improved combination of crop varieties and soil fertility management (report); HHs income increased by 15% through farm product sale of participating farmers (report); **(ICARDA-8)** Innovative partnership models for improved seed delivery, technology transfer and market linkage fully adopted by farmers and stakeholders within the three IP sites (report); **Outcomes (W3/Bil):** **(ICRAF -3)** Local communities participate (through 1 survey and 1 focus group discussions per project site) in co-design and co-implement village-based extension approaches to scale-up and out of proven agroforestry technologies (2015); 525 Farmers developed diversified market opportunities for tree products with high nutritional and economic value (2015); Rural communities (3,150 individuals) consume more of tree-based nutritious tree products and have improved their food and nutritional security status (2015); Farmers (3,150	

Level	Level of organization within the CRP	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Planned Budget ($ 000s)
			individuals) are more resilient to climate change extremes and disasters (2015); Capacity of key stakeholders (600 individuals) in rural poor communities strengthened and their participation in agroforestry tree product value chains improved (report) (2015); **(ICRAF - 4)** 150 farmers of the two countries are using improved crop/livestock/tree management practices to increase their millet and sorghum farming productivity and to improve their livelihoods (report); 150 smallholder farmers of the two countries are using market information systems, financial services and value addition opportunities to increase income from whole farm production (report); **(ICRISAT-7)** 205,229 men and 266,566 women increased knowledge of climate change impacts and response options (report); 9.128 men and 9,344 women implementing risk-reducing practices/actions to improve resilience to climate change (2015); 150,909 men and 212,476 women use climate information in their decision making (2015); 66 institutions with improved capacity to address climate change adaptation (report);	
1.3	System Research: Rainfed System interventions (testing, piloting and scaling up)	**Location:** **W1&2:**Wa-Bobo-Sikasso Transect (Ghana, Burkina Faso, and Mali); **W3/Bil:** Niger, Nigeria, Mali, Mauritania **General objective:** To improve food productivity, benefit sharing equity (including gender and youth aspect) of WASDS intensive rain-fed systems whilst minimize agriculture-induced land degradation and climate-driven vulnerability **Specific objectives:** To identify household-preferred, gender-relevant multi-purpose trees (MPTs) (multi-purposes: improved nutrition, livestock feed, minimized or reversed land degradation); To assess in a gender-sensitive manner factors influencing farmers' decisions () to grow MPTs and extent to which MPTs provide	**Outputs in 6 months:** **(ICRISAT-1)** Establishment of one biophysical monitoring network across CRB-equipped/control field pairs sampling 3 catena positions, 3 household types and 4 crop types in Kani site (report); Initial crop model parameterization for local agronomic practices, germplasm and CRB effect on soil water dynamics (report); Initial TOA-MD model parameterization based on HH survey data, and ex-ante simulation of CRB adoption (report); Initial report on perceived bottlenecks to CRB adoption (biophysical, economic, customary, etc.); **(Bioversity-2)** Multi-purpose tree diversity and distribution assessment (report); **(ICRISAT-3)** Field visits to identify participating farmers (report); 2 composting training videos screening events and demos organized at Yagtuuri site in Ghana and Mahon site in Burkina Faso, directly reaching at least 200 farmers and collecting their feedback (report); Dissemination of technical sheet in best soil conservation technology at each site (Technical Sheets and Report); **(ICRAF-4)** PRA conducted at WBS Yagtuuri field site (report); Survey administered on 200 farms across the WBS transect (report); Progress report on local knowledge about tree integration at field, farm and landscape scales; **(ICRISAT-5)** First yield results from dual-purpose crops trials in 2014 (report); Set up of 2015 feeding trials (with stover harvested from farmers in 2014); Demonstrations of fodder chopper at Yagtuuri site (report); **(ILRI-6)** Analysis of existing local conventions governing natural resource management (report); **(ICRISAT-7)** Technologies and practices promoted are ranked by smallholder community representatives involved in 2 district-level Transformative Scenario	1,700.599

Level	Level of organization within the CRP	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Planned Budget ($ 000s)
		the functions and characteristics desired by farmers (also gender-sensitive); Explore the use of dual-purpose crops and post harvest mechanization for intensified stover and crop residue production; To map land holdings with clarified holders (gender-disaggregated) over diverse agricultural landscape mosaics smallholders; Analyze and document existing local, gender-relevant conventions governing NR management in mixed crop-livestock systems and identify interventions to strengthen them; Jump-start orange-fleshed sweet potato in West Africa through diversified markets to improve nutritional status; To assess ecological (soil/water conservation) and gender-relevant socio-economical (income and food security) tradeoffs and synergies driven by different technological options (among intensification and diversification options (CRB and other soil, crop, tree management practices), governance and market alternatives with respect to farm productivity, profitability, natural resources and social equity (including gender and youth aspects); To promote the dissemination of least-regret local and exogenous land restoration (e.g. most suitable Farmer Managed Natural Restoration (FMNR) techniques and processes from hotspots of practice to new, degraded frontier areas) through providing appropriate training on land	Planning (TSP) processes initiated at Lawra and Koutiala and other preferred technologies and practices are identified by TSP stakeholders (Report); **(ICRAF-8)** Updated report on analysis of HH survey highlighting the characteristics of the agricultural systems including Burkina Faso sites; **Outputs in 12 months:** **(ICRISAT-1)** Community-level stock-taking activity on outputs from in-vivo and in-silico CRB experiments (report); Final crop model outputs highlighting performance of CRB (sole, bundled with other practice) across space, time and HH endowments (report); Final trade-offs analysis results showing socially differentiated opportunity costs for CRB (sole, bundled) adoption (report); CRB (sole, bundled) business model development workshop organized for NGOs and local private sector (report); Evidence from simulated and real-world CRB experiments is disseminated to national stakeholders by at least 3 district-level platforms and 1 parliamentary event (report); Peanut, as a women's crop, is involved in the set of 4 crops investigated for response to CRB and bundled practices (report); **(Bioversity-2)** Compendium of locally recommended multi-purpose trees species for food, feed and medicine; Technical advisory notes on better management practices of multipurpose trees are disseminated directly to extension workers and will benefit farmers (report); 100 HHs are aware of the role of multi-purpose trees to improve nutritional quality of food and feed (report); **(ICRISAT-3)** Yearly report providing all data related to soil physico-chemical properties, water dynamics, farmers compost quantities and quality and crop performance; Composting training videos customized to fit local preferences/conditions at two field sites; At least 50 participants (young and women) are trained on soil restoration techniques (report); Report on women and young farmers involvement in composting activities and provide new insights on the production process, and use (particularly for high-value, garden cropping); **(ICRAF-4)** 2 feed-back workshops in all sites where PRA was organized (report); A full report on factors influencing farmers' decisions to practice FMNR; FMNR introduced in 2 communities (Yagturi and Zinkaa) with PRA and two community workshops on FMNR and needs assessment (report); Learning visit organized for 20 community members to Kanpour in Lawra district, and 6 members to Talensi-Nabdam in UER on FMNR in partnership with World Vision (report); Annual report, peer reviewed publications & data collected archived & publicly available in open access to 300 beneficiaries (report and dataset); 3 dissemination products on FMNR developed (1 popular newspaper, 1 policy brief	

Level	Level of organization within the CRP	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Planned Budget ($ 000s)
		restoration techniques and management involving both genders and youth; To promote the current regional science-policy platforms to catalyze systems change towards sustainable intensification and reduced vulnerability; **Methods:** Participatory Appraisal Research (PAR) method: Participatory development of expected future-actions matrixes for different purposes; High-resolution remote sensing and GIS analysis for accurate land tenure mapping; Participatory Rural Appraisals (PRA) for domestication and commercialization analyses; Household-farm surveys (gender and age disaggregated); Gender analysis of systems targeted by research in 2015 (focus on transaction analysis); Empirical (ex-post) statistical analysis, including social, cultural, economic factors (6) Whole farm bio-economic modelling and landscape-level multi-agent system modelling (TBD); Participatory development of partnership models for technological transfers; Gendered baseline and impact studies **Gender dimension:** Gender is mainstreamed in the above research ensuring the equitable participation of women, youth and disadvantaged groups additionally to	and 1video); At least 150 farmers are trained on FMNR (report); **(ICRISAT-5)** First results from the 2015 feeding trial (report); 2015 mother-baby trials on improved dual-purpose crops (peanut, sorghum, sweet potato) conducted by farmers (report); At least 2 trainings involving 40 participants on crop-livestock integration and crop residues management conducted (report); **(ILRI-6)** Draft manuscript on participation in decentralized management of natural resources; 2 trainings involving about 50 participants on conflict management over natural resource use conducted (report); One report on women's role in elaboration and implementation processes of local conventions; **(ICRISAT-7)** Preliminary results and learnings from the TSP process are published in a joint CCAFS-DS working paper to guide future WBS transect developments, scale up (tune down) of higher (lower) priority activities at the community level; At least one training event is organized for stakeholders by the district-level platform to learn about the content of one national agricultural policy instrument (report); **(ICRAF-8)** Full analytical report completed and aggregated for the 5 WAS&DS countries; At least 250 farmers and their households participate in the HH survey and inform on relevant constraints and opportunities on resource endowment, land productivity, HH income, vulnerability and copping strategies (report); Indicators for ex ante and ex post impact disaggregated by gender and the contribution of the different technologies quantified by different household member categories (report); **Outputs in 12 months (W3/Bil):** **(ICRISAT-5)** Multispectral imagery acquired over at least 200,000 ha, analyzed and shared with partners (images); at least 40 stakeholders trained in the use of VHR imagery for agricultural smallholder decision support (2015); at least 100 farmers are actively contributing to the development of imagery-based agricultural management support services (2015); **(ICRISAT-6)** Institutes i who are drivers of change in the project sites identified (2015); Options to improve off-farm and on-farm land, soil and water resources management and use identified considering both men and women and disadvantaged groups in research and technology evaluation, considering their different preferences and knowledge (2015); **(ICRISAT-7)** 1,294 men and 1,098 women received training in global climate change adaptation (report); 667 hectares under improved techniques or technologies (report); **(ICARDA-21)** Wheat Value Chain analysed in Nigeria; 1 CA package developed; 1 Crop-Rotation Package developed; 4,500 farmers and stakeholders (at least 30% women) (progressive farmers, extension agents local	

Level	Level of organization within the CRP	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Planned Budget ($ 000s)
		men in research, technology and evaluation, and knowledge creation; aiming at economic empowerment.	input providers and NGOs) involved in technology promotion and capacity development (Farmers Field Schools: pre-season, in-season and post-season);; 4 Innovation Platforms for Nigeria, Mali, Mauritania, Niger established and operationalized (2015). Wheat Seed System analyzed, developed and institutionalized in Nigeria (2015); **Outcomes:** **(ICRISAT-1)** At least 36 farming HHs provide actively involved and provide guidance in the performance evaluation of CRB (sole or bundled) and for addressing bottlenecks towards CRB (sole or bundled) adoption and dissemination (report); At least 10 private sector actors, NGOs and CSOs develop skills related to CRB business models (report); At least 1 private sector partner, NGO or CSO engages farmers to commit resources towards 2016 CRB setup (report); At least 5,000 men and female farmers are exposed to, and learn from the results of the simulated and real-world experiments through their respective FOs (report); **(Bioversity-2)** 100 marginalized smallholder farming HHs have access to additional sources of nutritious food and feed for better livelihood (report); **(ICRISAT-3)** At least 20 farmers implementing the technology at each DSCRP field site of WBS, with 20% yield increase (report); Communities aware of benefits of composting have provided guidance on how to deploy technology on a larger scale (report); Stakeholders involved in production of training videos (e.g. Access Agriculture) have integrated learnings and products in their video portfolio, for further dissemination (report); **(ICRAF-4)** Capacity of 150 (50% women), including poor rural communities organizations is strengthened through collective actions, practical farmer to farmer training and learning processes on FMNR (report); **(ICRISAT-5)** Local communities and individual farmers work with improved crop for dual purpose (peanut, sorghum, sweet potato) and intend to use the stover for their livestock (report); **(ILRI-6)** Oral local conventions in one community formalized and validated (report); **(ICRISAT-7)** District-level science-policy platforms initially focused on climate change adaptation now start influencing national policy design in the larger context of agricultural intensification and vulnerability reduction (report); Stakeholders and Scale actors collaborate to visualize coordinated pathways for agricultural intensification across the entire transect (report); Stakeholders' understanding of national agricultural policy instruments (and their strengths and weaknesses) has improved (report); Stakeholders are engaging the district-level science-policy platforms to advocate for policy instruments that favour	

Level	Level of organization within the CRP	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Planned Budget ($ 000s)
			their priorities and interests (report); Women and youth groups are communicating their priorities to policy makers via their involvement with the district-level platforms (report); **(ICRAF-8)** at least 400 farmers (200 men and 200 women) are aware on the role and importance of gender in extension systems and the women decision power over agricultural (and non-agricultural) labour are assessed (report); **Outcomes (W3/Bil):** **(ICRISAT-5)** 50,000 farmers (20% women) registered in a land tenure information service receive benefit from this tool (2015); **ICRISAT-7)** 51,307 men 66,641 women increased knowledge of climate change impacts and response options (2015); 2,282 men 2,336 women implement risk-reducing practices/actions to improve resilience to climate change (2015); 37,727 men and 53,319 women use climate information in their decision making (2015); 66 institutions with improved capacity to address climate change adaptation (2015); **(ICARDA-21)** 100% of target farmers adopt the wheat based technologies on 33,000 ha (2015); Project wheat based technologies promoted by target beneficiaries to 70,000 indirect beneficiaries in 2015;	
1.4	System Research: Irrigated crop System interventions (testing, piloting and scaling up)	**Location:** **W3/Bil:** Niger, Nigeria, Mali, Mauritania **General objective:** To achieve sustainable increase of wheat productivity and production for enhanced food security, economic growth and poverty alleviation. **Specific objectives:** To increase on-farm wheat productivity and production for food security; To optimize the management of scarce natural resources; To enhance the capacity of the NARES to conduct needed research for development **Methods:**	**Outputs in 12 months (W3/Bil):** **(ICARDA-21)** Integrated Pest and Crop Management (IPCM) package (2015); Short in country training (13 participants in each country - at least 30% women) on wheat production package for researchers and extensions (2015); 6 similarity maps at country, countries and continental level, developed; **Outcomes (W3/Bil):** **(ICARDA-21)** 100% of target farmers adopt the wheat based technologies on 133,000 ha (2015);	849.304

Level	Level of organization within the CRP	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Planned Budget ($ 000s)
		Innovation platform development process; Food value chains analysis and development (gender-disaggregated); community-based seed system analysis and assessment; agroecological similarity mapping, technology packages development; **Gender dimension:** Research results of gender strategic research on gender-responsive extension services disseminated to researchers and practitioners through training; Women's empowerment through increase in knowledge and options in food and seed value chains;		

Table 3. West African Sahel and Dry Savannas Activities by Action Site

I. Wa-Bobo-Sikasso Action Site

#	Full Title	CG Center	Activity Leader	Other Scientists (CG)	Discovery	Proof of Concept	Pilot	Scaling Up	1	2	3	4	5	6	Budget
1	Contour ridge bunding and other in-field water harvesting structures as entry/leverage points	ICRISAT	z.birhanu@cgiar.org			100%			0%	0%	0%	50%	0%	50%	40,500
2	Multi-purpose trees (G. sepium, Moringa, etc)	Bioversity	r.vodouhe@cgiar.org		100%				40%	0%	30%	30%	0%	0%	35,656
3	Integrated soil fertility management	ICRISAT	v.bado@cgiar.org			100%			0%	0%	0%	70%	0%	30%	44,550
4	Farmer managed natural regeneration of trees (FMNRT)	ICRAF	j.bayala@cgiar.org			100%			20%	0%	20%	60%	0%%	0%	35,656
5	Improved stover and crop residue processing for animal feed	ICRISAT	m.adam@cgiar.org	p.s.traore@cgiar.org h.ajeigbe@cgiar.org s.jarial@cgiar.org	100%				40%	0%	0%	50%	0%	10%	44,550
6	Natural resource governance (land tenure, local institutions, local conventions)	ILRI	a.ayantunde@cgiar.org	t.amole@cgiar.org	100%				30%	0%	0%	50%	0%%	20%	36,308
7	Linking participatory action-research to policy through district-level platforms	ICRISAT	e.totin@cgiar.org			100%			0%	30%	0%	0%	35%	35%	11,340
8	Supplementary HH survey for Mahon/Sayaga (Burkina-Faso)	ICRAF	j.binam@cgiar.org		100%				0%	40%	0%	0%	30%	30%	15,635
TOTAL															264,195

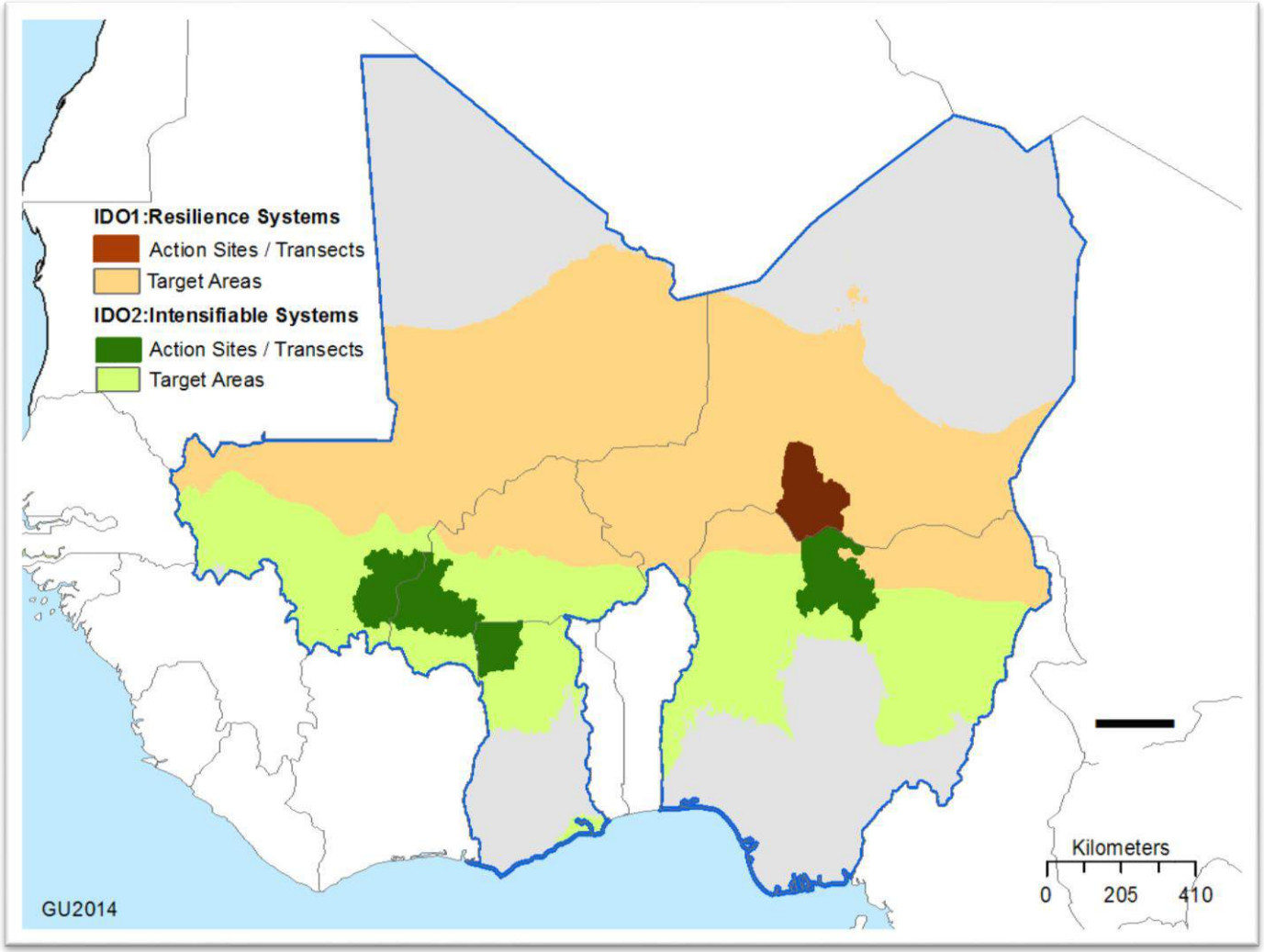
II. Kano - Katsina - Maradi Action Site

#	Full Title	CG Center	Activity Leader	Other Scientists (CG)	Discovery	Proof of Concept	Pilot	Scaling Up	1	2	3	4	5	6	Budget
1	Multipurpose trees (nitrogen fixing trees, fodder trees, fruit trees) / Farmer Managed Natural Regeneration (FMNR)	ICRAF	p.savadogo@cgiar.org				100%		20%	0%	20%	60%	0%		32,403
2	Dual purpose crop	ICRISAT	s.jarial@cgiar.org				100%		0%	50%	35%	0%	0%	15%	24,300
3	Efficient feeding systems (including feed conservation and processing)	ILRI	t.amole@cgiar.org	a.ayantunde@cgiar.org			100%		0%	40%	0%	30%	30%	0%	97,901
4	Tree domestication/ Income Generating Grafted Fruit Trees	ICRAF	p.savadogo@cgiar.org				100%		0%	%	30%	40%	30%	0%	24,316
5	Crop, tree and animal breed diversification and improvement	Bioversity	r.vodouhe@cgiar.org	s.ndanikou@cgiar.org		100%			0%	40%	30%	30%	0%	0%	28,353
6	Nutrient rich local food diversity	Bioversity	r.vodouhe@cgiar.org	s.ndanikou@cgiar.org g.ntandou-bouzitou@cgiar.org			100%		0%	30%	40%	0%	30%	0%	28,353
7	Improving resource use and cycling through tree-crop-livestock interactions	ICRISAT	d.fatondji@cgiar.org				100%		0%	0%	30%	50%	20%	0%	23,160
8	Multi-stakeholder platforms to facilitate co-learning and information exchanges	ICARDA	s.assefa@cgiar.org				100%							100%	40,465
TOTAL															**299,251**

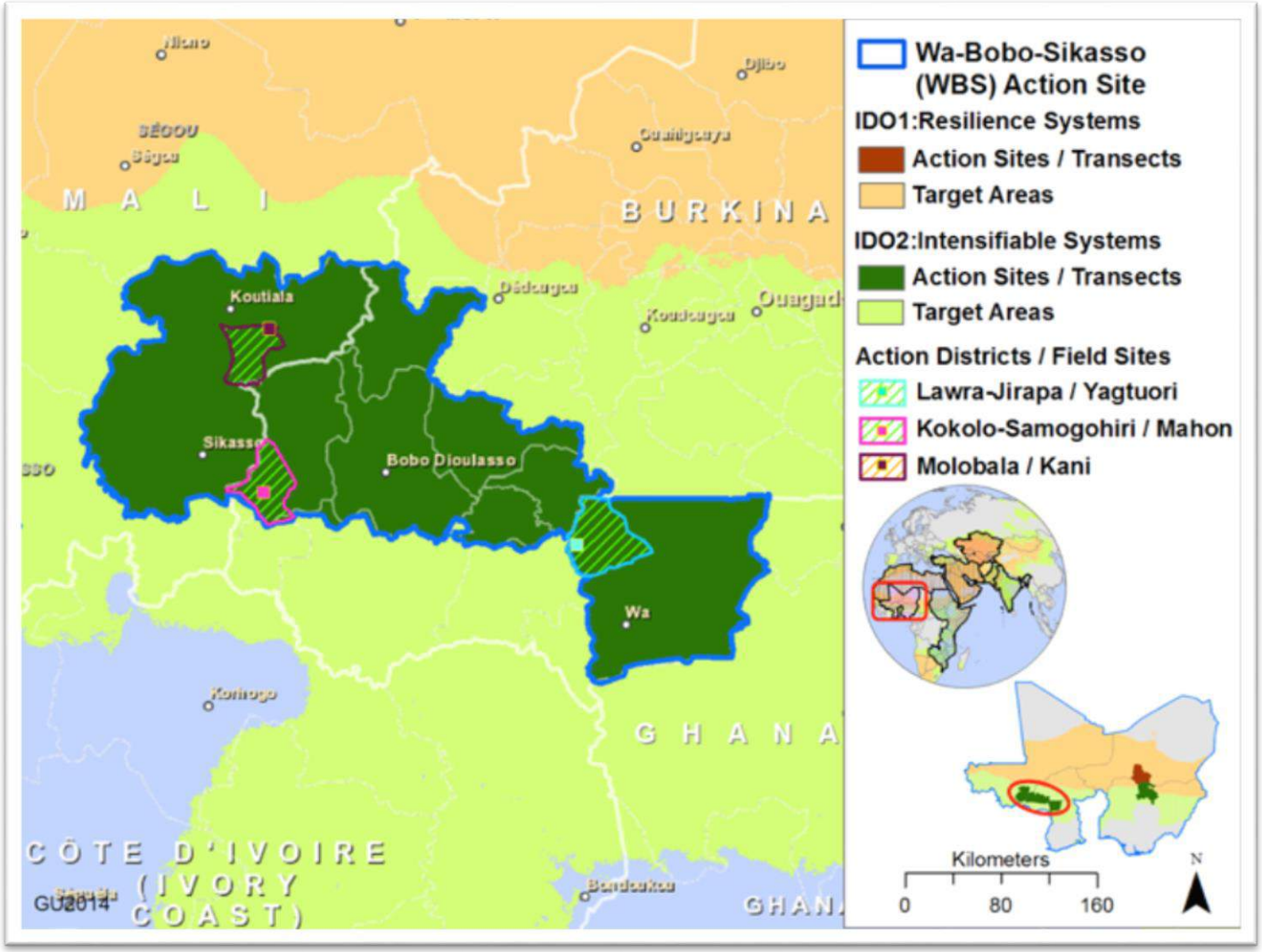
Table 4. West African Sahel and Dry Savannas - Bilateral/W3 Projects X Cluster of Activities

ID	Lead Center	Project or Activity Title	From	To	Email	ESA %	WAS %	Countries % (equal)	2015 Budget to DS (MUSD)	Agro-Pastoral %	Rainfed %	Irrigated %
1	ICRAF	DGIS	Aug-13	Jul-18	y.ouedraogo@cgiar.org	40	60	Ethiopia, Kenya, Mali, BF, Niger	2.200000	100	0	0
2	ICRAF	EU IFAD	Feb-15	Jan-17	f.sinclair@cgiar.org	50	50	Kenya, Ethiopia, Tanzania, Mali. Niger	2.180000	100	0	0
3	ICRAF	SmAT Scaling	Oct-14	Sep-19	a.arinloye@cgiar.org		100	Mali	2.160000	90	0	10
4	ICRAF	McKnight	Sep-13	Aug-16	J.Bayala@cgiar.org		100	Mali, Burkina Faso	0.110000	100	0	0
5	ICRISAT	Spurring a Transformation in Agriculture through Remote Sensing (STARS)	Aug-14	Dec-15	p.s.traore@cgiar.org		100	Mali, Nigeria	0.402000	0	100	0
6	ICRISAT	Africa RISING	2011	2016	z.birhanu@cgiar.org		100	Mali	0.081000	0	100	0
7	ICRISAT	USAID GLOBAL CLIMATE CHANGE (USAID GCC)	May-14	Oct-15	z.birhanu@cgiar.org		100	Mali	1.067000	60	35	5
21	ICARDA	Support to agriculture Research for development of strategic crop in africa (SARD-SC)	May-12	Nov-16	S.Assefa@cgiar.org	50	50	Nigeria, Niger, Mali, Mauritania, Ethiopia, Eritrea, Kenya, Tanzania, Zambia, Zimbabwe, Lesotho, Sudan	2.319815	0	50	50

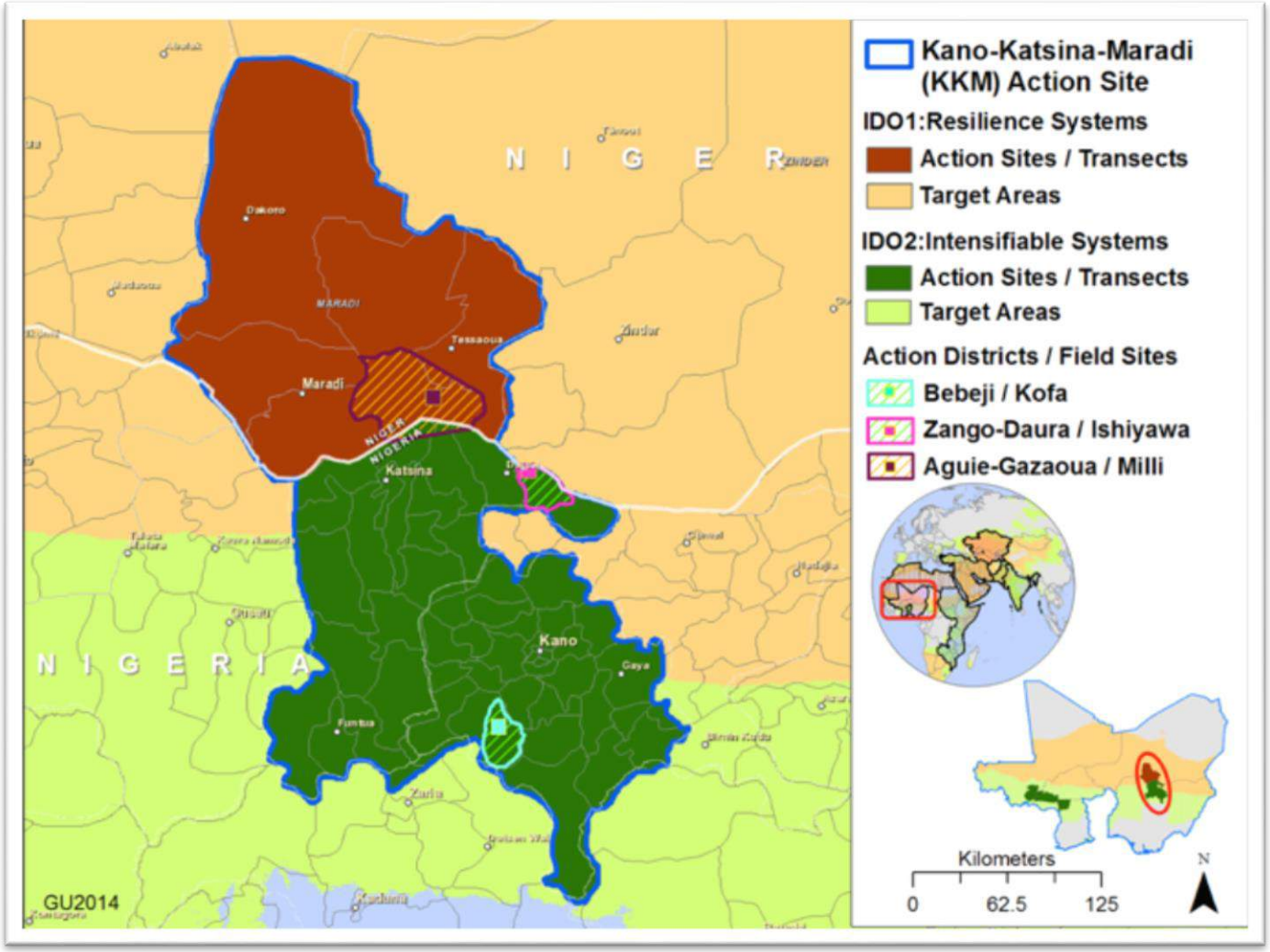
Map 1. West African Sahel and Dry Savannas Flagship Boundaries



Map 3. Wa-Bobo-Sikasso Action Site



Map 2. Kano - Katsina - Maradi Action Site



CGIAR

RESEARCH PROGRAM ON
Dryland Systems

The CGIAR Research Program on Dryland Systems aims to improve the lives of 1.6 billion people and mitigate land and resource degradation in 3 billion hectares covering the world's dry areas.

Dryland Systems engages in integrated agricultural systems research to address key socioeconomic and biophysical constraints that affect food security, equitable and sustainable land and natural resource management, and the livelihoods of poor and marginalized dryland communities. The program unifies eight CGIAR Centers and uses unique partnership platforms to bind together scientific research results with the skills and capacities of national agricultural research systems (NARS), advanced research institutes (ARIs), non-governmental and civil society organizations, the private sector, and other actors to test and develop practical innovative solutions for rural dryland communities.

The program is led by the International Center for Agricultural Research in the Dry Areas (ICARDA), a member of the CGIAR Consortium. CGIAR is a global agriculture research partnership for a food secure future.

For more information, please visit

drylandsystems.cgiar.org

Led by:

ICARDA
Science for Better Livelihoods in Dry Areas

In partnership with:

ICRISAT
Science with a human face

Bioversity International

CIAT

CENTRO INTERNACIONAL DE LA PAPA
CIP

World Agroforestry Centre

ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

IWMI
International Water Management Institute