2012 Technical Report per Activity

Each Program Participant must provide a small remark against each activity/deliverable to indicate the status of the activity (2-4 sentences required per activity) using the form below. Updated data from the current partners is also required.

CCAFS Center Led Activities
ICARDA - International Center for Agricultural Research in the Dry

Activity No. 72					
Activity title	Methodology development and data collection (data needed for drought indices/modeling)				
CCAFS Objective *(select from drop list)*	1.1 Adapted farming systems	**CCAFS Milestone No.** *(select from drop list / for further details go to CCAFS 2012 - 2015 LOGFRAME sheet)*	1.1.2 2013 (1)		
Activity objectives *(what the activity aims to*	**Objective 1**	Identify and promote strategies and methods of drought mitigation and preparedness for progressive climate change conditions			
Activity status	Partially completed				
Insert a small remark to indicate the status of the activity. *(2-4 sentences required per activity)*	**Long term rainfall data collection completed and the analysis is ongoing; Long term cereals (wheat, barley) yields collection from different regions in Morocco completed; Experiments data collection and anlysis on supplemental irrigation and crops management (Morocco and Syria) and on water harvesting (Jordan) were conducted in 2012 and will continue only in Morocco and Jordan in 2013.**				
Deliverables status *(You may add any unexpected deliverable)*	**Type**	**Description**	**Year**	**Status**	**Format**
	Data	Rainfall data sets collected from the available weather stations in Morocco and Syria and used in computing SPI and hence drought intensities reported; Water allocation model developed and preliminary testing conducted for the case of the benchmark site of Morocco; Further data on drought mitigation and climate change adaptation techniques such as supplemental irrigation, on farm water harveting, tolerant varieties/species collected from field experiments (yields, water use, water productivity)	2013	Partially completed	Select a format
	Model tools and software	Rainfall data sets collected from the available weather stations in Jordan and used in computing SPI and consequently drought intensities reported; Further data on supplemental irrigation, on farm water harveting, tolerant varieties/species collected from field experiments (yields, water use, water productivity) and reported.	2014	Select a status	Select a format
	Reports, publications	A report on local and indigenous drought mitigation techniques used by farmers and on national drought policies/mesures of drought planning in WANA prepared and published;	2015	Select a status	Select a format
	Reports, publications	Publications on drought characterization and drought severity mapping in selected countries of WANAed prepared;	2015	Select a status	Select a format
	Reports, publications	A publication on water allocation in the benchmark site of Morocco;	2015	Select a status	Select a format
	Workshops	A workshop on drought management conducted with partners.	2015	Select a status	Select a format

Current Partners		Acronym	Name	
	Select a partner.	INRA	Institut National de la Recherche Agronomique, Tadla Maroc	
		Contact Point Full Name	Contact Point Email	
		Abdeljabar Bahri	bahriabdeljabar@gmail.com	
		Acronym	Name	
	Select a partner.	NCARE	National Center for Agricultural Research and Extension	
		Contact Point Full Name	Contact Point Email	
		Yasser Mohawesh	yasser_ncartt@yahoo.com	

Activity No. 73			
Activity title	The use of the Focused Identification of Germplasm Strategy (FIGS) to select best bets for adaptation to climate change		
CCAFS Objective *(select from drop list)*	1.1 Adapted farming systems	**CCAFS Milestone No.** *(select from drop list / for further details go to CCAFS 2012 - 2015 LOGFRAME sheet)*	1.1.3 2014 (1)
Activity objectives *(what the activity aims to achieve)*	**Objective 1**	To develop germplasm with traits to adapt to climate change and establish platform for its evaluation	
Activity status	Partially completed		
Insert a small remark to indicate the status of the activity. *(2-4 sentences required per activity)*	**New algorithms and new data sets were developed to search for CC related traits along with the development of subsets with traits to adapt to CC extremes (drought, heat and cold). Some of the subsets are currently under evaluation in conjunction with the development of phenotyping prototype to better capture PGR CC related traits including potential CC traits (root system traits). A a new platform for evaluation of PGR subsets is being launched involving universities and research institutions globally.**		

Deliverables status *(You may add any unexpected deliverable)*

Type	Description	Year	Status	Format
Model tools and software	FIGS algoritms speficic to climate change and allied FIGS tools such as phenology needed to tune the different FIGS CC algorithms/ models developed. Germplasm with climate change related traits of drought and heat tolerance and resistance to insect pests and diseases identified.	2013	Partially completed	Select a format
Workshops	Platform to identify ket climate change related traits and identify mechanism for evaluation of FIGS climate change subsets	2012	Completed	Select a format
Communication products	Use of FIGS wiki to consult with partners on the development of FIGS CC subsets; Announcement of FIGS CC workshop via Internet	2014	Select a status	Select a format
Reports, publications	Report on FIGS approach to develop FIGS CC subsets, report on the FIGS workshop and publication of results	2015	Partially completed	Document (*.doc, *.odt, *.pdf)
Other	Gap analysis and two join collecting (germplasm) missions based on FIGS results.	2015	Select a status	Select a format
Data	Phenological data	2012	Completed	GIS raster (ESRI Grids, GeoTiff, etc)
Data	Phenological data and Collecting data	2012	Completed	Spreadsheet (*.xls, *.ods)

		Acronym	Name	
	NARES - National agricultural research and extension services	INRA	Institut National de la Recherche Agronomique	
		Contact Point Full Name	Contact Point Email	
		Acronym	Name	
	CG - CGIAR Center	BI	Bioversity International	
		Contact Point Full Name	Contact Point Email	
		Acronym	Name	
	CG - CGIAR Center	IRRI	International Rice Research Institute	
		Contact Point Full Name	Contact Point Email	

		Acronym	Name	Contact Point Full Name	Contact Point Email
Current Partners	Select a partner.	ARCAD	Agropolis Resource Centre for Crop Conservation, Adaptation and Diversity		
	AI - Academic Institution		University of Concordia	Dr. Daya Selvadurai Dayanandan	daya@alcor.concordia.ca
	AI - Academic Institution		University of Helsinki	Dr Fred Stoddard	frederick.stoddard@helsinki.fi
	Select a partner.	AARINENA	Association of Agricultural Research Institutions in the Near East and North Africa		
	Select a partner.	CAAS	Chinese Academy of Agricultural Science, China	Dr. Lijuan Qiu	qiu_lijuan@263.net
	Select a partner.	IBC	Indian Council of Agricultural Research, India	Dr. B.B. Singh	adgop.icar@nic.in

Activity No. 74

Activity title	Community-based identification and evaluation of rangeland and forage species for tolerance to drought, cold and salinity, as potential sources of climate change adapted germplasm		
CCAFS Objective *(select from drop list)*	1.1 Adapted farming systems	**CCAFS Milestone No.** *(select from drop list / for further details go to CCAFS 2012 - 2015 LOGFRAME sheet)*	1.1.3 2014 (1)
Activity objectives *(what the activity aims to achieve)*	**Objective 1**	Identify and evaluate drought and salt tolerant rangeland/forage species	
	Objective 2	Contribute to the development of database for nutritional value and dry matter production of fodder species	
	Objective 3	Reduce vulnarability of agro-pastoralists via alleviating gap in feed resources and preserving environment	
	Objective 4	Develop predictive models using climate change data on distribution of targted range species in WANA region	
Activity status	Partially completed		
Insert a small remark to indicate the status of the activity. *(2-4 sentences required per activity)*	Based on reserach findings and indegenous knowledge, several range and forage germplasms with drought and salinity tolerance have been identified. Facsheets for each selected species is being prepared. In collaboration with ARI significant progress has been made toward the development of a decision support for monitoring vegetation using smartphone technology. The vulnerability of key range species to climate change have been assessed using ecological-based model (in this respect a peer-reviewed ISI paper is in press in the Journal of Climate Change) . Unfortunately, we have to abandon all the trials initiated in Syria. This forced relocation had impacted this activity negatively especially the screening of cold tolerant cactus (Opuntia ficus indica) accessions and the abandonment of the community-based dissemination of stress tolerant range species in the Syrian Badia (steppe).		

Deliverables status *(You may add any unexpected deliverable)*

Type	Description	Year	Status	Format
Data	A set of potentials range species for salt affected soils and drought (WUE)	2012	Partially completed	Document (*.doc, *.odt, *.pdf)
Model tools and software	Predictive models for distribution changes of targeted rangeland species	2012	Completed	Presentation (*.ppt, *.odp)
Model tools and software	Design and develop an integrated data acquisition system for vegetation monitoring	2013	Partially completed	Other
Data	Identified Cactus accessions for cold tolerance in WANA region	2014	Partially completed	Document (*.doc, *.odt, *.pdf)
Capacity	Enhanced capacity of NARS partners in resource mapping and sustainable use of natural resource base	2013	Select a status	Select a format

Reports, publications	Factsheets on potential key range and forage species for drought and salt affected soils	2014	Partially completed	Document (*.doc, *.odt, *.pdf)
Reports, publications	A package of adaptation options that demonstrate how integrated crop-range-livestock production system in drylands will adapt to future climate variability.	2015	Uncompleted	Document (*.doc, *.odt, *.pdf)

Current Partners

	Acronym	Name	Contact Point Full Name	Contact Point Email
NGO_DO - Non-governmental organization/Development organization		Shohada Community (Cooperative)	Abdul Hamid Karim Al Mowajda	
NARES - National agricultural research and extension services	NCARE	National Center for agricultural Research and Extension (Jordan)	Dr. Yasser Mahawesh	yasser_ncartt@yahoo.com
NARES - National agricultural research and extension services	NCARE	National Center for Agricultural Research and Extension	Dr. Luna Al-Hadidi	lunah70@yahoo.com
AI - Academic Institution	JUST	Jordan University of Science and Technology		
NARES - National agricultural research and extension services		Badia development projecT		
ARI - Advanced Research Institution	CSIRO	Commonwealth Scientific and Industrial Research Organisation		
AI - Academic Institution	OSU	The Oregon State University	Prof. Douglas E. Johnson	douglas.e.johnson@oregonstate.edu
Select a partner.	OSU	The Oregon State University	Abdul Hamid Karim Al Mowajda	

Activity No. 75

Activity title	Model-based assessment of the impacts of climate change and the effects of adaptation technologies on crop water availability and productivity and farmer's livelihood			
CCAFS Objective *(select from drop list)*	1.2 Breeding strategies	**CCAFS Milestone No.** *(select from drop list / for further details go to CCAFS 2012 - 2015 LOGFRAME sheet)*	1.2.1 2013 (2)	
Activity objectives *(what the activity aims to achieve)*	**Objective 1**	Assessing the impact of climate change through crop-simulation modeling		
	Objective 2	Assessing the impact of climate change on crop profitability and farmers' livelihoods.		
Activity status	Select a status			

Insert a small remark to indicate the status of the activity.
(2-4 sentences required per activity)

1. Assessment of the effect of climate change on productivity of wheat in 4 Central Asian countries (Kazakhstan, Uzbekistan, Kyrgyzstan and Tajikistan) was undertaken using changes in temperature and precipitation from the average of 7 selected general circulation models (GCM)s. Expected shortages of water resources were accounted for. The same will be repeated using individual GCMs in 2013. Data collection necessary for cotton and potato crop model calibration started in Central Asian countries. Data collection for wheat modeling in Morocco was delayed and will begin in early 2013
2. Field trials for testing facultative wheat varieties selected for tolerance to heat stress during flowering has commenced in Kashkadarya province, Uzbekistan. A weather station and soil moisture sensors were installed for continuous monitoring of climatic and soil data. Initial soil sampling was carried out prior to sewing of crops in September 2012.
3. Simulations of policy impacts on climate change adaptation measures in Central Asia. The policy that their impacts were simulated include (1) reduced flexibility in decision making in Uzbekistan due to the state order for cotton and wheat, (2) high fertilizer prices and limited fertilizer access in Kyrgyzstan and (3) increasing fertilizer prices in Tajikistan

Deliverables status
(You may add any unexpected deliverable)

Type	Description	Year	Status	Format
Reports, publications	Report on the effect of climate change on productivity of wheat and barley and potentials for adaptation to CC by SI and improved, heat tolerant varieties in Morocco	2013	Partially completed	Document (*.doc, *.odt, *.pdf)
Model tools and software	bio-physical model calibrated to cotton in Central Asia; calibration data set established for modeling the impact of CC on wheat productivity in Algeria and Sudan	2013	Partially completed	Document (*.doc, *.odt, *.pdf)
Reports, publications	survey of current productivity and farmers' perceptions and adaptation strategies in Morocco (North Africa) and Central Asia; analysis of the impacts of climate change and benefit cost analysis of CC adaptation measures in (Algeria-removed) **Morocco (added)** and Sudan	2013	Partially completed	Document (*.doc, *.odt, *.pdf)
Reports, publications	Report and policy recommendations on the effect of climate change and adaptation options on productivity of wheat in (A**lgeria-not fesaible and removed**) **Morocco (added)** and Sudan (not feasible and removed) and cotton in Central Asia;	2014	Partially completed	Document (*.doc, *.odt, *.pdf)
Model tools and software	PRECIS model introduced and first preliminary simulation runs carried out by the Meteorological Service of Uzbekistan (Central Asia); CropSyst-GIS modeling environment established and tested; Final report on the impacts of climate change on crop profitability and farmer income in Kazakhstan, Uzbekistan, Kyrgyzstan and Tajikistan (Central Asia); Report on the benefit-cost analysis of adaptation measures to climate change in Morocco (North Africa).	2014	Select a status	Select a format
Model tools and software	Integrated modeling framework (PRECIS-CropSyst-GIS) developed for the assessment of CC at regional scale, and applied at selected regions in Central Asia (focus wheat and cotton);	2015	Select a status	Select a format
Reports, publications	Research report on analysis of regional scale economic impacts of climate change in selected regions of Central Asia and Morocco; Policy simulations with the model assessing the impacts of different government subsidies and quotas on CC adaptation measures.	2015	Partially completed	Spreadsheet (*.xls, *.ods)
Data	Data on soil texture, water content, chemical composition, meteorological data and data on crop phenology collected at the experimental site in Karshi (Uzbekistan).	2012-2013	Partially completed	Document (*.doc, *.odt, *.pdf)
Data	Parameters of CropSyst model for major wheat varieties grown in Morocco	2012-2013	Partially completed	Select a format

	Acronym	Name	Contact Point Full Name	Contact Point Email
NARES - National agricultural research and extension services		U.U.Uspanov Kazakh Research Institute of Soil Science and Agrichemistry	Azimbay Otarov	
NARES - National agricultural research and extension services		Kyrgyz Research Institute of Crop Husbandry	Lyudmila Martynova	
ARI - Advanced Research Institution		Ministry of Agriculture	Malik Bekenov	
ARI - Advanced Research Institution		Uzbek Cotton Growing Research Institute	Bobisho Kholov	
NARES - National agricultural research and extension services		Department of Environment and Natural Resources, INRA	Riad Balaghi	
NARES - National agricultural research and extension services		Agro-meteorology Service, National Direction of Meteorology	Tarik EL Hairech	
ARI - Advanced Research Institution	UoF	University of Florida	Sandra Russo	srusso@ufic.ufl.edu
NARES - National agricultural research and extension services	INRA	Institute Nartional de Researche Agronomica	Abdelali Laamari	laamari@gmail.com

Activity No. 76

Activity title	Monitoring of population changes and adaptation of insect pests and diseases of cereals and legumes		
CCAFS Objective *(select from drop list)*	1.2 Breeding strategies	**CCAFS Milestone No.** *(select from drop list / for further details go to CCAFS 2012 - 2015 LOGFRAME sheet)*	1.2.1 2015 (3)
Activity objectives *(what the activity aims to achieve)* — **Objective 1**	To develop risk distribution maps of ceral and food legume inset pests, parasitic weeds and diseases in central Asia, North& East Africa and South Asia		
Activity status	Partially completed		
Insert a small remark to indicate the status of the activity. *(2-4 sentences required per activity)*	**Insect pests and diseases of cereals (wheat and barley) and food legumes (chickpea, lentil and faba bean) were surveyed in Morocco, Uzbekistan and Ethiopia. Due to low rainfall conditions, the incidence on insect pests, diseases and viruses were low in the three countries. Preliminary risk maps were developed for the three regions (East and southern Africa, Central Asia and North Africa) using regional climatic data. The survey will continue in 2012/13 cropping season to get more information on pest status and other maps (farming systems) to fine tune the pest risk maps. Moreover, we plan to publish the two season survey data at the end of the 2012/13 cropping season**		

Type	Description	Year	Status	Format
Data	Major changes in population structures of insect pests and diseases monitored in Central Asia, North and East Africa	2012	Partially completed	Plain text (*.txt)

Deliverables status
(You may add any unexpected deliverable)

Data	Major changes in population structures of insect pests and diseases monitored in Central Asia, North and East Africa	2013	Partially completed	GIS raster (ESRI Grids, GeoTiff, etc)
Reports, publications	Major changes in population structures of insect pests and diseases monitored in Central Asia, North and East Africa	2014	Select a status	Select a format
Reports, publications	Major changes in population structures of insect pests and diseases monitored in South Asia	2015	Select a status	Select a format

Current Partners

	Acronym	Name	Contact Point Full Name	Contact Point Email
NARES - National agricultural research and extension services	UZSPCA	Uzbek Scientific Production Center for Agriculture	Zafar Ziyaev	zafaruzripi@gmail.com
NARES - National agricultural research and extension services	EIAR	Ethiopian Institute of Agricultural Research	Dr. Tebkew Damte	tebkew@yahoo.com
NARES - National agricultural research and extension services	INRA-CRRA	Instiute National de la Recherche Agronomique, Morocco	Saadia Lhaloui	slhaloui@yahoo.com
NARES - National agricultural research and extension services		Bangladesh Agricultural Research Institute		
NARES - National agricultural research and extension services		Nepal Agricultural Research Council		

2012 Technical Report per Activity

Each Program Participant must provide a small remark against each activity/deliverable to indicate the status of the activity (2-4 sentences required per activity) using the form below. Updated data from the current partners is also required.

CCAFS Center Led Activities
ICARDA - International Center for Agricultural Research in the Dry

Activity No. 77					
Activity title	Monitoring and modeling the effects of extreme rainfall events on land degradation and the impact of soil and water conservation technologies				
CCAFS Objective *(select from drop list)*	2.1 Identify and test innovations that enable rural communities to better manage climate-related risk and build more resilient livelihoods	**CCAFS Milestone No.** *(select from drop list / for further details go to CCAFS 2012 - 2015 LOGFRAME sheet)*	2.1.3 2012 (2)		
Activity objectives *(what the activity aims to achieve)*	**Objective 1**	to provide robust model to evaluate impact of climate change and extreme events on land and water resources and to provide options			
	Objective 2	to maintain productivity and halt land degradation			
Activity status	Select a status				
Insert a small remark to indicate the status of the activity. *(2-4 sentences required per activity)*	**The impact of various soil and water conservation interventions on reducing the impact of extreme events was assessed at field level. These were tested with farmers' participation and were disseminated to farmers. The trend of variations in rainfall intensity was analyzed for 32 years.**				
Deliverables status *(You may add any unexpected deliverable)*	**Type**	**Description**	**Year**	**Status**	**Format**
	Reports, publications	Characterization of past, present and future frequency, intensity and distribution of extreme rainfall events	2013	Partially completed	Document (*.doc, *.odt, *.pdf)
	Model tools and software	A calibrated model to simulate the impact of various soil and water conservation interventions on land degradation, vegetation cover and productivity and evaluate the impact of different scenarios of various rainfall intensities under dry agro-ecosystems to recommend appropriate adaptation strategies	2015	Select a status	Select a format
Current Partners		**Acronym**	**Name**		
	ARI - Advanced Research Institution		Texas A&M University		
		Contact Point Full Name		**Contact Point Email**	
		Prof. Raghavan Srinivasan		srini.tamu@gmail.com	
		Acronym	**Name**		
	NARES - National agricultural research and extension services	NCARE	National Center for Agricultural Research and Extension		
		Contact Point Full Name		**Contact Point Email**	
		Dr. Yasser Mohawesh		asser_ncartt@yahoo.com; yasser@ncare.gov.	

2012 summary report of activities and deliverables by Output level

Each Program Participant must prepare a succinct summary of activities and deliverables, organised by Output level of the CCAFS objectives. Length is dependent on budget size so please refer to the table on the explanatory notes.

CCAFS Center Led Activities

ICARDA - International Center for Agricultural Research in the Dry Areas

Theme 1. Adaptation to Progressive Climate Change	
Objective 1.1 Analyze and design processes to support adaptation of farming systems in the face of future uncertainties of climate in space and time	
Outcome 1.1: Agricultural and food security strategies that are adapted towards predicted conditions of climate change promoted and communicated by the key development and funding agencies (national and international), civil society organizations and private sector in at least 20 countries	
Output 1.1.2 Building of regional and national capacities to produce and communicate socially inclusive adaptation and mitigation strategies for progressive climate change at the national level (e.g. through NAPAs)	
Prepare a succinct summary of activities and deliverables, organised by Output level of the CCAFS objectives	Data sets (more than 20 years) of monthly rainfall collected for Morocco (20 weather stations), Syria (15 weather stations) and Jordan (8 weather stations) and Standardized precipitations indices (SPI) computed; Wheat yields (20 years) collected and correlations of these yields with SPI run for major cereal production regions in Morocco; Experiments on the response of wheat, maize, sugar beet and red pepper to different supplemental irrigation levels conducted and data on yields water use and water productivity have been collected. These data with the one that will be collected in 2013 will be used to develop water production functions; Experiments on the response of different varieties/lines of bread wheat to supplemental irrigation and zero tillage was conducted in Syria (tel Hadya) and data on yields, water use and water productivity were collected; Experiments on the response of different varieties/lines of durum wheat and barley to supplemental irrigation and nitrogen fertilizer applications was conducted in Syria (Tel Hadya) and data on yields, water use and water productivity were collected; The effect of improved Marabs (rainwater spreading) on barley production was evaluated and data on yields collected.
Output 1.1.3 New knowledge, guidelines and access to germplasm are provided for using genetic and species diversity to enhance adaptation, productivity and resilience to changing climate with benefits for socially marginal groups.	
Prepare a succinct summary of activities and deliverables, organised by Output level of the CCAFS objectives	(1) Most adaptable range species to environmental stresses and climate change in the WANA region have been identified (Periploca angustifolia, Retama retam, Stipa lagascae, Salsola vermiculata, etc). Seeds and seedlings of selected species is being disseminated to farmers and communities for wider adoption. For assessing and monitoring success of establishment of these species a decision support system is being developed that is objective, rapid and easy to use. To demonstrate impact of climate change on selected key rangeland species to land managers and policy makers a modeling excercise was undertaken. The results showed that threatened range species, such as S. vermiculata which were subjected to continuous grazing pressure, showed high vulnerability to climate change as expressed by the predicted decrease in the areas of their distribution. However, species with low palatability and broad ecological niches (i.e. Haloxylon salicornicum) had an advantage due to the reduced competition for water and nutrients. An important workshop was held in Tunisia where research and development institutions took active role to discuss the impact of climate change on plant community in arid and semi-arid ecosystems. Two scientists representing ICARDA attended the 14th meeting of the FAO-CIHEAM sub-network on Mediterranean pastures and fodder crops. The main theme for the conference was "New Approaches for Grassland Research in a Context of Climatic and Socio-Economic Changes". During this conference 3 proceedings papers were presented (see publications).
	(2) Algorithms and GIS data developed and used to search for CC related traits leading to the selection of CC (extremes) related traits sub-sets of germplasm drawn from global genetic resource collections. Information communicated/exchanged on the procedures to develop such subsets and a platform is being established for further development of both the methodology and subsets with CC related traits globally. Subsets were provided to uses and collection of new germplasm was conducted to fill in the gaps in the collections.
Objective 1.2 Develop breeding strategies for addressing abiotic and biotic stresses induced by future climatic conditions, variability and extremes, including novel climates	
Outcome 1.2: Strategies for addressing abiotic and biotic stresses induced by future climate change, variability and extremes, including novel climates mainstreamed among the majority of the international research agencies who engage with CCAFS, and by national agencies in at least 12 countries	
Output 1.2.1 Understanding and evaluating the response of different varieties/crops to climate change in time and space, and generating comprehensive strategies for crop improvement through a combination of modeling, expert consultation and stakeholder dialogue	
Prepare a succinct summary of activities and deliverables, organised by Output level of the CCAFS objectives	During the survey, the major diseases, insect pests on wheat and barley were rusts, foliar diseases, Hessian fly, Barley stem gall midge, aphids and Sunn pest. Their incidence was very low in the three countries due to low rainfall conditions. Wheat rusts incidences were very low in the three countries. On food legumes, Ascochyta blight, wilt/root rots, chocolate spot, pod borers, Leaf miner and aphids were recorded. Unidentified insect pests, legume viruses and disease were recorded on faba bean In Ethiopia and Uzbekistan. using regional climatic data, preliminary pest risk maps were developed for each disease, virus and insect pest(eg. vulnerability maps of wheat for yellow rust in rain fed and irrigated agriculture).hanging planting date for chickpea and lentil in Ethiopia was found to increase pod borer incidence as compared with late planted chickpea and lentil. Moreover, the minor pest cut worm on chickpea has become a major one in north west Ethiopia.

1. Using the framework of the ICARDA/IFPRI project "Adaptation to Climate Change in Central Asia and People's Republic of China" the productivity of wheat in Kazakhstan, Uzbekistan, Kyrgyzstan and Tajikistan (Central Asia) was assessed using the CropSyst model and the average change of temperature and precipitation based on 7 general circulation models (GCM): BCCRBCM2.0; CSIRO-MK3.0; MIROC3.2; CGCM3.1; CNRM-CM3; ECHAM5/MPI-OM; and GFDL-CM2.0. Using three agronomic management scenarios; including different rates and timing of fertilizer and water application, crop modeling showed that water application had the largest impact on crop production in future CC scenarios. Due to the large spatial variability in regional climatic conditions the same scenarios will be modeled using future weather scenarios from the 7 individual GCMs to investigate and improve site-specific modeling outputs. New weather data files been developed and 2 GHG emission scenarios (A1b and A2) and 3 CC affected futures (2010-2040, 2040-2070, 2070-2100) for 17 selected sites commenced in late 2012. Simulations and analysis are ongoing. The collection of data necessary for calibration of crop models for cotton and potato is well underway.

2. Based on results of the ICARDA/IFPRI project "Adaptation to Climate Change in Central Asia and People's Republic of China" eight varieties of facultative wheat (Hazrati Bashir, Amirbek, Gozgon, Jaihun, Elomon, Humo, Sanzar 4, Saidaziz) were selected for tolerance to heat stress during flowering and field trials using these varieties has commenced at the Kashkadarya Research Institute of Grain Breeding and Seed Production of Cereal Crops (KRIGBSPCC) in Kovchin village of Karshi district, Kashkadarya region, Uzbekistan. As well as screening for heat stress during flowering, the field trials will investigate the effect of sowing time on associated yields of the improved wheat varieties. Pre-sowing soil sampling and analysis were carried out in mid-September 2012 and wheat varieties were planted on 21 October 2012 (optimal planting) and 14 November 2012 (late planting). Data for soil physical and chemical properties, soil moisture and salinity, crop phenology and meteorological conditions is being collected regularly throughout the cropping season for further calibration and use in the CropSyst model. Spring planting of these wheat cultivars is planned for 15 February 2013.

3. An inception workshop was held in Rabat, Morocco with the Moroccan colleagues in late June 2012; however due to prolonged discussion with NARS partners the work plan was only finalized at the end of 2012. Calibration of the CropSyst model for major winter wheat varieties grown in Morocco will start in January 2013.

4. We simulated the effects specific policies namely, reduction of the state order for crop in Uzbekistan, improved fertilizer access in Kyrgyzstan, lower fertilizer prices in Tajikistan, with the objective of assessing how these policy changes affect farmers adaptation options and their income.

Theme 2. Adaptation through Managing Climate Risk

Objective 2.1 Identify and test innovations that enable rural communities to better manage climate-related risk and build more resilient livelihoods

Outcome 2.1: Systematic technical and policy support by development agencies for farm- to community-level agricultural risk management strategies and actions that buffer against climate shocks and enhance livelihood resilience in at least 20 countries

Output 2.1.3 Development; and demonstration of the feasibility, acceptability and impacts; of innovative risk management strategies and actions for socially-differentiated rural communities

Prepare a succinct summary of activities and deliverables, organised by Output level of the CCAFS objectives

List of publications that acknowledge CCAFS support

(a) Each Program Participant must list all publications that acknowledge CCAFS support. Only include publications that came out in final version in the calendar year. Please do not include journal papers under review (submitted etc) or out in electronic format ahead of print, except of course for electronic-only journals.
(b) Please try to format references in the Harvard style. A clear guide can be found here: http://libweb.anglia.ac.uk/referencing/harvard.htm

(c) For journal articles, please indicate all of the references that are "green open access" with a single asterisk and those that are "gold open access" with a double asterisk. This is now a requirement from CGIAR donors. Green open access means that the authors have made a free copy available on a website. Gold open access means that the journal allows free download (either as standard practice or because the authors paid for it).
(d) For all publications that are up online, please provide a web link if possible. This will help us to advertise your work more widely.

CCAFS Center Led Activities
ICARDA - International Center for Agricultural Research in the Dry Areas

Publication 1

Type: Journal papers

Citation identifier:

Citation:

Karrou, M. and T. Oweis, 2012. Water and land productivities of wheat and food legumes with deficit supplemental irrigation in a Mediterranean environment. Agricultural Water Management 107:94-103

Publication 2

Type: Other

Citation identifier:

Citation:

A background report on "Drought in West Asia and North Africa region"

Publication 3

Type: Conference proceedings

Citation identifier: [ISBN: 2-85352-490-6] [ISSN: 1016-121-X]

Citation:

Louhaichi, M., M. D. Johnson, P.E. Clark, and D.E. Johnson. 2012. Developing a coherent monitoring system for Mediterranean grasslands. In: Acar, Z., Lopez-Francos, A., Porqueddu, C. (Eds.). New Approaches for Grassland Research in a Context of Climatic and Socio-Economic Changes, 14th meeting of the FAO-CIHEAM sub-network on Mediterranean pastures and fodder crops. Options Méditerranéennes, N. 102: 47-51. Samsun, Turkey 3-6 October 2012.

Publication 4

Type	Citation identifier
Conference proceedings	[ISBN: 2-85352-490-6] [ISSN: 1016-121-X]

Citation

Ates, S. and M. Louhaichi. 2012. Reflexions on Agro-pastoralists in the WANA region: challenges and future priorities. In: Acar, Z., Lopez-Francos, A., Porqueddu, C. (Eds.). New Approaches for Grassland Research in a Context of Climatic and Socio-Economic Changes, 14th meeting of the FAO-CIHEAM sub-network on Mediterranean pastures and fodder crops. Options Méditerranéennes. Number 102: 511-516. Samsun, Turkey 3-6 October 2012.

Publication 5

Type	Citation identifier
Conference proceedings	[ISBN: 2-85352-490-6] [ISSN: 1016-121-X]

Citation

Isik, S., S. Ates, A. Gunes, A.H. Aktas and G. Keles. 2012. Effect of deficit irrigation on dry matter and sheep production from permanent sown pastures. In: Acar, Z., Lopez-Francos, A., Porqueddu, C. (Eds.). New Approaches for Grassland Research in a Context of Climatic and Socio-Economic Changes, 14th meeting of the FAO-CIHEAM sub-network on Mediterranean pastures and fodder crops. Options Méditerranéennes, N. 102: 327-331. Samsun, Turkey 3-6 October 2012.

Publication 6

Type	Citation identifier
Conference proceedings	

Citation

GLAZERINA, M., YULDASHEV, T. & SOMMER, R. 2012a. Climate Change in Dry Lands of Central Asia: from Assessment Methods to Adaptation Strategies. International Workshop on Climate Change Adaptation Strategies for Agriculture and Food Security in Central Asia and the Caucasus,Tashkent, Uzbekistan, 22-24 October 2012.

Publication 7

Type	Citation identifier
Conference proceedings	

Citation

GLAZERINA, M., YULDASHEV, T. & SOMMER, R. 2012b. Modeling crop production under future climate change. 15th Steering Committee Meeting of the CGIAR Regional Program for Central Asia and the Caucasus,Issyk-Kul, Kyrgyzstan, 3-5 September 2012. http://temp.icarda.org/cac/files/15scm/glazirina_icarda_en.pdf

Publication 8

Type	Citation identifier
Conference proceedings	

Citation

GLAZERINA, M., YULDASHEV, T. & SOMMER, R. 2012c. Research on adaptation strategies to climate change in Central Asia. Workshop on sharing of experience on applied researches in the field of water and land management in Central Asia among ICARDA, IWMI, SIC ICWC Tashkent, Uzbekistan, 9 October 2012.

Publication 9

Type	Citation identifier
Conference proceedings	

Citation

SOMMER, R., GLAZERINA, M. & YULDASHEV, T. 2012. Crop-simulation based assessment of the impact of climate change on agriculture in Central Asia - the case of wheat. Central Asia Climate Change - Final workshop,Tashkent, Uzbekistan, 2 February 2012. http://temp.icarda.org/cac/presentations.asp

2012 Case studies

Number of case studies to be submitted is dependent on budget size so please refer to the table on the explanatory notes. Each case study should be about half a page, and Program Participants are expected to build a portfolio of case studies over the years that demonstrate all different types.

CCAFS Center Led Activities

ICARDA - International Center for Agricultural Research in the Dry Areas

2012 Outcome report

Frequency of reporting outcomes is dependent on budget size so please refer to the table on the explanatory notes. (max 1 page)

CCAFS Center Led Activities
ICARDA - International Center for Agricultural Research in the Dry Areas

OUTCOME 1

What is the outcome of the research (use of research results by non-research partners)?

Breeders and physiologisst used New algorithms and new data sets were developed with CCAFS support to search for CC related traits more efficiently.

What outputs produced in the three preceding years resulted in that outcome?

What partners helped in producing the outcome?

University of Helsinki

Who used the output?

Curators, breeders, physiologists and biotechnologists (molecular geneticists)

How was the output used?

The approach and the subsets to search and locate CC related traits

What is the evidence for this outcome: Specifically, what kind of study was conducted to show the connection between the research and the outcome? Who conducted it? Please provide a reference or source.

Evaluation of subsets for CC related traits in particular drought traits (University of Helsinki)-information on the application available; a report by ICARDA, University of Helsinki with the title "Searching for climate change related traits in plant genetic resources collections", is available.

Gender and Social Differentiation related activities summary report - 2012

CRPs that have presented their Gender Strategy to the Consortium in 2012 should show progress in 2013 in relation to implementing the Strategy. Therefore it is expected from Program Participants that findings of gender and social differentiation activities and their significance to be referred in this summary report. It is essential to relate progress towards outcomes to the baseline gender-differentiated conditions being used to measure change. This report should also refer specifically to what is being learnt about gender and how this knowledge is being used to inform research priority-setting and approach. If none or few of your activities integrate gender please explain why it is not relevant to your research portfolio.

CCAFS Center Led Activities

ICARDA - International Center for Agricultural Research in the Dry Areas

In collaboration with University of Floida, we conducted an initial field study of the gendered impacts of climate change on wheat producing farmers in Morocco. The main assumption of the study is that men and women have different agricultural roles and responsibilities within the household and thus experience the impacts of climate change differently. Our goal, then, was to begin to collect qualitative data that would better illustrate the gendered impacts of climate change on agricultural communities in Morocco.

We conducted six focus groups in three different sites Lhyout in Chaouia-Ouardigha region, Jadyane in Doukkala-Abda region, and Mmtaguil Bir Jdid in Meknes region, with women and men. The sites of the research have been identified through a literature review which highlighted those regions most susceptible to the impacts of climate change. The focus groups were held in the home of a community member and we used charts to engage the participants and to facilitate discussion. The most useful tool we employed was the timeline, which served as an interactive tool by which the group could continuously refer and further develop over the course of the focus group discussion. The questions that we asked were centered on three themes: productive roles and responsibilities within the household, adaptive strategies in response to severe weather events, and social capital and information access. These themes were all addressed in the context of climate change. Our overall findings revealed that men and women do have different perceptions of the effects of climate change. While on the whole, men and women both see drought as a severe threat, they have different understandings of how that threat can be mitigated. This may be in part due to the level of information and the social networks that men and women have. Additionally, we found that men and women take on different responsibilities in the context of climate change, with men often migrating to the cities for work, and women filling in roles they might not otherwise fulfill. This study, thus gives reason to further pursue social (and particularly gendered) effects of climate change. This research will continue in 2013 and 2014.