RESEARCH PROGRAM ON
Dryland Systems

CGIAR

South Asia Flagship
2015 Plan of Work and Budget

Revised: June 2015

Food security and better livelihoods
for rural dryland communities

Table of Contents

Table 1. South Asia 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)
5	South Asia	**Agro-pastoral system interventions** (testing, piloting and scaling up): W1&2: Chakwal (Pakistan); W3/Bil: India, Pakistan **Rainfed System interventions** (testing, piloting and scaling up): W1&2: Jodhpur, Barmer and Jaiselmer districts, Rajasthan (India); Bijapur district, Karnataka (India); Anantapur and Kurnool districts, Andhra Pradesh (India); W3/Bil: India, Pakistan **Irrigated Crop Systems** interventions (testing, piloting and scaling up): W3/Bil: India, Pakistan **Collaboration with other CRPs:** DC, CCAFS (Management blue and green water, diversification & intensification and dual purpose crops/hybrids)	**Progress towards CRP IDOs and indicators of progress** ID01 • Adaptation strategies for climate change (climate ready cultivars) based on climate variability risk analysis suggested/ implemented (400 farmers) 2015 • >400 on farm trials integrated crop management for enhancing yield and resilience-Increase in Yield of crops (>15%) & reduction in variability (2015) • Farm type specific diversification options for resilience building; integrating perennial component (40 farmers) ID02 • Area (>250 ha) and farmers (>300) covered by interventions: cropping intensity increase by 10%, Yield increase by >15-20% & intensification of short term fallows on participating HHs (2015) • >1500 rural households adopt improved rainwater management methods (2015) • Potato cultivation (tolerant cultivars) introduced in dryland agro-ecology (25 farmers) • Farm type specific diversification options with resource conservation and high value crops (horticulture & medicinal plants) - > 60 farmers ID03 • Development of value chain and market linkages result in viability of shankhpushpi (medicinal crop) cultivation as high value crop in Barmer (>100 farmers): farmers-industry • Small ruminant based value chain strengthened -increased price realization for participating women farmers by 15-20% - 2015 ID04 • Resource conservation methods (soil, water, biomass) used by >100 farmers and up scaled through state government programs (2015) • Resource conservation and institutional interventions increase biomass production and productivity by >20% from CPRs (2015)	3,721.635

			• Resource conservation (>2000 m3 blue water harvesting capacity generated) (2015) ID05 • Capacity of women and youth strengthened (>2500 farmers (25% women) (2015) • Capacity of women: 2 women SHGs formed on livestock and fodder value chains (2015) ID06 • New institutions and partnerships - 3 innovation platforms strengthened (5 workshops of I;) (2015) • New institutions and partnerships built/strengthened- one collective action group on management of CPRs facilitated to be formed & strengthened - >50 farmers (2015) • Village development committees strengthen for participatory management of villages resources and CPRs (6 villages)	

Table 2. South Asia - 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)
5.1	Research Support	Local Partners meetings, research site coordination, support to cross-cutting issues and to W3/Bilateral projects **Partnership**: **CRP-DS CG Centres:** ICRISAT, CIP, ICARDA, ILRI, IWMI **NGOs/CBOs**: 5 **NARS**: 11 **Private Sector: 1** **CG Scientists:**	Research activities, partner and interdisciplinary research workshops, and reports coordinated and reported on time. Cross-learning events over partner centres and sites. Joint work plans integrating activities by diverse group of partners developed and their implementation monitored. Data/information/tool sharing and joint evaluation and monitoring of progress facilitated. Experience sharing, capacity building on integrated systems analysis, research design and modelling Regular online discussions between researchers across action sites on gender & youth research approaches, and on synthesising results on same research topics (extension services, norms, labour)	243
5.2	System Research: Agro-pastoral system interventions (testing, piloting and scaling up)	**Location:** **W1&2:** *Chakwal (Pakistan)*; **W3/Bil***: India, Pakistan* **General Objective:** To improve food security, natural resource base, social equity, hence socio-ecological resilience of agropastoral livelihood systems in SA dryland in the face of unexpected climate change. **Specific objectives:** To identify sources of food and nutrition for women and children's: To assess the availability and alternative sources of food supply and; to assess the	**Outputs in 6 months:** **(ICARDA-1)** Well-calibrated and validated model (wheat) for opportunities to improve WUE and diversification options (report); **(ICARDA-2)** All data for model calibration and validation collected, model calibrated and validated for control and treatment (SLM practice) (1 dataset); **(ICARDA-3)** Organize 1 field day on cactus targeting 30 farmers (5 women) and 2 local agri. extension staff (report); Introduce cactus as a multi-purpose crop (5 private farmers) under intensive production system (report); **(ICARDA-4)** 2 field days conducted comprising of 50 farmers (10 women) (report); 3 promising variety (Wheat, Chickpea and lentil) selected based on farmers evaluation and data analysis (report); **(ICARDA-5)** Data compilation of green fodder and dry matter yield from 6 validation plots (Farmer vs improved variety)of oats (report); 4 farmers (2 women) trained in	247.899

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		vulnerability of women and children; To analyze climate variability risk analysis based on historical as well as future climate change scenarios and to develop crop model for supporting in planning for improved resilience and sustainable use of natural resources; To quantify livestock feed resources in the agro-pastoral systems towards sustainable livestock production of the smallholders; To validate promising options for system intensification and improved income; To develop option for improved resilience and sustainable use of natural resources; To increase resilience and improved use of marginal lands of agropastoral production system; To develop alternative farm enterprise options for diversification and livelihood security; To ensure gender mainstreaming in farm enterprises and value addition; Capacity development to innovate, improve efficiency and diversify income generation options; To assess the need and current level of value addition at household level and support women for active involvement in value addition and food preservation for improved food availability at household level; To assess the technologies in terms of system compatibility and farm resources and to provide feedback to scientists for improved planning and implementation of project activities; To assess the processes of capacity building and dissemination activities and to provide	informal seed production and processing of oats (report); 2 tons of improved variety of oat produced and distributed in 50 acres (report); **(ICARDA-6)** Identification of locally active NGOs willing to work with the project team (report); 20 master trainers from locally active NGOs trained on 2-3 fruits and vegetables that are available at a low price during the season (report); Production of teaching material (recipes, tutorial videos, etc.) for master trainers to use in conducting training with the local communities (documentation); **(ICARDA-7)** 1 questionnaire on participatory evaluation for 2 technologies tested at farmers field (Questionnaire); 1 questionnaire for participatory evaluation of 1 training on value addition developed (Questionnaire); Data collected for 2 technologies involving 8 farmers (report); **Outputs in 12 months:** **(ICARDA-1)** Calibration and validation of crop model for lentils (report); Setting up and simulation of scenarios for analysis under which crops sustain stable production during an abnormal years (report); **(ICARDA-2)** SWAT model results are out scaled to a larger area (1,300,000 ha) to cover two districts (Chakwal and Attock) of semi-arid Pakistan (report); Hot spots are identified and presented as GIS maps where suitable LM practices should be targeted (maps); Land degradation neutralization recommendation is developed for approx. 100,000 ha area by targeting SLM based on land cover and biophysical characteristics (report); **(ICARDA-3)** 1 blog on the introduction of cactus pear to Pakistan published on CRP DS website; 1 factsheet on the use of cactus as forage for livestock developed in local language; 1 factsheet on silvipasture practices developed in local language; Evaluation (preliminary results) about the impact of grazing on rangeland productivity (report); 1 field day on silvipasture organized for 25 farmers (report); **(ICARDA-4)** 2 farmers trained in informal seed production (report); 2 farmers' enterprises establish seed increase plots of one selected variety each of Wheat (3 acres), Chickpea (2 acres) and Lentil (1 acre) (report); Involvement of 10 rural women in varietal selection encourage females participation in field activities (report); **(ICARDA-5)** 1 improved variety of maize, guar and millet evaluated at 4 farmers' fields (report); Maize silage tested at 2 male	

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		feedback to scientists for improved planning and implementation of project activities; To develop sustainable seed supply mechanism and to promote adoption of modern varieties at farmers field; **Methods:** Narrative-based system analysis; Context-option matrix; On-farm experiment; Household surveys; Adoption analysis; Participatory technology development; Gender analysis **Gender dimension:** To identify sources of food and nutrition for women and children; To assess the availability and alternative sources of food supply and to assess the vulnerability of women and children.	farmers' fields for 3 large animals with each farmer (report); Data collection on fodder yield completed (dataset); Data analysis finalized (report); 4 farmers (2 women) trained in informal fodder seed production and processing (report); **(ICARDA-6)** Training on value addition to locally available 2-3 fruits and vegetables for 400 women of farming communities from 41 villages (10% of 410 villages in Chakwal area) (report); 50 rural women trained in value addition and food preservation of 6 products (report); **(ICARDA-7)** Data collected for 1 training (20 Participants) on participatory evaluation (dataset); data analysis and reporting of results for 1 training on value addition and 2 technologies tested at 8 farmers (dataset); Recommendation for improvement in the technology validation and capacity development activities (report); 2 scientists (1 women) trained in assessment of multidisciplinary on-farm trails (report); **Outputs in 12 months (W3/Bil):** **(ICARDA-26)** Technical report on sustainable intensification of silvopasture systems and potential use of cactus pear in low rainfall regions of India (2015); 2 field days organized on cactus and silvi-pasture management for at least 30 farmers (2015); 1 factsheets (agro-forestry, cactus) developed in 2015 **ICARDA 30)** 6 ha demonstrations for 4 improved forage varieties with high yield potential in Chakwal (2015); Seed production for oats and barley under irrigation implemented in two villages in Chakwal (2015); 5 ha marginal land rehabilitated with cactus and *Leucaena leucocephala* in two villages in Chakwal (2015); 25 ha grazing land under protection at each village in Chakwal owned by a total of 12 families (2015); At least 3 Training on SR VCA for 225 NARS officers in 3 Provinces (KPK, Balochistan, Sindh); 3 training sessions to neighbouring framers on fodder production in Chakwal (2015); Tested feeding strategies disseminated to an additional 1000 livestock keepers (2015); Rangeland improvements and proper utilization of rangeland disseminated to cover additional 20 communities for 500 ha of rangeland (2015); **Outcomes:** **(ICARDA-1)** Policy-makers and farmers provided with two sets of recommendations (one for wheat and one for lentils) for climate	

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			informed decision-making which are taken up for dissemination by the government (report); **(ICARDA-2)** None; **(ICARDA-3)** Feed gap alleviated by 10% due recovery of rangeland from overgrazing (report); **(ICARDA-4)** 2 farmer enterprises start seed production business of Wheat, Chickpea and Lentil (report); Knowledge of 50 farmers (10 women) improved about new varieties of wheat, chickpea and lentil (report); Knowledge and skills of 2 farmers enterprises upgraded in seed production and processing (report); **(ICARDA-5)** Improved green fodder by 20% at participating farmer fields with better quality fodder for animals managed by women in at least 12 HH; **(ICARDA-6)** Master trainers from local NGOs are able to train 400 women from farming communities on value addition to locally available fruits and vegetables (report); **(ICARDA-7)**; Feedback from 20 participating women and youth helped to sensitize partners for encouraging higher women participation in project activities (report);	
5.3	System Research: Rainfed System interventions (testing, piloting and scaling up)	**Location:** **W1&2:** Jodhpur, Barmer and Jaiselmer districts, Rajasthan (India); Bijapur district, Karnataka (India); Anantapur and Kurnool districts, Andhra Pradesh (India); **W3/Bil:** India, Pakistan **General objectives:** Identify the niches and potential for technology adoptions for sustainable intensification and systems resilience for improving agricultural livelihoods; Improve the targeting of technologies and institutional interventions; Enhance biomass productivity & systems resilience through appropriate integration of crops, tree and livestock using improved technologies, climate informed decisions and natural resource management; Strengthen formal and informal institutions & social capital especially	**Outputs in 6 months:** A **(Bioversity-A1)** 1 Baseline survey across all sites in India completed and data analysed (report); **(ICRISAT-A2)** 1Framework for resilience quantification and identifying data sources developed (report); **(ICRISAT-A3)** Derivation and validation of representative HH (report); **(ICRISAT-A4)** Layout of field trials prepared (report); **(ILRI-A5)** 3 sites and 30 HH selected and trials planned (report); **(Bioversity-A6)** Interventions plans for three action villages prepared (report); **(IWMI-A7)** Layout of field 4 trials prepared (report); **(ICRISAT-A8)** Construction of water recharging/harvesting structures (4 farmers) and identify sites for insitu moisture conservation (report); **(ICRISAT-A9)** Participatory plan for implementing farm mechanization (custom hiring) options in place (report); **(ICRISAT-A10)** Training Sessions for 300 farmers (10% women) conducted (report); **(ICRISAT-A11)** IP Meetings conduced (report); B **(ICRISAT-B1)** On participatory implementation plan for 300 trials developed (report); **(ICRISAT-B2)** ~10 water harvesting structures for implementation identified with participatory approach (report); **(IWMI-B3)** ~6 farmers and at least 3 crops identified with participatory approach (report); **(ICRISAT-B4)** NRM and planting/maintaining fodder	2,121.488

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		women and communities and stakeholders convergence for enhancing equitable and sustainable use of natural resources and improve delivery system & value chains and that encourage national partners to develop their problem-solving skills in finding solutions to drylands (innovation platform). **Specific objectives:** Site similarity mapping of all the CRP1.1 action sites using satellite images and climate data; Assess climate variability risk analysis based on historical as well as future climate change scenarios; Understand the gender roles and identify options to improve women's livelihood in small-scale crop-livestock systems; Measure household's resilience and influencing factors and quantify the implications and tradeoff of technology and resource constraints at household level; Evaluate High yielding and dual purpose cultivars (pearl millet, sorghum, pigeon pea, groundnut, cluster bean, moth bean, moong bean, chick pea , etc) and context specific integrated crop management as part of intensification and resilience building; Strengthen blue and green water resources for intensification and shifting to high value agriculture and improved livelihoods. Farm typology specific diversification options with resource conservation, enhanced water use efficiency and high value crops for income and nutrition;	grasses/trees implementation planned with participatory approach (report); **(ICRISAT-B5)** Sowing mechanization options implementation planned with participatory approach (report); **(ICRISAT-B6)** Crop diversification options implementation planned with participatory approach (report); **(ICRISAT-B7)** 8-10 farmers identified for the activity and baseline data collected (report and open access dataset); **(ICRISAT-B8)** ~12 trainings for farmers (~300 farmers; at least 20% women) conducted (report); **(IWMI-B9)** 4 trainings/exposure visits for 200 farmers conducted on improved technologies (report); **(IWMI-B10)** ~50 lead farmers identified with participatory approach (report); **C (ICRISAT-C1)** Data collected for model building (dataset); **(ICRISAT-C2)** A plan and layout of >200 field trials prepared (plan); **(ICRISAT-C3)** rainwater harvesting, indigenous irrigation methods in 40 farmers' fields evaluated and monitored (report); **(ICRISAT-C4)** Report on species monitoring and soil and water conservation intervention in silvi-pasture in participatory mode prepared; **(ICARDA-C4a)** One awareness event organized with local communities (100 participants (50% women); 1 blog on silvipasture posted on CRP DS system website; 1 factsheet developed on silvipasture practices; **(CIP-C5)** Baseline survey, involving gender participation in data collection, to characterize the environment, farming system and social system for introducing potato as sustainable conducted (dataset); **(ICARDA-C6)** Demonstration of improved chickpea and barley varieties; **(CIP-C7)** Focus groups and interviews with men and with young girls (separated) on conducted activities and effects of introducing potato (report); **(Bioversity-C8)** Baseline survey completed and data analysed (open access dataset and report); **(ICRISAT-C9)** Trainings for 350 farmers (100 women) (report); **(CIP-C10)** Farmers' meeting organized in Mansagar to discuss on-farm potato introduction, water saving technologies, capacity building and identification of 30 farmers (report); **(ICRISAT-C11)** 2 SHGs (20 women and 20 men) trained on gum inducing technology and goat value chain (report); **(ICRISAT-C12)** Data collection on 50 HHs (dataset will be made open access after analysis); focus group discussions on CPRs management (report); **(ICRISAT-C13)** Data analysis on shakhpushpi (medicinal plant) cultivation and site selection (report); **(ICRISAT-C14)** site selection and	

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		Assess NRM and institutional options for sustainable management community silvi-pasture systems for enhanced biomass productivity, biodiversity & livestock production; Testing new practices with Micro irrigation in selected sites; Understand if the existing diversity is sufficient to empower farmers for climate change adaptation for house hold food and nutrition security; Plan intervention for genetic base-broadening of farming system for resilience agricultural production; Assessment of potato crop as diversification strategy in dry areas; Develop small khadins as integrated farm systems- water ponding, contour bunding, crops & trees and crop planning of traditional khadins; Gender inclusive capacity strengthening of individuals, community and institutions; Pilot women group based production & marketing of small ruminant and high value commodities; To promote efficient ways of farm operations and reduce drudgery particularly of women; Drivers for sustainable management of common property resources and explore innovative options of collective action and governance; Develop sustained value chain of medicinal plant- Convolvulus pluricaulis in Rajasthan; Assessment of soil profile moisture under khadin systems for optimizing cropping systems and assess impact of landscape level NRM interventions; Strengthening convergence with govt. departments for	sampling plan finalized, observation points identified, soil profile analysis completed (report); **(ICRISAT-C15)** 1 Innovation Platform meeting (>60 stakeholders) organized (report); **(CIP-C16)** Private sector (McCain and PepsiCo) signs contracts with farmers (both women and men) to purchase potatoes (report); **Outputs in 12 months:** A **(Bioversity-A1)** Intervention plans for crop diversification finalised for implementation (report); 4 self-help groups organized with at least 50 women involved (report); **(ICRISAT-A2)** 1 Paper on identified livelihood strategy; 1 Seminar for 50 participants; **(ICRISAT-A3)** Whole farm analysis completed (report); 1 training on whole farm analysis to scientist and Scientific officers for 12 participants (25% women); **(ICRISAT-A4)** Impact of improved cultivars and integrated management practices analysed for rainy season crops and field trials planned for post rainy(report); 200 Farmers (25 women) trained to take climate informed production decisions and best fit practices (report); Options addressing women food preferences, drudgery reduction are promoted for more than 50 women (report); **(ILRI-A5)** 30 trials implemented and tradeoffs analysed (report); Dual crops are chosen by women (report); Results are shared through innovation platform among more than 50 persons (report); **(Bioversity-A6)** Intervention plans at project sites in place and intervention activities initiated for 180 farmers (report); Results shared through innovation platform (report); **(IWMI-A7)** Economics of new interventions/adaptation methods (report); 1 training for more than 50 farmers (report); **(ICRISAT-A8)** Benefits due to moisture availability and intensification analysed (report); 1 seminar on typology building approaches for 30 male and 15 female participants (report); **(ICRISAT-A9)** Small farmers linked farm machinery custom hiring center: Framework for prepared and center initiated(report); **(ICRISAT-A10)** On-farm trainings, 4 field days, 1to1 interactions, and exposure visits for more than 500 farmers (20% women) (report); **(ICRISAT-A11)** 2 workshops of IP and 10 meetings with stakeholders organized and convergence among the major stakeholders facilitated through IP (report);	

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		participatory learning and institutionalizing R for D. **Methods:** Context Similarity mapping and context-option matrix approach; Context-option matrix; On-farm experiment; Household surveys and PRAs; Adoption analysis; Participatory technology development; Gender analysis; Multivariate analysis, economic modelling; Vulnerability analysis, climate analysis; Multi-stakeholders innovation platform; Collective action for common property resource management. **Gender dimension:** Gender disaggregated analysis of data; Understand the gender roles and identify options to improve women's livelihood; Pilot women group based production & marketing of high value commodities; Gender inclusive capacity strengthening of individuals, community and institutions	B **(ICRISAT-B1)** ~200 crop cutting experiments conducted in 300 farmers' fields (with at least 20 women involved), data collected and synthesized (dataset and report); **(ICRISAT-B2)** ~20 water harvesting structures (blue and green water) implemented and additional ~1000 m3 of blue water available for intensification (report); ~20 women farmers enabled to implement intensification and interventions like kitchen gardening/vegetables production, composting (report) **(IWMI-B3)** ~6 farmers' fields equipped with drip/sprinkler irrigation system through participatory approach (report); ~6 women farmers trained on maintenance of drip system and enabled to shift to high value agriculture and to undertake other allied enterprises (report); **(ICRISAT-B4)** 10 farmers' fields and common properties planted with high yielding fodder grasses/trees (report); Women-centric institution established (report); **(ICRISAT-B5)** 100 farmers involved in planning and implementation of mechanization (sowing/interculture/harvesting/threshing) options (report); **(ICRISAT-B6)** 100 farmers involved in kitchen gardens/vegetable production (report); **(ICRISAT-B7)** Hydrological model based on data on aquifer and user's preferences and demands developed (report); Participatory exercise of collective evaluation and planning of crops and groundwater by the user group (report); **(ICRISAT-B8)** ~20 trainings (~500 farmers; at least 20% women) and 4 field days (>200 farmers with at least 20% women) organized for farmers (report); **(IWMI-B9)** None; **(IWMI-B10)** 50 farmers actively participated in the implementation of weather-index insurance for fodder (report); C **(ICRISAT-C1)** Climate variability risk analysis based on the generated data completed (report); Options shared with stakeholders (150 persons) through the innovation platform (report); **(ICRISAT-C2)** 235 on farm trials conducted and data on crop intensification options for 140 khaif trials collected (dataset and report); Farmers (225 farmers, 15% women) trained to take climate informed production decisions and best fit practices (report); Options (dual purpose crops & mechanization) addressing women food preferences, drudgery reduction are promoted for more than 50 women (report); **(ICRISAT-C3)** Irrigation methods	

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			(rainfed agro-horticulture systems) evidences and survivability assessed (report); **(ICRISAT-C4)** Dataset on Biomass productivity, species diversity assessment and livestock linked fodder harvesting and utilization collected (dataset and report); 1 blog posted on the web; 3 village communities (>100 farmers) participate and capacitated on sustainable CPRs management having women as part of a subcommittee for harvesting and sharing (report); **(ICARDA-C4a)** 2 focus group meetings organized; 1 report on ex-ante assessment of silvipasture on private lands submitted; Set of recommendation to improve adoption and dissemination of silvipasture technology made available to stakeholders (report); 50 farmers trained on silvipasture improvement and management (report); **(CIP-C5)** 1 working paper published; **(ICARDA-C6)** Yield advantage with improved varieties and farmers' response to the crops documented (report); At least 100 farmers trained on improved practices and on pre and post-harvesting (women farmers focus); **(CIP-C7)** More than 200 stakeholders, both men and women, (researchers, extension workers, farmers and traders) trained on potato improved production and post-harvest technologies (report); Exposure visit for 30 farmers to potato growing areas (report); **(Bioversity-C8)** Intervention plans for crop diversification finalised (report); At least 4 self-help groups formed with at least 50 women involved (report); **(ICRISAT-C9)** On-farm trainings and exposure visits for 800 farmers (35% women) (report); **(CIP-C10)** Locally adapted varieties and water saving efficiency technologies introduced and demonstrated to improve livelihood of 200 small and marginal farmers, both men and women, at 30 farmer's fields (report); Technical bulletin developed for extension workers (bulletin); **(ICRISAT-C11)** Evidence generated on innovations in goat marketing and enhanced gum production by women for two 2 SHGs (report); **(ICRISAT-C12)** Data analysed on drivers of management of CPRs and khadin system (report and news story); Farmers facilitated to form 1 collective action group to manage khadin (report); Women increased participation in operational management of common silvi-pastures (report); **(ICRISAT-C13)** Farmers linked to industry in medicinal plans value chain (report); At least 15 women trained on medicinal plant cultivation (report); **(ICRISAT-C14)** Soil profile moisture and impact parameters produced monitored in khadins	

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			(report); 1 dataset shared with scientists and stakeholders through IP meetings (report); **(ICRISAT-C15)** 2 workshops and 10 meetings (>100 stakeholders) organized for the Innovation Platform with increased participation of women (report); **(CIP-C16)** Private sectors, policy makers and stakeholders meet (workshop in Jodhpur) and shared their innovative ideas to implement farmer's potato value chain and improve framer's income (report); **Outputs in 12 months (W3/Bil):** **(Bioversity-1)** Assessment and deployment of agro-biodiversity for reducing vulnerability and promoting sustainable intensification across dryland systems of India (2015); **(ICARDA 28)** 8 Farmers day (500 farmers attended) organized (2015); 1 professional training for 20 participants organized (2015); Sets of informative extension new technologies disseminated in English, Urdu, Pushto and Sindhi languages (2015); 3 professionals trainings for 70 farmers and agriculture service providers on various technologies related to soil fertility and health (2015); 12 field days organized for 800 farmers (2015); 80 women trained 6 training courses organized for 80 women (2015); Websites, radio or video segments, or text messages developed (2015); **(ICARDA 29)** More than 25 promising water and land management practices and technologies established and maintained on-the-ground at the partner agricultural research institutes, stations, and associated farmer fields in a manner that enables dissemination through training and information visits by farmers and extension agents, business people and academics, as well as enables dissemination through other means (2015); Websites, radio or video segments, or text messages with useful information on the demonstrated practices and technologies (2015); Report of discussions and interviews with farmers, extension agents, and others to find out which practices and technologies they find most attractive and why (2015); 1 data and analyses on selected practices and technologies (2015); 3 well trained professionals for each of 10 partner institutes (2015); 2,000 trained professionals from various departments (2015); 6,000 farmers trained on various water management technologies (2015); At least 25 professional training	

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			courses targeting 600 professionals (2015); At least 40 farmer days targeting 2000 farmers (2015); Sets of informative extension materials in hard-copy and electronic form on the demonstrated practices and technologies (2015); 145 women trained (2015); **(ICARDA 30)** Rapid Small ruminants value chain assessment in Punjab completed (2015); 3 reports: one each for the low and medium rainfall sites in Chakwal, and for the desert site in Balhawalpur; 2 multi-stakeholders workshops on VCA findings in Chakwal and Bahawalpur with about 60 stakeholders and 3 Site specific lists of prioritized best 2 interventions to enhance SR productivity tested with at least 10 farmers at one site in Chakwal and 2 sites in Bahawalpur (2015); 2 training sessions on rangeland management for NARS and extension agents (one in Punjab and one in Balochistan); At least 3 sets of extension material prepared for livestock extension workers on different aspects of SR management practices (2015); **(ICARDA – 31)** 8 village seed hubs developed including 25% women (2015); **(ICARDA – 32)** 1 feasibility study to identify new projects (2015); **Outcomes:** **A (Bioversity-A1)** At least 50 farmers agreed to maintain/use/increase diversity of indigenous crops/tree species and to become members of Farmers Experimental Network (report); **(ICRISAT-A2)** Participating HHs (300 farmers) adopt the processes, methods for enhancing resilience (report); **(ICRISAT-A3)** None; **(ICRISAT-A4)** Local extension and 300 farmers choose options for enhancing resilience and intensification (report); **(ILRI-A5)** At least 50 farmers choose evaluated options for enhanced resilience (report); **(Bioversity-A6)** At least 180 farmers maintain and use an increased availability to diversity of indigenous crops/tree species which enhances adaptation, resilience and improves income generation opportunities; **(IWMI-A7)** NARS adopts the processes, methods and evaluated options for enhanced resilience of production system in a water scarce environment (report); At least 40 women capacity strengthened (report); **(ICRISAT-A8)** At least 50 participating farmers adopts the processes, methods and evaluated diversification options for enhanced resilience under water scarce rainfed environment (report); **(ICRISAT-A9)** Enhanced efficiency	

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			(+100%) of operations and reduced (halved) drudgery particularly for women for participating HHs (report); Awareness and skill development in efficient farm mechanization through hands on training and exposure visit (report); **(ICRISAT-A10)** Farmers (at least 100 women) capacity strengthened results into productivity enhancement (10-15%) for participating HHs; **(ICRISAT-A11)** Platform is used for structuring initiatives and convergence among stakeholders (report); **B (ICRISAT-B1**) Enhanced crop yields by >20% in participating 300 farmers' fields, and at least 300 farmers improved their skills in soil fertility and improved varieties management; At least 300 women farmers (indirectly) aware of sustainable crop management (report); **(ICRISAT-B2)** At least 20 farmers improved their skills in harvesting rainwater for intensification and livelihoods improvement (report); **(IWMI-B3)** Water use efficiency enhanced by > 25% (report); At least 6 farmers improved their capacity in implementing drip/sprinkler irrigation technology (report); **(ICRISAT-B4)** Enhanced fodder productivity in participating farmers' field by 0.5 t/ha (report); Awareness and skills in common property natural resource management improved for CPRs at village level (Report); At least 10 farmers improved their capacity in growing high yielding fodder grasses/trees (report); Strengthened livestock related enterprises thru enhanced fodder which are in the domain of women (report); **(ICRISAT-B5)** Enhanced efficiency of operations and reduced drudgery (30% time saving) particularly for women (report); At least 100 farmers improved their capacity in in efficient farm mechanization (report); **(ICRISAT-B6)** Improved nutrition for participating farmers including increased source of income for women (report); At least 100 women farmers improved their skills in successfully diversifying to high value crops (report); ~100 trained women farmers promoted crop diversification (report); **(ICRISAT-B7)** User group developed rules for conservation and sharing of water (report); At least 10 farmers improved their skills in efficient resource use management (report); **(ICRISAT-B8)** ~700 farmers (at least 20% women) improve their awareness and skills on management techniques (report); At least 100 farmers (at least 10% women) adopt improved management	

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			techniques; **(IWMI-B9)** Enhanced awareness and skills of farmers and stakeholders on improved technologies (~200; at least 10% women); **(IWMI-B10)** 50 farmers (10% women) awareness increased on risk aversion methods and secured from losses through vagaries of weather (report); C **(ICRISAT-C1)** Participating farmers adopts Climate informed decisions (report); **(ICRISAT-C2)** Enhanced crop yields by >15% in participating farmers' fields (300), and at least 300 farmers improved their skills in soil fertility and improved varieties management; At least 200 women farmers (indirectly) aware of sustainable crop management (report); **(ICRISAT-C3)** 1000 HHs adopts the processes, methods and evaluated diversification options for enhanced resilience under water scarce rainfed environment (indigenous technologies and modern science integrated); 20 women adopt agri-horti kitchen gardens for nutrition enhancing their role in HH systems diversification (report); **(ICRISAT-C4)** Community have hands on practice and change their perception of NRM to improve productivity & ecosystem services for sustainable management of common silvi-pasture, which has potential of upscaling to more than 800,000 ha area in arid Western Rajasthan (report); **(ICARDA-C4a)** Targeted women gain more knowledge and awareness about potential positive impact of silvipasture on their livelihood (report); **(CIP-C5)** 30 farmers introduce potatoes in the farming system (report); **(ICARDA-C6)** At least 50 direct farmers (including women) will follow recommended practices and other farmers (indirect) will follow and adopt crop diversification approach (report); **(CIP-C7)** None; **(Bioversity-C8)** At least 100 farmers agreed to maintain and use an increased availability to diversity of indigenous crops/tree species which enhances adaptation, resilience and improves income generation opportunities and form one Farmers Experimental Network (report); **(ICRISAT-C9)** Capacity strengthening on improved technologies and institutions results into productivity enhancement by 15-20% by the 300 participating HHs/Women (report); **(CIP-C10)** Water conservation technologies for potato crop introduced in the system enhanced 20% farmer's income and livelihood (report); **(ICRISAT-C11)** At least 30 women and 100 men farmers	

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)
			benefit from improved livestock value chain and agro-forestry (report); 40 men and empowered women used improved system of marketing of small ruminants (report); **(ICRISAT-C12)** Stakeholders in panchayats adopt the proposed strategy for sustainable management of common property resources (report); **(ICRISAT-C13)** At least 100 farmers adopt medicinal plant (shankhpushpi) cultivation and value chain (report); **(ICRISAT-C14)** None; **(ICRISAT-C15)** Platform is used for developing structured initiatives and convergence among stakeholders; **(CIP-C16)** Income of small and marginal farmers increased by 20% through introducing potato in the farming system (report); **Outcomes (W3/Bil):** **(ICRISAT – 1)** Improved productivity and incomes by >14% for ~2.5 million farming families in Karnataka, increasing 10% women empowerment, through implementation of participatory trials (2015); **(ICARDA 28)** 120 farmers adopted technology based on demonstrations and disseminations (2015);	
5.4	System Research: Irrigated crop System interventions (testing, piloting and scaling up)	**Location:** **W3/Bil:** India, Pakistan **General objective:** To improve food productivity, resources (water and mineral nutrients) use efficiency, social acceptance and transferability of improved technologies, thereby enhancing the sustainability of irrigated farming and livelihood systems in SA dryland. **Specific objectives:** To identify constraints and opportunities for agriculture improvement and water management study regions; to quantification of rice fallows for agricultural intensification and	**Outputs in 12 months (W3/Bil):** **(Bioversity-1)** Assessment and deployment of potato in the system for promoting sustainable intensification across dryland systems of India (2015); **(ICARDA 27)** Well-calibrated crop models for 6 different popular crops (2015); **(ICARDA 28)** 11 Farmers day for 725 farmers organized (2015); 2 professional training for 30 participants organized (2015); Sets of informative extension new technologies will be disseminated in English, Urdu, Pushto and Sindhi languages (2015); 4 professionals training for 119 farmers and agriculture service providers organized on various technologies related to soil fertility and health (2015); 1200 farmers trained through 19 field days (2015); 120 women trained through 6 training courses (2015); Websites, radio or video segments, or text messages developed in 2015; **(ICARDA 29)** More than 15 promising water and land management practices and technologies established and maintained on-the-ground at the partner agricultural research institutes, stations, and associated farmer fields in a manner that enables dissemination through training and information visits by farmers and extension agents, business people and academics, as well	1,109.248

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)
		diversification in India; to improve water and land productivity through better water management, appropriate cropping patterns and optimal cultural practices; to control salinity and water-logging through new options for drainage and improved water management; to increase surface irrigation efficiency through better land preparation and improved system parameters and design; to develop high yielding early bulking abiotic and biotic resistant varieties; to introduce farmer based sustainable seed system in plateau region, to intensify potato in cereal based system in North- Bengal to improve livelihood of farmers; To improve human capacity of local researchers and technicians; to develop and disseminate agricultural extension messages, information, improved materials and innovative tools to be used in Punjab, Sindh and elsewhere in Pakistan for building SOM, improving soil health, applying the "4Rs" (right type of fertilizer applied in the right amount, at the right time and in the right place) and balanced fertilizer application; To mainstream the conservation and use of agricultural biodiversity for resilient agriculture and sustainable production to improve livelihood of small and marginal farmers under rain-fed conditions. **Methods:** Crop system modelling for yield gap analysis and water use efficiency	as enables dissemination through other means (2015); Websites, radio or video segments, or text messages with useful information on the demonstrated practices and technologies developed (2015); Report of discussions and interviews with farmers, extension agents, and others to find out which practices and technologies they find most attractive and why (2015); 1 data analysis on selected practices and technologies (2015); 2 well trained professionals for each of 10 partner institutes (2015); 1,000 trained professionals from various departments (2015); 4,000 farmers trained on various water management technologies (2015); At least 15 professional training courses targeting 400 professionals (2015); At least 35 farmer days targeting 2000 farmers (2015); Sets of informative extension materials in hard-copy and electronic; 95 women trained in 2015; **(ICARDA 30)** 1 report for the irrigated site in Balhawalpur, 1 site-specific list of prioritized best bet interventions for the Punjab target sites; 1 intervention to enhance SR productivity tested with at least 10 farmers at 1 site in Chakwal or Bahawalpur; **(ICARDA – 32)** 1 feasibility study to identify new projects (2015); **(ICARDA – 33)** Quantification of the rice fallows for crop intensification and diversification (2015); At least five key maps and geodatabase on the dynamics of the rice areas, fallows, intensity and duration (2015); 1 Technical Report rice fallow for crop diversification and intensification (2015); 1 international conferences/proceedings (2015); ; Demonstrated the Geoinformatics technology for the agricultural intervention (2015); **(CIP-1)** Assessment and deployment of potato in the system for promoting sustainable intensification across dryland systems of India (2015); **Outcomes (W3/Bil):** **(ICRISAT – 1)** Improved productivity and incomes by >6% for ~0.9 million farming families in Karnataka, increasing 10% women empowerment, through implementation of participatory trials (2015); **(ICARDA 28)** 180 farmers adopted technology based on demonstrated and dissemination (2015); **(ICARDA 29)** Partner institutions incorporate five selected practices into their regular demonstration activities (2015); **(ICARDA – 33)** Geoinformatics capacity and geospatial database of the stakeholders strengthened through data and	

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)
		assessment; similarity mapping for outscaling; on-farm trails, demonstrations and trainings; participatory appraisals; value chain analysis; analyses relationship between feeding systems and crop/livestock production systems; innovation systems (platforms) analysis and development; household livelihood system analysis and modeling; spatio-temporal analysis for identifying hotspots and their clusters; geoinformatic demonstrations and hand-on trainings. **Gender dimension:** Targeted approaches to include women in knowledge creation and exchange processes (e.g. on seeds, water, and on-farm biodiversity management), and allow them to benefit from their involvement in agricultural production value chains (e.g. 'women crops & livestock') socially and economically.	information exchange and technical back stopping (2015);	

Table 3. South Asia Activities by Action Sites

I. Chakwal (Pakistan)

#	Short Title	Full Title	CG Center	Activity Leader	Other Scientists (CG)	Discovery	Proof of Concept	Pilot	Scaling Up	1	2	3	4	5	6	Budget
1	Modelling climate variability risk analysis	Modelling climate variability risk analysis (WUE&NUE) for cropping systems scenarios using calibrated and validated crop models for major cereal crops. Regional Cluster: Baseline characterization of systems function and structure	ICARDA	v.nangia@cgiar.org	None		100%			40%	0%	0%	10%	0%	50%	3,600
2	Optimizing the micro watersheds for runoff harvesting	Optimizing the micro watersheds for runoff harvesting, resource conservation at various slopes gradients and different vegetative covers using SWAT modelling. Regional Cluster: Identification, demonstration and validation of promising technologies and diversification options for enhanced productivity & livelihood security.	ICARDA	v.nangia@cgiar.org	None			100%		40%	0%	0%	20%	0%	40%	12,980
3	Assessment and dissemination of agro-forestry practices	Assessment and dissemination of agro-forestry and cactus (Opuntia ficus indica) practices. Regional Cluster: Identification, demonstration and validation of promising technologies and diversification options for enhanced productivity & livelihood security.	ICARDA	m.louhaichi@cgiar.org	K.Clifton@Cgiar.Org	50%		50%		30%	0%	0%	60%	10%	0%	46,680

#	Short Title	Full Title	CG Center	Activity Leader	Other Scientists (CG)	Discovery	Proof of Concept	Pilot	Scaling Up	1	2	3	4	5	6	Budget
4	Evaluation and identification of promising varieties by farmers	Evaluation and identification of promising wheat, chickpea and lentil NARS developed varieties by farmers before crop maturity. Regional Cluster: Identification, demonstration and validation of promising technologies and diversification options for enhanced productivity & livelihood security.	ICARDA	a.sarker@cgiar.org	None		100%			40%	40%	0%	20%	0%	0%	24,840
5	Evaluation , demonstration and dissemination of fodder and feed intervention	Evaluation, demonstration and dissemination of fodder and feed intervention. Regional Cluster: Identification, demonstration and validation of promising technologies and diversification options for enhanced productivity & livelihood security.	ICARDA	a.majid@cgiar.org	None		100%			40%	0%	0%	0%	30%	30%	43,420
6	CD of women of farming community	Capacity development of women of farming community for value-addition to locally produced fruits and vegetables. Regional Cluster: Gender inclusive capacity strengthening of individuals, community and institutions on knowledge gaps and promising technologies.	ICARDA	v.nangia@cgiar.org	None			100%		0%	0%	10%	0%	60%	30%	12,960
7	Assessment and feedback on technology validation and CD activities	Assessment and feedback on technology validation and capacity development activities. Regional Cluster: Monitoring and evaluation of project interventions and tradeoffs.	ICARDA	b.dhehibi@cgiar.org	None		100%			20%	0%	0%	0%	40%	40%	29,520
TOTAL																174,000

II. Bijapur District, Karnataka (A)

#	Short Title	Full Title	CG Center	Activity Leader	Other Scientists (CG)	Discovery	Proof of Concept	Pilot	Scaling Up	1	2	3	4	5	6	Budget
1	Extent and distribution of crops/tree species genetic diversity	Extent and distribution of genetic diversity of crops and tree species determined and factors that shape farmers decisions on diversity maintenance, including challenges presented by climate change documented.	Bioversity	p.mathur@cgiar.org	m.bellon@cgiar.org		50%	50%		20%	0%	0%	50%	15%	15%	13,608
2	Quantification of resilience and livelihood strategies	Quantification of farm-household level resilience and livelihood strategies	ICRISAT	t.ramilan@cgiar.org	k.shalander@cgiar.org; a.whitbread@cgiar.org	50%	50%			40%	30%	30%	0%	0%	0%	5,346
3	Bio economic Modelling of farm HH	Bio economic Modelling of farm households	ICRISAT	t.ramilan@cgiar.org	k.shalander@cgiar.org; a.whitbread@cgiar.org	50%	50%			20%	30%	0%	0%	50%	0%	6,319
4	Cropping systems intensification and resilience building	Evaluate high yielding and dual purpose crops/ varieties/hybrid, integrated crop management as part of matrices of intensification and resilience building (Maize, chick pea, pigeon pea)	ICRISAT	t.ramilan@cgiar.org	k.shalander@cgiar.org; a.whitbread@cgiar.org		30%	70%		40%	0%	0%	35%	15%	10%	21,384

#	Short Title	Full Title	CG Center	Activity Leader	Other Scientists (CG)	Discovery	Proof of Concept	Pilot	Scaling Up	1	2	3	4	5	6	Budget
5	Testing and dissemination of improved dual purpose crops	Testing and dissemination of improved dual purpose crops and possible trade offs in crop residue use between feeding and soil improvements	ILRI	m.blummel@CGIAR.ORG	None		50%	50%		40 %	0%	30 %	0%	20 %	10%	34,279
6	Identification of new and traditional crop genetic diversity	Identification of new and traditional crop genetic diversity and its improved access that meets farmers' needs and is able to enhance ecosystem functions, resilience and adaptation to climate change	Bioversity	p.mathur@cgiar.org	m.bellon@cgiar.org			100%		20 %	0%	40 %	0%	20 %	20%	4,860
7	Testing new concepts/practices on micro irrigation	Testing new concepts/practices on micro irrigation water scheduling and fertigation in selected locations	IMWI	K.Krishnareddy@cgiar.org	k.palanisami@cgiar.org;		70%	30%		0%	40 %	0%	40 %	10 %	10%	18,564
8	Harnessing green/blue water intensification/diversification options	Harnessing green water and blue water and Farm typology specific intensification and diversification options (like crops for Rainy season fallows, horticulture, etc)	ICRISAT	k.shalander@cgiar.org	a.whitbread@cgiar.org		70%	30%		30 %	30 %	0%	30 %	0 %	10%	12,150
9	Participatory farm mechanization for small farmers	Participatory farm mechanization for small farmers for resilience building and drudgery reduction	ICRISAT	k.shalander@cgiar.org;	t.ramilan@cgiar.org; csaicrpdab@gmail.com		50%	50%		30 %	20 %	0%	25 %	25 %	0%	11,178

#	Short Title	Full Title	CG Center	Activity Leader	Other Scientists (CG)	Discovery	Proof of Concept	Pilot	Scaling Up	1	2	3	4	5	6	Budget
10	Gender inclusive capacity strengthening	Gender inclusive capacity strengthening of individuals, community and institutions on knowledge gaps and promising technologies	ICRISAT	k.shalander@cgiar.org;	t.ramilan@cgiar.org; csaicrpdab@gmail.com				100%	30 %	0%	0%	0%	30 %	40%	11,275
11	Innovation Platforms	Strengthening innovation platform and convergence with govt. departments	ICRISAT	k.shalander@cgiar.org;	t.ramilan@cgiar.org csaicrpdab@gmail.com	50%	50%			10 %	10 %	0%	20 %	10 %	50%	10,012
TOTAL																148,975

III. Anantapur and Kurnool Districts, Andhra Pradesh (B)

#	Short Title	Full Title	CG Center	Activity Leader	Other Scientists (CG)	Discovery	Proof of Concept	Pilot	Scaling Up	1	2	3	4	5	6	Budget
1	Cropping systems intensification and resilience building	Participatory demonstrations and evaluation of soil test-based nutrient management, improved varieties and good agronomic practices/on farm recycling	ICRISAT	g.chander@cgiar.org	s.wani@cgiar.org; A.Whitbread@cgiar.org		50%	50%		30 %	30 %	0%	40 %	0 %	0%	27,600
2	Conservation of blue/green water resources for intensification	Participatory conservation of blue and green water resources and efficient use for intensification and livelihood improvement	ICRISAT	g.chander@cgiar.org	s.wani@cgiar.org; A.Whitbread@cgiar.org		50%	50%		0%	20 %	30%	50 %	0 %	0%	14,400
3	Piloting drip irrigation with selected crops under PPP mode	Piloting drip irrigation with selected crops in Kurlapalli and Mallapuram (Anantapur district) along with establishing MI system repair and maintenance at action sites through PPP mode	IWMI	K.Krishnareddy@cgiar.org	None			100%		0%	30 %	0%	40 %	0 %	30 %	13,500
4	Assessing fodder resources development	Fodder resources development through sustainable management of common pastures and on-farm evaluation of improved fodder crops, grasses and fodder trees	ICRISAT	g.chander@cgiar.org	s.wani@cgiar.org; A.Whitbread@cgiar.org		50%	50%		30 %	0 %	0%	40 %	30 %	0%	4,800

#	Short Title	Full Title	CG Center	Activity Leader	Other Scientists (CG)	Discovery	Proof of Concept	Pilot	Scaling Up	1	2	3	4	5	6	Budget
5	Small farm mechanization	Small farm mechanization for timely economic operations and reducing drudgery	ICRISAT	g.chander@cgiar.org	adrrarsnandyal@gmail.com; sahadevardd@gmail.com		50%	50%		0%	0 %	0%	40 %	30 %	30 %	1,080
6	Diversification for income and nutrition	To promote and evaluate crop/horticulture diversification for improved livelihoods and nutrition	ICRISAT	g.chander@cgiar.org	s.wani@cgiar.org; a.whitbread@cgiar.org		50%	50%		30 %	30 %	0%	0%	40 %	0%	8,800
7	Fostering institutions for water conservation and management	Fostering the evolution of institutions for water conservation and management to ensure irrigation at critical stages of crop growth through scientific information on ecological dynamics	ICRISAT	s.srigiri@cgiar.org	a.whitbread@cgiar.org; g.chander@cgiar.org		100%			0%	20 %	0%	50 %	0 %	30 %	3,960
8	capacity strengthening on improved dryland technologies	Trainings, field days, exposure visits of farmer/stakeholders for creating awareness and skill development about improved dryland technologies	ICRISAT	g.chander@cgiar.org	s.wani@cgiar.org; a.whitbread@cgiar.org			50%	50%	0%	0 %	0%	0%	0 %	10 0%	10,020
9	Capacity Building on drip irrigation	Capacity Building on drip irrigation for 200 farmers in Kurlapalli and Mallapuram (Anantapur district)	IWMI	k.krishnareddy@cgiar.org	None			100%		0%	0 %	0%	0%	0 %	10 0%	12,000
10	Weather based crop insurance for livestock fodder	Weather based crop insurance for livestock fodder with 50 farmers in V Bonthirala and Yerragundtla (Kurnool district)	IWMI	k.krishnareddy@cgiar.org	None		100%			50 %	20 %	0%	0%	0 %	30 %	5,832

#	Short Title	Full Title	CG Center	Activity Leader	Other Scientists (CG)	Discovery	Proof of Concept	Pilot	Scaling Up	1	2	3	4	5	6	Budget
TOTAL																101,992

IV. Jodhpur, Barmer and Jaisalmer Districts, Rajasthan (C)

#	Short Title	Full Title	CG Center	Activity Leader	Other Scientists (CG)	Discovery	Proof of Concept	Pilot	Scaling Up	1	2	3	4	5	6	Budget
1	Climate variability risk analysis	Climate variability risk analysis (WUE & NUE) for cropping systems based on historical as well as future climate change scenarios	ICRISAT	a.whitbread@cgiar.org	v.nageswararao@cgiar.org;		100%			50 %	30 %	0%	0%	0%	20 %	9,234
2	Cropping systems intensification and resilience building	Intensification and resilience building: Evaluate High yielding and dual purpose crops/ varieties, integrated crop management (pearl millet, cluster bean, moth bean, moong bean, chick pea, mustard, cumin, lentil, etc)	ICRISAT	k.shalander@cgiar.org	g.chander@cgiar.org; a.whitbread@cgiar.org		50%	50%		40 %	30 %	20 %	0%	10 %	0%	48,000
3	Farm typology specific intensification and diversification	Improving land and water productivity in arid regions for sustainable livelihoods: Farm typology specific intensification and diversification options including agro-silvi-horticulture with traditional rainwater harvesting systems (tanka & khadin)	ICRISAT	k.shalander@cgiar.org	a.whitbread@cgiar.org; Prakash@gravis.org.in		100%			40 %	25 %	0%	25 %	10 %	0%	14,094
4	Assessment and dissemination of sustainable silvi-pasture practices	NRM and institutional options for sustainable management of silvipasture systems on community and private lands for enhanced eco-system services	ICRISAT	k.shalander@cgiar.org	a.whitbread@cgiar.org		50%	50%		35 %	0%	0%	40 %	10 %	15 %	13,607
4a			ICARDA	M.Louhaichi@cgiar.org	B.Dhehibi@cgiar.org; K.Clifton@cgiar.org		50%	50%		30 %			60 %	10 %		16,299

#	Short Title	Full Title	CG Center	Activity Leader	Other Scientists (CG)	Discovery	Proof of Concept	Pilot	Scaling Up	1	2	3	4	5	6	Budget
5	Characterizing farming system for potato introduction	Characterizing farming system, natural resources and social system in the context of introducing potato as high value crop in the dryland agro-ecology (2015)	CIP	m.kadian@cgiar.org	s.arya@cgiar.org; srawalcpri@gmail.com	60%	40%			20 %	40 %	0%	20 %	20 %	0%	15,000
6	Promising cultivars of barley and Chickpea for enhanced food security	Demonstration of promising barley and Kabuli chickpea varieties/technologies to enhance coping mechanism and achieving food security	ICARDA	a.sarker@cgiar.org	a.dogra@cgiar.org; B.Dhehibi@cgiar.org				100%	15 %	30 %	30 %	0%	25 %	0%	10,206
7	Gender specific impact of introducing potato	Gender role in introducing potato in the system, best production and marketing strategies and water saving technologies in improving HH income.	CIP	m.kadian@cgiar.org	s.arya@cgiar.org; srawalcpri@gmail.com	20%	40%	40%		0 %	10 %	10 %	0%	30 %	50 %	30,000
8	Identification of new and traditional crop genetic diversity	Identification of new and traditional crop genetic diversity and its improved access that meets farmers' needs and is able to enhance ecosystem functions, resilience and adaptation to climate change	Bioversity	p.mathur@cgiar.org	m.bellon@cgiar.org; Prakash@gravis.org.in				100%	40 %	0%	30 %	0%	30 %	0%	18,468
9	Gender inclusive capacity strengthening	Gender inclusive capacity strengthening of individuals, community and institutions on knowledge gaps and promising technologies	ICRISAT	k.shalander@cgiar.org	a.whitbread@cgiar.org;; a.dogra @cgiar.org; t.ramilan@cgiar.org; drjctewari@gmail.com; p_pagaria@				100%	0 %	0%	0%	0%	40 %	60 %	10,692

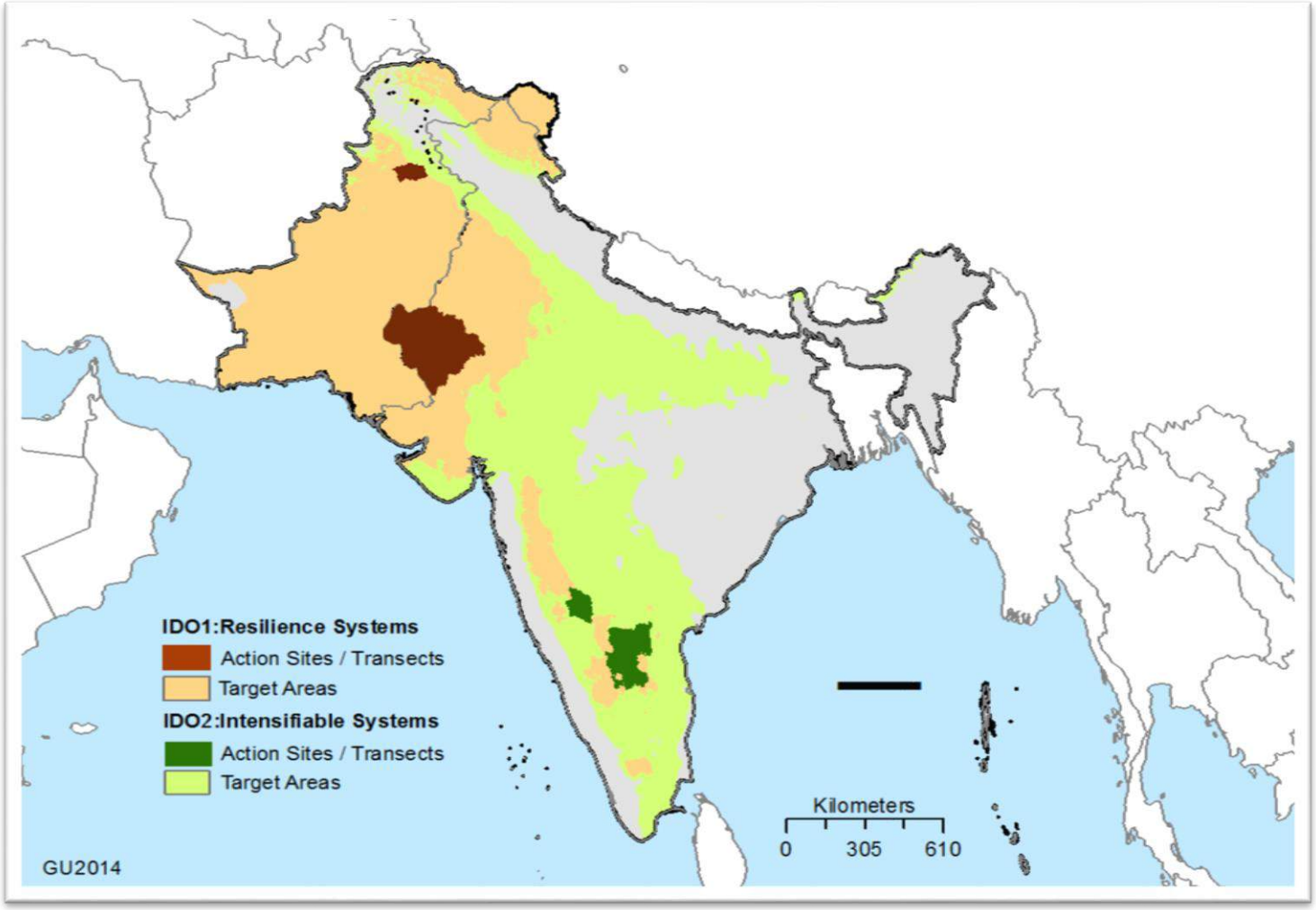
#	Short Title	Full Title	CG Center	Activity Leader	Other Scientists (CG)	Discovery	Proof of Concept	Pilot	Scaling Up	1	2	3	4	5	6	Budget
					yahoo.com											
10	Innovative technologies for cultivating potato in dryland system	Water saving technologies for potato cultivation through efficient irrigation systems and mechanization in Jodhpur and Jaisalmer (2015-2016)	CIP	m.kadian@cgiar.org	s.arya@cgiar.org; srawalcpri@gmail.com		40%	40%	20%	10 %	40 %	0%	20 %	20 %	10 %	65,000
11	Women linked innovations for strengthening value chains	Women linked innovations for strengthening small ruminants and agro-forestry value chains	ICRISAT	k.shalander@cgiar.org	prakash@gravis.org.in		30%	70%		20 %	0%	0%	10 %	40 %	30 %	9,720
12	Analyze drivers for sustainable management of CPRs	Analyze drivers for sustainable management of CPRs- khadins & common pasture. Assess and prototype innovative options of collective action and governance of CPRs (2015-16)	ICRISAT	k.shalander@cgiar.org	a.whitbread@cgiar.org; t.ramilan@cgiar.org; prakash@gravis.org.in; drjctewari@gmail.com	100%				30 %	0%	0%	30 %	0%	40 %	8,748
13	Medicinal plant value chain in arid region	Building on 2014 initiative, establish and strengthen the value chain of medicinal plant in Barmer	ICRISAT	k.shalander@cgiar.org	p_pagaria@yahoo.com		50%	50%		30 %	30 %	0%	0%	10 %	30 %	8,748

#	Short Title	Full Title	CG Center	Activity Leader	Other Scientists (CG)	Discovery	Proof of Concept	Pilot	Scaling Up	1	2	3	4	5	6	Budget
14	Temporal assessment of soil profile moisture under runoff farming systems	Temporal assessment of soil profile moisture under traditional khadin systems in Jaisalmer for modelling optimal cropping systems and assess impact of landscape level NRM interventions in Jodhpur	ICRISAT	k.shalander@cgiar.org	npanwar_soil@yahoo.com; a.whitbread@cgiar.org; drjctewari@gmail.com	100%				30 %	10 %	0%	50 %	0%	10 %	14,094
15	Innovation Platforms	Strengthening innovation platform and convergence with govt. departments	ICRISAT	k.shalander@cgiar.org	a.whitbread@cgiar.org; drjctewari@gmail.com; t.ramilan@cgiar.org; prakash@gravis.org.in		50%	50%		10 %	0%	0%	20 %	10 %	60 %	6,318
16	Developing potato value chain	Developing potato value chain by bringing different actors (public, private, NGO) at single platform.	CIP	m.kadian@cgiar.org	s.arya@cgiar.org; srawalcpri@gmail.com	40%	60%			0 %	50 %	10 %	10 %	20 %	10 %	15,550
TOTAL																**313,778**

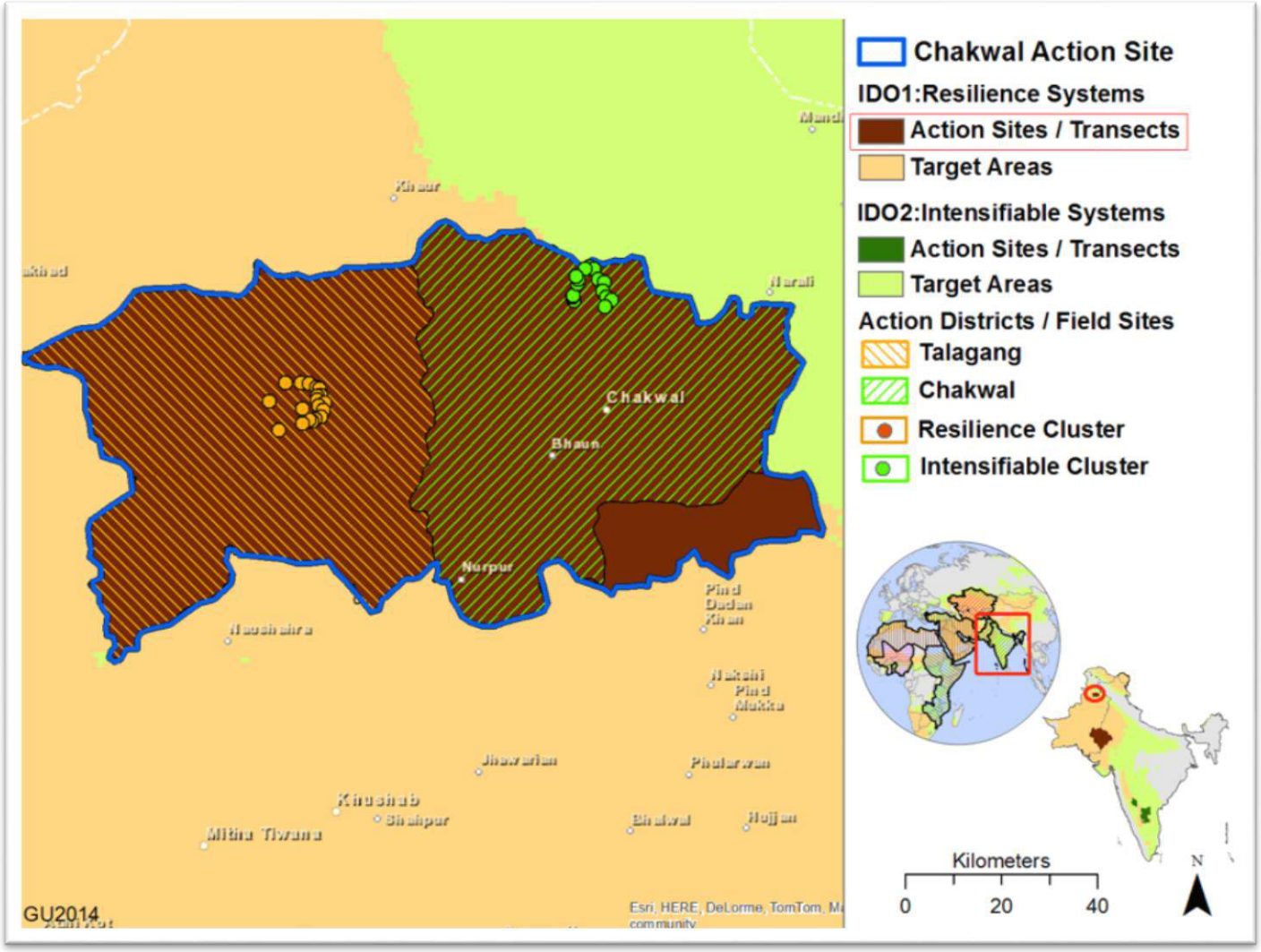
Table 4. South Asia - Bilateral/W3 Projects X Cluster of Activities

ID	Lead Center	Project or Activity Title	From	To	Email	SA %	Countries % (equal)	2015 Budget to DS (MUSD)	Agro-Pastoral %	Rainfed %	Irrigated %
1	CIP	Introducing potato in the farming to improve livelihoods of farmers in dry-land agro-ecology of Rajasthan	Apr-13	Mar-16	m.kadian@cgiar.org	100	India	0.044000	0	30	70
1	Bioversity	Use of conservation and agrobioversity for increased agricultural sustainability	Apr-13	Mar-16	p.mathur@cgiar.org	100	India	0.060000	0	80	20
1	ICRISAT	Increasing agricultural productivity and incomes through bridging yield gaps with science-led interventions in Karnataka (Bhuchetana)	2013	2016	s.wani@cgiar.org	100	India	0.684000	0	70	30
26	ICARDA	Improving Small Ruminant Productivity and Integrating Crop-Livestock System and Rangeland Management	Jan-10	Mar-16	m.louhaichi@cgiar.org	100	India	0.047223	100	0	0
27	ICARDA	Water Productivity India	May-11	Mar-15	v.nangia@cgiar.org	100	India	0.059491	0	0	100
28	ICARDA	Improving soil fertility and soil health in Pakistan through demonstration and dissemination of best management practices for farmers	Dec-13	May-16	a.majid@cgiar.org	100	Pakistan	0.811665	0	40	60
29	ICARDA	Watershed Rehabilitation and Irrigation Improvement: Demonstrating in Pakistan and disseminating the Best Technologies to Help Rural Farmers	Sep-11	Sep-15	a.majid@cgiar.org	100	Pakistan	0.490986	0	60	40
30	ICARDA	AIP Pakistan- Development of Small Ruminant Value Chains and Feed Resources & Rangeland assessment and management	Mar-13	Sep-17	b.rischkowsky@cgiar.org	100	Pakistan	0.266758	10	65	25
31	ICARDA	Increasing Food Legume production by small farmers to strengthen food and nutrition security through adoption of improved technologies and governance within south-south cooperation	Feb-13	Dec-17	a.sarker@cgiar.org	100	India	0.152689	0	100	0
32	ICARDA	Proposed Jalalpur Irrigation Project, Pakistan. Project Preparatory Technical Assistance	May-14	May-15	a.majid@cgiar.org	100	Pakistan	0.102005	0	70	30
33	ICARDA	Quantification of rice fallows for agricultural intensification and diversification in India	Apr-14	Mar-15	c.biradar@cgiar.org	100	India	0.021073	0	0	100

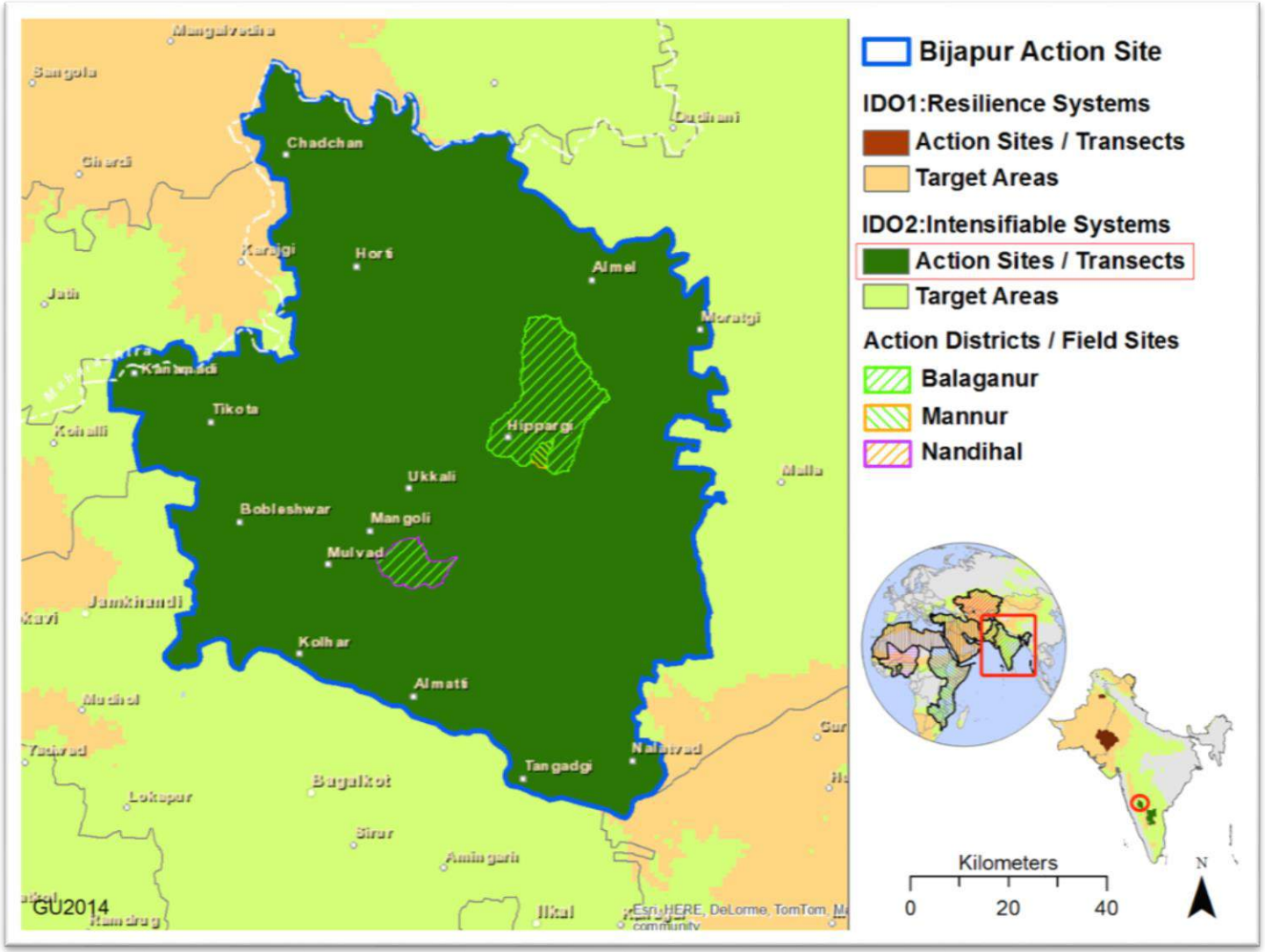
Map 1. South Asia Flagship Boundaries



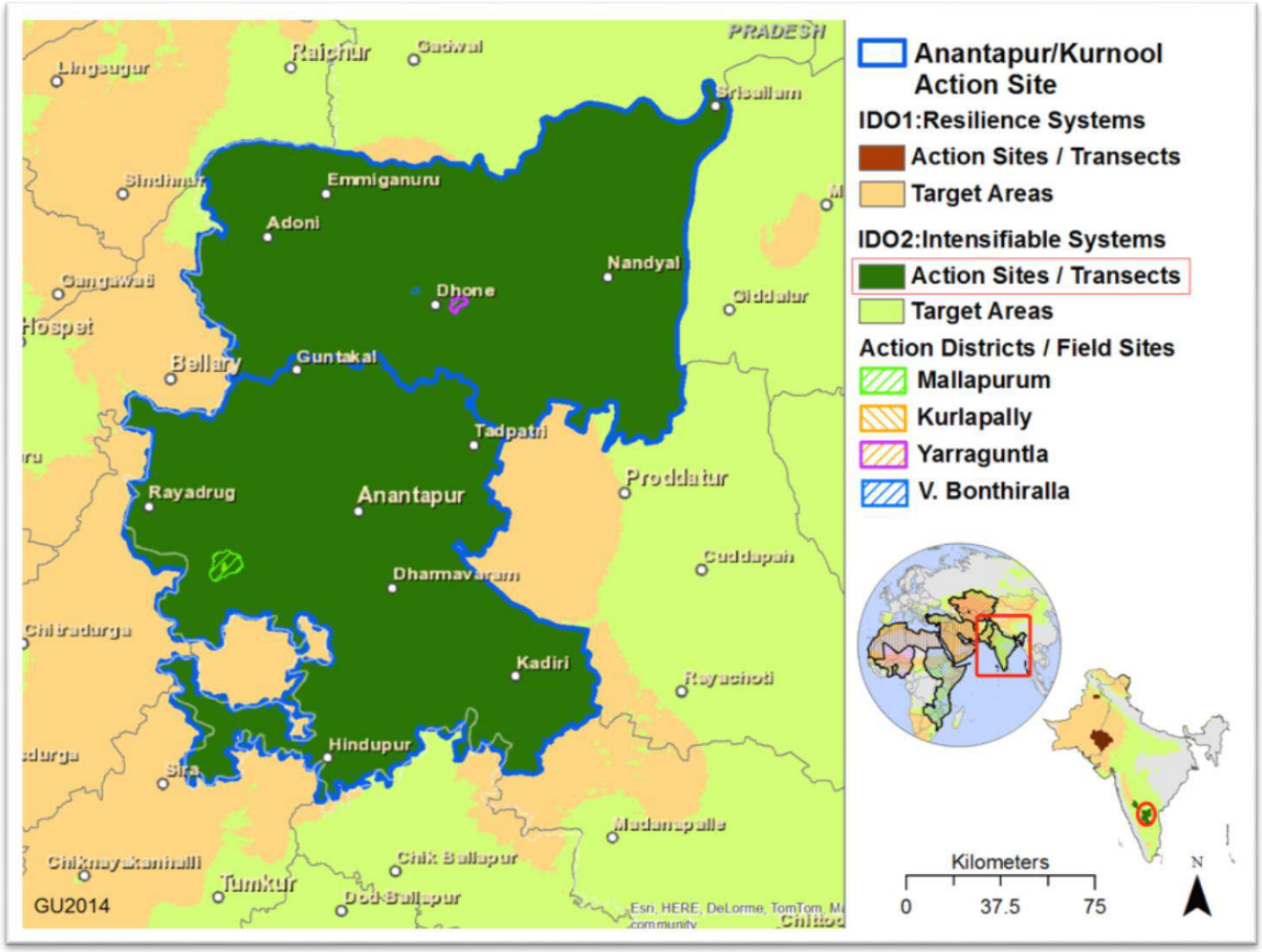
Map 2. Chakwal Action Site



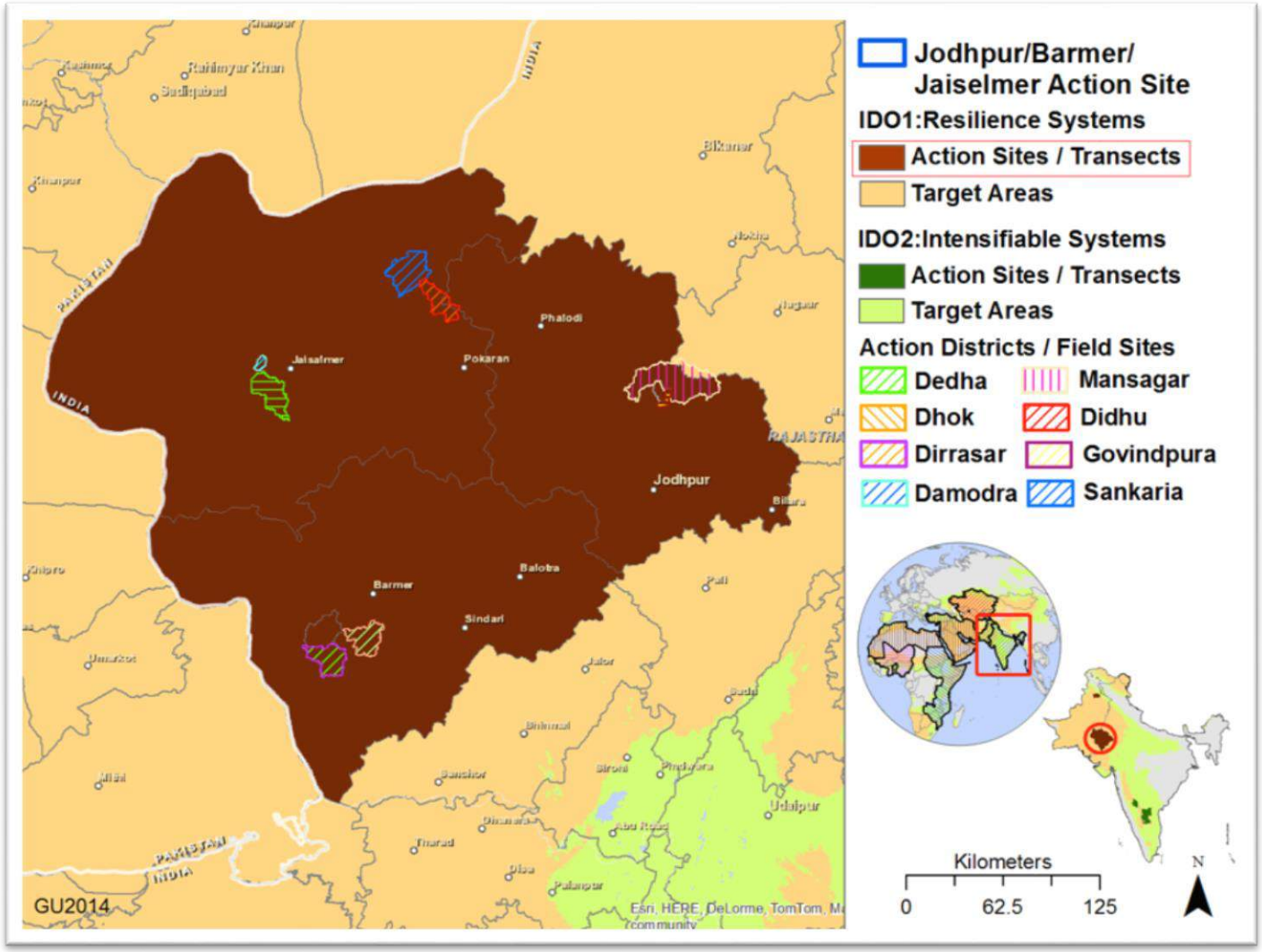
Map 3. Bijapur Action Site



Map 4. Anantapur/Kurnool Action Site



Map 5. Jodhpur/Barmer/Jaiselmer Action Site



CGIAR

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