Component 1: Knowledge Synthesis and Generation

Activity 1.1: Knowledge synthesis (existing knowledge and knowledge gaps identification)

- Review knowledge generated during the CACILM inception phase and other previous programs, identify gaps in existing knowledge including any gender-based differences in needs for knowledge
- Evaluate the current impacts of improved techniques/technologies such as water/land conservation practices on sustaining agricultural production and their potential for contending with CC
- Synthesize and consolidate SLM best practices, including local farmer innovations, into easily accessible products that facilitate increased uptake of sustainable water, land, forest and agriculture management related to cropping systems, rangelands, livestock- and crop-improvement; in both English and Russian and where relevant in local languages as well
- Synthesize existing information of CC impacts on the ARD sector and based on a gap analysis undertake where necessary biophysical, model-based assessment of the impact of climate variability and change for example on fully irrigated crops (heat stress, glacier melt, saline ground water, salt tolerant crops, diseases and insect pests) as well as on rainfed, pasture/forests and mountain agro-ecosystems.
- Based on methodological validity undertake the downscaling of CC related climatic information of global scale to the CACs subregional and national levels Develop scenarios of potential adaptation pathways to CC (land suitability and land degradation mapping, lessons learned in conservation agriculture, soil and water conservation interventions, livestock movement, modern varieties and breeding, best-bet practices for forage production)

Activity 1.2: Knowledge generation about SLM practices (filling knowledge gaps)

- Based on a knowledge gap analysis, design field evaluation plots to validate proposed SLM and adaptation to CC options and demonstrations to show promising technologies and provide information ready for packaging and dissemination and video document the process for developing training materials and scaling-up.
- Demonstrate and develop further gender-sensitive best practices for integrated land management systems based on lessons learned from previous CACILM and R&D projects in the region (advanced breeding lines, wheat and barley germplasm, rehabilitation of degraded rangeland and mountains, interaction between crop varieties, SLM etc.).
- Develop gender-sensitive knowledge products on technical aspects of climate-resilient sustainable water management, soil and water conservation, crop improvement and rangeland, forest and agriculture management.
- Characterization of biophysical and socio-economic requirements of the current and proposed SLM practices and identify potential areas and communities where these are best suited and sustainable

Component 2: Knowledge Packaging and Dissemination

Activity 2.1: Typology of stakeholders and knowledge dissemination pathways

- Identify the needs of target groups to define what KM products should be developed, analyze stakeholders' capacities to design and implement relevant dissemination activities and develop an out-scaling approach to help disseminate the knowledge and products generated to women and men, for example, through farmer-to-farmer exchanges, farmer field-day visits to demonstration sites and exposure visits for policy makers.
- Establish targeted awareness raising, training and knowledge dissemination pathways using existing national institutions for improved up-take by farmers of sustainable agriculture and natural resource management practices.
- Design a communication plan: The communication plan will be developed through consultation and workshops to define the men and women in the target audience and develop an 'influence path' to inform and influence specific groups (decision makers, extension agencies, farmers' organizations, etc.) and the wider public. This exercise will determine the types of information (reports, publications, tools activities, etc.) that are needed to achieve the desired impact. (This activity is combined with activity 3.2 bullet 4)
- Design and measure impact of the knowledge products, communication plan and knowledge platform based on "Outcome Mapping" that aims at engendering specific behavior changes or actions among the target groups.

Activity 2.2: knowledge exchange on technical packages

- Capacitate the CACILM knowledge platform with relevant expertise for upgrading and maintaining the knowledge management infrastructure (e-platform and network, databases, GIS mapping and audio-visual content)
- Organize thematic workshops and regional conference that bring together international and national expertise for example on crop varietal improvement for abiotic (supplementary irrigation, drought heat and salinity) and biotic (diseases and insect pests) stresses, integrated crop- range-livestock production system, soil and water conservation linked to SLM, CC and food security. Link CACILM II with the CGIAR Research Programme 5 (CRP5) on Land, Water and Ecosystems to gain greater synergies and to leverage positive policy reforms.

Activity 2.3: Capacity building and sustainable access to knowledge

- Train CACILM partners to use KM infrastructure, including IFADAsia and other online infrastructure for networking, databases, GIS mapping, WOCAT and audio-visual content.
- Include practical policy level information to educate decision makers on the issues of SLM and provide examples and guidelines for designing and implementing national policies, including examples of practices in other countries and contacts to relevant experts.
- Links to data and useful information in databases from CACILM Phase 1, including project data that can be displayed in a useful way, and GIS information.
- Provide core information in English and Russian. Translation of core material into other languages will be undertaken as required.
- Strengthen the local institutions with up-to-date tools for monitoring land degradation, assessing production and nutritive value of forage species for each agro-ecosystem (create a regional database)

Component 3: Using Knowledge in Policy Dialogue

Activity 3.1: Enhancing evidence-based knowledge

- Strengthen and further develop the analytical basis for generating evidence-based policies in the agricultural and natural resources sector including designing incentives for adoption of SLM technologies and innovations by farmers.
- Stakeholders will be provided with knowledge and information that empowers and enables them to advocate for better SLM policies.
- Develop better understanding of the trade-offs involved in using different land policy mechanisms and identify those that are more effective under existing institutional and social settings.

Activity 3.2: Policy dialogue to facilitate adoption of SLM

- Conduct robust analytical work on policy effects on SLM and adaptation to CC in relation to achieving food security, poverty alleviation and resource mobilization objectives. The range of existing land use scenarios includes five key areas in which we will consider influencing national policies: 1) water conservation policy (inundated land or land under assets not used for any other purpose); 2) land conservation policy (environmental, soil health, and minimization of land degradations such as soil erosion and salinization); 3) land grazing policy; 4) pro-poor land policy; and 5) Property rights to land, and land transactions.
- Convene national and sub-regional policy dialogue forums informed by the result of the policy analysis. Following earlier ICARDA experience in the CA context, and based on rigorous policy analysis, the project will undertake diverse forms of pro-active engagement with policy-makers (e.g. workshops, roundtable meetings, policy dialog meetings) that will ensure the project team and national partners are capable of influencing decision makers. Capacitate the national SLM institutions to participate in relevant regional and international meetings to facilitate the improved exchange of experiences and uptake of viable policy options.
- Enhance the CACILM coordination functions for improving national, sub-regional, and international coordination through supplementary financing of the CACILM governance structures. Strengthen beneficiary communications and policy advocacy work by developing relations with the media, writing policy briefs and using communications and policy advocacy mechanisms more effectively to gain the attention of policy makers and the media.
- Develop a communication strategy for effective advocacy and enhanced visibility of CACILM, which will include: 1) a consolidated and high quality web page/portal, through which users can be more effective in accessing, sharing and disseminating knowledge and information; 2) a revised organization structure and strategic plan for SLM policy; 3) A greater capacity to influence national level policy through our network of partners; 4) an opportunity to contribute to social and economic knowledge base through high quality publications (complementarities with component 2 above is considered) 5) concrete suggestions on how to raise awareness of policy-makers and donors' community on issues of SLM and CC in CA .
- Undertake economic and financial evaluation of improved land and water conservation technologies using different economic analysis tools at farm and sector levels with important consideration to climate change.