Conservation Agriculture for Irrigated Areas in Azerbaijan, Kazakhstan, Turkmenistan and Uzbekistan
GCP/RER/030/TUR

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Project justification

- Azerbaijan, Kazakhstan Turkmenistan and Uzbekistan, have a large and promising agricultural potential
- Majority of the population directly or indirectly derive their livelihoods from agriculture.
- Irrigated areas where most of the farming population resides are of major importance for national food security.
- Increasing demographic pressure and internal market demand require increase agricultural production
- Opportunities for implementing agricultural practices that improve production, contribute to optimization of water productivity and mitigation/prevention of further land degradation.

Past and Related Work

Azerbaijan


The overall objective of the project is to assist MOA in formulating a medium-term policy framework for sustainable development of the agricultural and rural sector in the post-privatization period.
Past and Related Work

Kazakhstan


The objectives of the project are:
(i) to test and adapt diversified cropping systems and improved fallow technologies;
(ii) to train farmers in using CA-farming practices for a more sustainable and profitable cereal production.

Past and Related Work

Turkmenistan


The objective is to provide staff at national and farm level and farmers with the capacity to assess the state of soil and water management and develop and apply programme to improve water management in irrigated schemes for increased agriculture production.
Past and Related Work

Uzbekistan


Demonstrating appropriate management techniques for rehabilitation and improvement of salt-affected and gypsiferous irrigated lands in support of food security in the country.

Some of the studies and guidelines produced by this TCP would be very useful.

Past and Related Work

Uzbekistan

The purpose of Project FAO/TCP/UZB/2903-3102/A (07/2006-09/2007) was to demonstrate alternative, profitable and more sustainable agricultural production methods such as appropriate water and soil conservation practices and conservation agriculture for small independent farmers in Karakalpakstan, where water is a very scarce, valuable and decreasing resource.
TCP/UZB/3001 (11/2004-05/2007) was aimed at improving the efficiency and environmental sustainability of two most important crops: cotton and wheat. In order to meet the need for increasing cotton and wheat production the Government is looking towards conservation agriculture practices, such as no-tillage, bed planting, etc. This project formed an integral part of an international exchange and networking program between Uzbekistan and Brazil, Netherlands, Germany, New-Zealand, Pakistan, India, China and the USA as well as a complement to parallel initiatives in Turkmenistan, Kazakhstan and Tajikistan.

Past and Related Work

Uzbekistan

Lessons learned from the previous projects

✓ Provided basis for directional change in agricultural development, from one with primary focus on production to one that aims at sustainability of the agriculture.

✓ It appeared as an excellent starting point for building effective partnerships between institutions such as FAO, CIMMYT, ICARDA in CGIAR and others (donor organizations) in the strive towards goals of sustainable agriculture.

✓ Improved irrigation and on-farm water management practices to ensure a reliable water supply and efficient and economic water use for optimal crop production proven.
Lessons learned from the previous projects

✓ Better drainage and other control methods to moderate the effects of soil salinity demonstrated.
  • Improved crop management on permanent beds and with a diversified crop rotation demonstrated.
  • Lower and more efficient water utilization for the new crop rotations introduced, as compared to traditional mono-cropping systems.
  • Local capacity established to extend the project activities to a wider area.

The New FAO Project on Conservation Agriculture
GCP/RER/030/TUR
Who are the beneficiaries?

• Small farm households
• Farmer organizations
• Small implements manufacturer enterprises,
• Research institutions
• Service providers
• NGOs and input suppliers (seed, fertilizer nutrients, agrochemicals).

How project can assist to promote CA?

• Capacity development.
• Accelerated dissemination of improved techniques.
• Utilizing a participatory approach at farmer level.
• Enhance the socioeconomic development of farmers, local stakeholders and selected private-sector firms and service providers, with spillover benefits to the whole society.
Project framework

- Planned period - 24 months.
- Based on past research activities of main partners in Azerbaijan, Kazakhstan, Uzbekistan and Turkmenistan and links established with national partners.
- Focuses on both resource-poor and better-off farmers.
- Demonstration and research activities will be carried out in at least one selected benchmark site of 25 ha per country.
- These sites should represent the most significant ecological zones in each country.

Expected long-term Impact

The project is focused on the improved rural livelihoods and food security through increased productivity of irrigated farming systems Azerbaijan, Kazakhstan, Turkmenistan and Uzbekistan - using the principles and practices of conservation agriculture to achieve sustainable land and water management.
Expected Outcomes

- Current cropping systems adjusted toward conservation agricultural practices promoting production intensification within irrigated farming systems.
- Alternative cereal crops, food and forage legumes suitable for irrigated cotton-wheat farming systems in Central Asia will have been identified and integrated.
- Encourage cropping systems diversification and new conservation agriculture technologies will have been disseminated.

Expected Outcomes

- The water and soil conservation technologies will have been sufficiently validated by core farmers groups.
- An expanded programme will have been prepared for farmers living in nearby districts.
- Employment opportunities for the rural poor and national partners’ capacity in technology development, evaluation and dissemination.
- Demonstration sites for proper conservation agricultural practices will be fully operational in all participating countries.
- The scientific information will have been made available in forms of booklets, flyers and scientific publications.
Output 1.1

Improved crop production and management within demonstration sites through accelerated adoption of conservation agricultural practices

Activities to be implemented

Activities

• Contract with ICARDA and local consultants and establish project office.
• Engage local scientists for monitoring agricultural and economic parameters of the demonstrations.
• Organize an inception workshop to discuss the detailed national and regional work plans.
• Select the demonstration sites in each country and identify in a participatory manner the participating farmers.
• Order required equipment, spare parts, seeds, herbicides and fertilizers.
• Modify existing machinery/equipment for the use under Conservation Agriculture system.
Activities to be implemented

Output 1.2

Raised-bed planter and land leveling technology adjusted and applied and lower and more efficient water utilization for the crop rotations introduced, as compared to traditional cropping systems;

Activities

• Survey the selected farms and carry out soil analysis in the selected farms.
• Supervise improved land preparation and direct seeding.
• Setting-up and training of water user associations.
• Training workshop on improved water, land and crop management and national partners.
Activities to be implemented

Output 1.3

Crop rotations diversified with crops suitable for conservation agriculture

Activities

• Carry out monthly on-farm training on water and crop management.
• Carry out bi-monthly field days during each cropping season in each country.

Activities to be implemented

Output 1.4

Confidence of farmers, extensionists and other stakeholders on practicing principles of conservation agriculture increased

Activities

• Monitor growing conditions of crops on selected farms (demonstration and control plots).
• Economic analysis of production costs of introduced conservation agriculture technology.
Activities to be implemented
Output 1.5

Farmer-oriented brochures and guidelines on applying conservation agriculture practices in irrigated and rainfed areas in the selected countries produced and printed.

Activities

Preparation of draft guidelines on improved land, water and crop management through CA technology.

Activities to be implemented
Output 1.6

Capacity building activities in the area of conservation agriculture designed and carried out at the benefit of farm households and national partners.

Activities

• Organize at least one quarterly Field Day during the cropping season on each demonstration field in each country.
• Organize one final assessment workshop in each country to disseminate project’s results with participation of all stakeholders and related civil societies.
Success and Sustainability

• Training the national staff and farmers allows to deliver an information to expanding group
• Relevant skills can be developed and disseminated
• Even if some trained individuals will not continue with their present work, knowledge will remain to continue the work efficiently and independently.
• The concept of CA for a more sustainable agriculture will be promoted among decision-makers
• Basis for inclusion of the CA in the national agenda will be provided

Institutional Framework and Coordination

• Project implementation in close co-operation with ICARDA.
• At country-level - in collaboration with the competent national and regional institutes and agencies and ICARDA.
• FAO and ICARDA will identify and select a full-time Regional Project Coordinator (RPC).
• Subject matter specialists will be recruited in each country as national consultant as required according to the crop season.
Institutional Framework and Coordination

• The National Consultant in Crop Management will work as the National Project Manager (NPM)
• Each country will appoint a National Project Coordinator (NPC)
• FAO/SEC and ICARDA will establish a Project Steering Committee (PSC)
• Regional Project Coordinator – secretary of PSC
• One representative from each participating country in the PSC.
• Meetings of PSC at least twice a year.

Strategy/Methodology

The project strategy will consist of 4 key elements:

1. Improving crop production and management through conservation agriculture
2. Cropping system diversification
3. Economic analysis
4. Capacity development
Improving crop production and management through conservation agriculture

• The raised-bed planting system is a good option in combining several practices required by conservation agriculture.
• An excellent platform for diversification of cotton-wheat systems through inter-cropping, relay-cropping, and mixed farming aimed at integrating crop-livestock systems.
• Combined with laser-assisted land leveling, the raised-bed planting system can improve the productivity of high-value crops and reduces leaching and irrigation water equipments.
• The project will include laser-leveler equipment and raised-bed seeders, utilizing as much as possible the existing ones in the four concerned countries.

Cropping system diversification

• Introduction of a pilot-scale a selection of alternative (highly productive and profitable) crops suitable for diversifying the current crop rotations and cropping systems and which simultaneously can satisfy fodder and food demands.
• These will be planted in conservation agriculture rotations on the demonstration sites to determine:
  ✓ the performance of crops under conservation agriculture conditions and if they are suitable for the proposed crop rotations;
  ✓ the best crop sequence and water management measures for higher water use efficiency and salinity control;
  ✓ the most appropriate fertilizer use and application.
3. Economic analysis

- An important component of the project is to estimate the financial benefits of the new technologies at the farmer-level.
- A comparison of input costs under conservation agriculture and traditional technologies will be undertaken in the selected project demonstration sites.

4. Capacity development

- Strengthening the capability and skills of farmers and local experts in developing locally adapted resource-saving, profitable and diversified crop productions through the new technologies proposed by the project.
- Farmers themselves will evaluate the interest and practicability of new technologies on their farms jointly with local research experts.
- The direct involvement of agricultural scientists in the evaluation and adaptation of the new technologies at farm-level will be promoted.
Workshops and Field Days

- Initial workshop with participation of policy makers from the Ministry of Agriculture of each country, farmers and researchers and discussing the project expected outcomes, yearly work plans and relevant activities.
- Several field days will be organized throughout the cropping seasons.
- Final workshop to discuss project achievements measured against project expected outputs and outcomes.
- The results and conclusions will provide the basis for the preparation and drafting of an outline program of follow-up interventions to be submitted to interested donors.

Government Inputs

- Designate a National Project Coordinator (NPC).
- Grant exemption from the payment of all custom duties or other taxes for the import of project equipment and materials.
- Grant prompt issuance, free of charge, of all visa or permits required for project experts and consultants.
- Assist in the organization and logistic aspects of capacity building activities, including training courses; provide venue and, where required, training equipment and machinery.
- After project termination, the Government will take all necessary actions to support the dissemination, replication and larger application of the agricultural practices demonstrated by the project, in line with project recommendations, also promoting and facilitating the required arrangements for donors’ support to the above.
Donor and FAO Contribution

- The Turkish Government will provide through FAO a total grant contribution of US$ 600,000.
- FAO technical officers will provide technical monitoring and backstopping on specific issues.
- LoA with ICARDA.
- Recruitment of National Consultants.
- Travel.
- Trainings, workshops and field days.
- Field equipment - planters are already available in Uzbekistan and in Kazakhstan.
- Equipment and agricultural inputs.

Monitoring and Knowledge Sharing

- Baseline study and procedures for the regular collection of data in each country.
- Collecting and evaluating relevant data from the farmers on the pilot sites of the project after each cropping season.
- Recommendations for possible adjustments and changes to be implemented by the farmers during the following crop cycle.
General monitoring and evaluation through impact assessment studies and regular reporting by the project staff of the following key indicators:

- cropping intensity;
- precipitation, soil moisture and groundwater table depth;
- weed control;
- crop development and health;
- irrigated areas and water use;
- new machinery use;
- use of agricultural inputs provided (seed, herbicides and fertilizers);
- yields and other crop parameters;
- marketing options.

**Monitoring and Knowledge Sharing**

**Reporting Schedule**

- Within three months from the project start up - an inception report an initial agricultural assessment of the selected pilot sites in each country.
- During project implementation - six-month progress reports along the FAO format, including information on procurement, completed project activities and revisions of work plans.
- Mid-term review (beginning of second year) - the RPC will prepare the draft TOR and material and FAO conducts the review and presents to the PSC.
Reporting Schedule

- Final review and final report - at the end of the project, describing the outcome of the project in terms of impact, relevance, sustainability and suitability for replication.
- Final report will summarize the main conclusions and recommendations, and indicate whether the project has played a catalytic role in demonstrating the viability of changing agricultural practices (and policy) in the region.
- The reports will also include proposals for critical elements to be included in an outline follow-up proposal to be prepared by the project staff to attract donor funding.

Conclusion

- The experience gained through projects shows that the use of conservation agriculture (CA) practices can lead to many ecological and economic benefits.
- The project will be implemented in close cooperation with ICARDA, farms, NARS and other local partners.
- The project is aimed:
  - in capacity development,
  - accelerated dissemination of improved techniques,
  - utilizing a participatory approach at farmer level,
  - enhance the socioeconomic development of farmers, local stakeholders and selected private-sector firms and service providers, with spillover benefits to the whole society.
THANK YOU