



Republic of Moldova
Terms of Reference



International Fund for Agricultural Development
Formulation of the SCCF Climate Resilience through Conservation Agriculture
Project in Moldova

Study n.1: Technical Assessment of land degradation in the Moldovan agro-landscapes and design of Conservation Agriculture interventions

Soil erosion is a serious environmental problem in Moldova, resulting in significant productivity declines and economic loss. During the past two decades, there has been growing evidence that the application of Conservation Agriculture (CA) principles and practices can serve as a good alternative that can address the unsustainable characteristics of minimum tillage agriculture. Conservation Agriculture (CA) is a holistic approach to crop production, which encompasses minimal soil disturbance, permanent organic-matter soil cover, and diversified crop rotation.

Generally it can be said that CA is an important tool in those regions of the world where soil erosion is a major problem and where the retention of soil moisture is an important goal. This approach provides opportunities for regenerating land in poor conditions and improve and sustain soil health while optimizing crop production per unit area.

Wherever CA has been adopted properly it appears to have had social, economic and environmental benefits. CA also represents a practical concept to achieve and sustain improved soil health and better soil-crop-nutrient-water management in agricultural landscapes increasing their resilience to climate change. Sustainable crop production intensification not only reduce the impact of climate change on crop production but also mitigate the factors that cause climate change by reducing emissions and by contributing to carbon sequestration in soils.

1. Objectives of the consultancy

The present study will focus on the assessment of land degradation and soil erosion under a climate change context (environmental, socio-economic and policy issues) in the Moldovan agro-landscapes, the design of a soil erosion risk-reduction and soil restoration strategy in the project area, as well as assessment of Conservation Agriculture (CA) measures applicable to Moldova and the sites most suitable for implementation.

The study will address the following issues:

Part I: Technical Assessment of land degradation in the Moldovan agro-landscapes

(i) analysis of land degradation/soil erosion problems and causes, providing also information about costs and long-term consequences for the Moldovan society; (ii) assessment of climate change vulnerability and impacts on targeted agro-landscapes and production systems in the country, and the relevance of soils for CC adaptation and mitigation; (iii) the identification and mapping of current/potential soil erosion-risk in the most CC-prone zones and proposing a general scheme of anti-erosion measures.

Part 2: Design of Conservation Agriculture Interventions

(i) assess existing and potential political, social and economic barriers and opportunities for the adoption of CA in Moldova; (ii) design a strategy for the planning and implementation of CA interventions, including the description/justification of the selected CA measures, and their contribution for CC adaptation and mitigation; (iii) identification of candidate sites in the most CC and erosion-prone zones of Moldova for pilot actions to test the applicability of the selected CA measures; (iv) identify the inputs and the activities needed to implement a cost-effective (co-benefits and analysis of trade-offs) climate-smart CA strategy, taking into account the specific environmental and socio-economic context of the project area, and the enabling conditions - policy, capacity building, awareness, knowledge-management, technology transfer and investment plan.

The study will identify opportunities for fostering income generation opportunities related to CA, identifying options for the diversification of revenues for the most vulnerable groups.

Unitary costs for each of the project activities will have to be included and a framework for assessing the CC adaptation and mitigation performance of the project should be identified.

2. Main tasks

The consultant is expected to work with relevant governmental staff, the IFAD Project staff, the IFAD ECD team and Country Program staff, and in close collaboration with the other team members.

Part I: Technical Assessment of land degradation in the Moldovan agro-landscapes

1. Based on the existing and available national and international data on climate change and soil management, as well as field work (including a wide consultations with all stakeholders), he/she will:

- Assess soil management related issues, and land degradation/soil erosion problems and causes in Moldova, with specific focus to the project zones, providing also information about costs and long-term consequences;
- Assess CC vulnerability and impacts on the targeted agro-landscapes and production systems, and the relevance of soils for CC adaptation and mitigation;
- Identify and map CC-prone candidate areas for soil conservation and restoration actions in the project zones, taking into account biophysical, ecological and socio-economic factors characterizing the agro-landscapes;
- Determine the stakeholder involvement needs/opportunities to guarantee the effective implementation and long-term sustainability of the proposed interventions; special consideration should be given to the most vulnerable groups and the suitability of the proposed soil intervention actions for creating rural employment opportunities;
- Assess the global and local environmental benefits arising from the identified project activities.

Part 2: Design of Conservation Agriculture Interventions

Based on the existing and available international and national data on conservation agriculture, as well as field work (including a wide consultations with all stakeholders), he/she will:

- Assess the contribution of CA to CC adaptation and mitigation in the Moldovan agro-landscapes;
- Support the identification and mapping of CC-prone candidate areas for conservation agriculture in the project zones, taking into account biophysical, ecological and socio-economic factors characterizing the agro-landscapes;
- Develop guiding principles and a conceptual model to plan and apply climate-smart CA tailored to the country/project context and stakeholders, reflecting understanding of realities on the ground;

- Indicate, describe and justify the selected methods and technologies suitable to ensure the long-term sustainability of the project;
- Assess the cost-efficiency and the proposed CA intervention actions;
- Determine the policy requirements, and stakeholder involvement needs/opportunities to guaranty the effective implementation and long-term sustainability of the proposed CA interventions; special consideration should be given to the most vulnerable groups and the suitability of the planned interventions for creating rural employment opportunities;
- Determine the investment and running costs and define the technical requirements for the planned interventions, as well as their possible technical limitations/risks;
- Assess the global and local environmental benefits arising from the identified project activities.

3. Expected outcomes

The expected outcome from this consultancy is a comprehensive study that includes the following deliverables:

- (i) Context and problem analysis, project rationale and guiding principles, planning, assessment of individual CC-prone sites at a local level in relation to their suitability for erosion risk-reduction and conservation agriculture actions

This will be based on the field work, review of existing data and consultations with all stakeholders to identify project sites, needs and opportunities for soil conservation and application of Conservation Agriculture, to agree on intervention priorities, operating plan, and specific activities on climate-smart erosion risk-reduction and CA methods and technologies. The assessment should clearly articulate the needs while suggesting an integrated approach for problem solving and improvement of soil conditions (i.e well defined CC-based adaptation and mitigation strategy, soil carbon sequestration potential). The identification of the project activities should also take into account the demand, needs and circumstances of local/community and agricultural smallholders.

- (ii) Technical elements of project design

The consultant will provide a core section with all required material (annexes maps, and/or assessment matrix, cost elements, indicators etc) on the project design and the proposed interventions. The assessment should be result/impact-driven and the proposed activities should be in line with the government priorities, local-demand, overall project objective and the SCCF eligibility criteria for investments.

If possible, the consultant will assess in qualitative and quantitative terms expected changes in soil conservation and restoration as a reference to describe the baseline situation and the additionality of the proposed alternative.

The consultant will include also:

- an analysis of the national and local framework to promote erosion risk-reduction and soil restoration activities;
- unitary investment costs, as well maintenance cost, against technical requirements.
- a list of M&E indicators (for each result/activity) should be also provided.

Overall, the proposed interventions should be based on the approved PIF and the proposed activities should be fully blended within the baseline project.

The consultant will include also:

- an analysis of the national and local framework to promote conservation agriculture activities;
- unitary investment costs, as well as maintenance cost, against technical requirements.
- a list of M&E indicators (for each result/activity) should be also provided.

4. Supervision

The consultant will work under the joint responsibility of the IFAD Environment and Climate Division (ECD) team and Country Program Manager (CPM) for Moldova. The consultant will carry out his tasks in close consultation with the relevant agencies of the Government of Moldova and all relevant national stakeholders. The consultant will work closely with the IFAD RFSADP Project, as well as in close consultation with the team leader and other members of the team.

5. Required expertise

University degree in agriculture, agronomy, agro-forestry or nature resource management, with at least 10 years of work experience including field experience and analytical capacity, preferably in relation to soil engineering, agro-ecology, and climate change. Knowledge of Geographic Information Systems. A demonstrated capacity to write technical agronomic-related documents to an international standard in English is mandatory.

6. List of documents

The following documents will be provided for reference to the consultant, as follows:

- SCCF Project Identification Form (PIF)
- GEF/SCCF related strategic documents
- GEF Templates for CEO Endorsement
- IFAD's Country Strategic Opportunities Paper (COSOP) for Moldova
- RFSADP Project documents
- Second National Communication of Moldova to the UNFCCC
- Any other key/relevant information