Template 1. Grant proposal identification form (for competitive selection)

(This form must be filled by the Sponsoring Division, as part of the documentation prepared to launch a call for proposals for competitive selection. See Financing Procedures for IFAD Regular Grants, paragraphs 75 - 76)

Strategic objective	*Indicate the main Strategic Objective that the grant intends to support (please only choose one)* ☐ SO1: Leverage better impact on the ground for IFAD's programme of work, including through improvement of in-country capacity for greater sustainability of benefits ☒ SO2: foster a more conducive policy and investment environment for smallholder agriculture and rural development, including at the regional and global level
Priority Area	*Indicate the main Priority Area that the grant intends to support (please only choose one)* ☐ PA1: Increased ambition on mainstreaming and other priority issues, and enhanced targeting of the most vulnerable rural people ☐ PA2: Strategic focus on fragility, conflict and building resilience ☐ PA3: Strategic partnerships to enhance impacts ☐ PA4: Enhancing performance and efficiency ☒ PA5: Sustainability and scaling-up results
Pathways	*Indicate the main Regular Grants Policy's pathway that the grant intends to support (please only choose one)* ☒ Policy and investments ☐ Partnerships ☐ Knowledge
Theme	Climate change is one of the greatest challenges of these days and it is having a huge impact on agriculture through a multitude of channels, including soil degradation and water scarcity. Smallholder farmers from developing countries, that constitute IFAD's target population, are dramatically affected by these phenomena. Moreover, soil health is the basis of food production, therefore soil degradation is strongly connected with food insecurity. Soil data can unlock key information to transition to a more efficient and sustainable system. To address these issues, one possible channel is regenerative agriculture. Regenerative agriculture describes farming and grazing practices that, among other benefits, reverse climate change by rebuilding soil organic matter and restoring degraded soil biodiversity – resulting in both carbon drawdown and improving the water cycle. Combining these practices with cutting-edge technologies to assess soil health and agricultural inputs needs would improve farmers' use of land and of resources. The grant would fund two interconnected interventions:

	i. One or more pilot studies, which aim at introducing in small farmers communities cutting-edge technologies for pumping water and soil monitoring, to improve soil health and avoid resource wasting. ii. Systematic data collection to improve and monitor soil health and predict extreme events (droughts, floods, etch.), using a combination of remote-sensing data and irrigation sensors. This would help to build predicting models to improve precision targeting at project design and inform early warning systems.
Background and relevance	**Contribution to IFAD's Grant Policy through SO2:** foster a more conducive policy and investment environment for smallholder agriculture and rural development, including at the regional and global level. In the past two decades researchers, activists, politicians, members of humanitarian agencies have claimed that the global food system is 'in crisis'. According to the UN Food Systems coordination Hub, the current food systems are not able to provide adequate food for all. The symptoms of this crisis span from hunger and poverty, to poor food quality, environmental degradation, biodiversity loss, increase greenhouse gas (GHG) emissions, and adverse impacts on climate change (Giller et al. (2021), FAO (2021), Pörtner et al. (2022)). In this dramatic scenario, regenerative agriculture (RA) is regarded as a possible solution as it offers a holistic approach with minimal to no impact on the environment. Moreover, RA can increase productivity, has a high level of built-in economic and biological stability and minimal reliance on non-renewable resources. RA is a farming strategy that uses natural processes to increase biological activity, enhance soil health, improve nutrient cycling, restore landscape function, and produce food and fiber, while preserving or increasing farm profitability. The RA strategy is based on a set of guiding principles, and practitioners can select from a variety of farming tactics that integrate biological and ecological processes with the objective of increasing production and restoring landscape functionality. RA employs a mixture of traditional and digital methods and technologies that span from crop rotation to digital soil health and water management practices. The various specific techniques that can be applied include, but are not limited to minimum tillage, stubble retention, crop rotations, multi-species cover crops, rotational grazing, reduction of synthetic inputs, as well as remote sensing [1], variable rate irrigation [2], regenerative irrigation practices[3], wireless sensor networks[4] and digital soil mapping[5].

[1] Utilization and applying remote sensing with proximal image processing to manage agricultural inputs such as nutrients, soil, or water is a recent trend. A recent review concluded that crop water use efficiency can be increased by characterizing water bodies using satellite-based technologies such as proximal and remote sensing (Cancela et al., 2019). Future agricultural production would rely more on remote sensing techniques to better utilize agricultural inputs. The recent development and utilization of drone-based technology in agricultural field to implement best management practices as well as integrated pest management for crop
production have drawn much attention.

[2] VRI is variable rate irrigation system that applies irrigation according to detailed mapping and monitoring of soil variability thereby reducing drainage losses (Trout et al., 2008). In a VRI system, sensors can unlock the full potential of variable rate irrigation (VRI) systems enabling optimal water applications in an irrigated cropping system.

[3] Regenerative irrigation is a part of regenerative agriculture to increase resource efficiency such as using fewer chemical fertilizers, more residue-based materials, reusing wastewater to increase the irrigation water use efficiency and decrease farm energy input.

[4] The WSNs can be used as a sophisticated and useful tool of precision agriculture management to aid in agricultural decision-making systems (e.g., irrigation water or fertilizer application monitoring systems). These various wireless communication systems are more flexible options to manage soil, water, nutrients, and would bring revolution in sustainable agricultural production systems.

[5] A component of water smart agriculture is to generate relevant informative maps of soil types, properties, and functions for sustainable soil and water management. This approach can be multi-level and its functionality can help farmers in their decision-making process (Barron, 2012; Falkenmark et al., 2009; Falkenmark,2013) especially in drought-prone areas during challenging times of climate change (Eitzinger et al., 2012).

	IFAD is a specialized global development organization exclusively focused on and dedicated to transforming agriculture, rural economies and food systems. IFAD is a leading international organization for innovative approaches for enhancing agricultural development, and many of the Fund's projects and projects in the NEN region in particular involve regenerative agriculture techniques. Hence, the present grant perfectly fit IFAD's mandate and NEN objectives. The grant will serve as a pilot to test the effectiveness and cost-benefit of the implementation of different RA techniques in the agricultural production process of selected value chains considered particularly vulnerable to climate change. The project will produce a lasting data infrastructure containing information on soil mapping and soil health as an important tool for monitoring and decision making. Finally, the results of the pilot will be used to evaluate the improvement in sustainability of agricultural production and the impact of regenerative agriculture as a climate change mitigation strategy. A rapid impact assessment will be conducted to estimate the impact of RA adoption and the results of the analysis will be used to inform scaling up. The outcomes of the pilot will provide a solid basis for scaling up the interventions to other focal areas and will provide evidence to assess the sustainability of the implemented technology.
Project goal and objectives	**Goal:** Contribute to more productive and nutritious climate resilient and sustainable agricultural production through the application of regenerative agriculture techniques aimed at improve soil health and natural resource management (NRM), while enhancing climate change mitigation in the three selected countries and projects. **Objective 1:** Create a data infrastructure able to support soil monitoring and evidence-based decision making at a national scale. **Objective 2:** Improve resilience and food security of smallholder crop producers by enhancing the efficiency and sustainability of soil and water resources use through the introduction of regenerative agriculture techniques aimed at improving food quality, agricultural productivity and at enhancing climate change mitigation. **Objective 3:** Foster the coordination between project countries through knowledge and technology exchanges *a la* SSTC manner, workshops, and other activities to disseminate results, best practices, and to replicate and scale up tested and documented innovations.
Target regions and countries	The scope of the grant is global/regional. In particular, NEN has already identified three suitable countries in which the interventions foreseen for the present grant would be particularly effective, namely Egypt, Moldova and Yemen. Indeed, the proposal should build on three existing projects: the Sustainable Transformation for Agricultural Resilience in Upper (STAR, Egypt), the Talent Retention for Rural Transformation Project (TRTP, Moldova) and the Rural Livelihood Development Project (RLDP, Yemen). All the three projects have components and activities related to agricultural development and innovation that can be complemented by introducing regenerative agriculture practices aimed at enhancing natural resource management and preserving soil health.
Target group	The grant will reach the IFAD defined project beneficiaries. Smallholder rural households will benefit from the access to advanced RA technologies and practices in combination with technical assistance and training to support agricultural production, enhancing soil regeneration, crop yield and food quality. National governments will directly benefit from the creation of a permanent data infrastructure containing information on soil quality and distribution of arable land, that will be a valuable tool to improve targeting and evidence-based decision making. Governments will

	also benefit from the creation of a strong international community of practice, fostering cooperation and knowledge sharing after the project completion. There will be spill-over effects positively affecting the rural communities in terms of improved soil health, increased quality of crop produce/food, and know-how. Local stakeholders will benefit as indirect beneficiaries from the knowledge disseminated by the grant and the built partnership between participant countries. **Direct beneficiaries:** • Beneficiaries of the selected project/s • National governments **Indirect beneficiaries:** • Spillover effects for communities • Local stakeholders
Outcomes/Outputs and deliverable	**Expected outcomes:** • Creation of a permanent data infrastructure containing information to monitor soil-health; • Evidence of improved food security due to improved quality of the produce; • Evidence of lower agricultural production costs due to RA techniques; • Improved natural resource management; • Evidence of reduction of GHG emission and of soil regeneration through climate-change mitigation practices; and • Evidence on the impact of regenerative agriculture techniques on agricultural productivity and food/produce quality to contribute to policy dialogue.
Value and cofinancing	The overall grant envelope is 500,000 USD. The recipient's contribution must be at least 25% for private sector applicants, reaching a total grant value of 625,000 USD. For other applicants, it is recommended that the recipient's contribution is at least 20% (total grant value 600,000 USD).
Recipient selection process	☐ Competitive selection with restricted call ☒ Competitive selection with open call The recipient of the present grant will be selected through competitive selection with open call. The call for proposals is launched and potential grant recipients are invited to submit their proposal in the form of an IFAD grant Concept Note (Template 8). The call for proposals is published on the IFAD website, social media networks and other professional networks. It is expected that at least three (3) proposals will be presented in response to a call. If only two (2) proposals are received, the sponsoring division will request the OSC's Chair to endorse competitive selection with a reduced number of applicants. In case only one proposal is received, the process should be re-started; if in the second call for proposals only one proposal is again received, the sponsoring division can decide to request the Vice President's approval of direct selection according to the process described below, or cancel the process. To ensure a fair and rigorous competitive selection process, any communication related to the selection process should happen through the dedicated corporate email-box at the following address

	(NEN_GRANT_RA@ifad.org). Submissions must be received in unchangeable format (pdf) and competing entities. The call will be open for two weeks, starting from 29/09/2023 until 13/10/2023. Only proposals received within the time period stipulated in the call for proposals can be accepted; revisions to submitted proposals are not accepted. The Competitive Screening Evaluation Team (CSET) will be responsible to evaluate all the proposals and verify the eligibility criteria. The evaluation will follow the criteria defined by the CSET, detailed in Template 3. After the eligibility of the applicant is confirmed, each member of the CSET will review the submitted Concept Notes against the established evaluation criteria, and will provide ratings and comments to justify them. The proposal receiving the highest total score will be retained. Once a decision is made by the CSET and cleared by the SD's Director, the SD informs only the selected (first-ranking) recipient that their proposal will be retained for submission to the OSC, and that the award of the grant is subject to IFAD's internal approval and successful contractual negotiations. The selected recipient is requested to confirm acceptance within five (5) working days from the communication.