Concept Note

Building the climate resilience of grain farming in northern Kazakhstan

Kazakhstan | UNDP

24 December 2019
Concept Note

Project/Programme Title: Building the climate resilience of wheat farming in northern Kazakhstan

Country(ies): Kazakhstan

National Designated Authority(ies) (NDA): Ministry of Energy

Accredited Entity(ies) (AE): United Nations Development Programme

Date of first submission/version number: 2019-08-07 V.1

Date of current submission/version number: 2019-12-23 V.2

Please submit the completed form to fundingproposal@gcfund.org, using the following name convention in the subject line and file name: “CN-[Accredited Entity or Country]-YYYYMMDD”
Notes

- The maximum number of pages should **not exceed 12 pages**, excluding annexes. Proposals exceeding the prescribed length will not be assessed within the indicative service standard time of 30 days.

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- The relevant National Designated Authority(ies) will be informed by the Secretariat of the concept note upon receipt.

- NDA can also submit the concept note directly with or without an identified accredited entity at this stage. In this case, they can leave blank the section related to the accredited entity. The Secretariat will inform the accredited entity(ies) nominated by the NDA, if any.

- Accredited Entities and/or NDAs are encouraged to submit a Concept Note before making a request for project preparation support from the Project Preparation Facility (PPF).

- Further information on GCF concept note preparation can be found on GCF website [Funding Projects Fine Print](#).
A. Project/Programme Summary (max. 1 page)

<table>
<thead>
<tr>
<th>A.1. Project or programme</th>
<th>☑ Project</th>
<th>☐ Programme</th>
<th>A.2. Public or private sector</th>
<th>☑ Public sector</th>
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<tbody>
<tr>
<td>A.3. Is the CN submitted in response to an RFP?</td>
<td>Yes ☑ No ☐</td>
<td>If yes, specify the RFP: ____________________________</td>
<td>A.4. Confidentiality¹</td>
<td>☑ Confidential</td>
<td>☐ Not confidential</td>
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<td>A.5. Indicate the result areas for the project/programme</td>
<td>Mitigation: Reduced emissions from:</td>
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<td>A.6. Estimated mitigation impact (tCO2eq over lifespan)</td>
<td>N/A</td>
<td>A.7. Estimated adaptation impact (number of direct beneficiaries and % of population)</td>
<td>88,000 direct beneficiaries (0.5% of population); 980,730 indirect beneficiaries (5.2% of population)</td>
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<td>A.8. Indicative total project cost (GCF + co-finance)</td>
<td>Amount: USD 77.7 million</td>
<td>A.9. Indicative GCF funding requested</td>
<td>Amount: USD 13.7 million</td>
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<tr>
<td>A.10. Mark the type of financial instrument requested for the GCF funding</td>
<td>☑ Grant ☐ Reimbursable grant ☐ Guarantees ☐ Equity ☐ Subordinated loan ☐ Senior Loan ☐ Other: specify ____________________________</td>
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<td>A.11. Estimated duration of project/programme:</td>
<td>a) disbursement period: 7 years b) repayment period, if applicable: n/a</td>
<td>A.12. Estimated project/programme lifespan</td>
<td>20 years</td>
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<tr>
<td>A.13. Is funding from the Project Preparation Facility requested?²</td>
<td>Yes ☐ No ☑ Other support received ☐ If so, by who:</td>
<td>A.14. ESS category³</td>
<td>☑ A or I-1 ☐ B or I-2 ☐ C or I-3</td>
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<td>A.15. Is the CN aligned with your accreditation standard?</td>
<td>Yes ☑ No ☐</td>
<td>A.16. Has the CN been shared with the NDA?</td>
<td>Yes ☑ No ☐</td>
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<td>A.17. AMA signed (if submitted by AE)</td>
<td>Yes ☑ No ☐ If no, specify the status of AMA negotiations and expected date of signing:</td>
<td>A.18. Is the CN included in the Entity Work Programme?</td>
<td>Yes ☑ No ☐</td>
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<td>A.19. Project/Programme rationale, objectives and approach of programme/project (max 100 words)</td>
<td>As a result of climate change, wheat farming in northern Kazakhstan – a major source of employment, food security and exports for the country – is threatened by increasingly frequent and severe droughts, causing significant reductions in crop yields. The proposed project will support the widespread adoption of adaptive farming techniques by (i) addressing capacity, information and governance barriers and (ii) unlocking loan co-finance from the state agricultural bank to scale up adaptation investment by wheat farming SMEs. The Ministry of Agriculture will be the Executing Entity. The project builds on the results of the UNDP-led, USAID-funded project Improving the Climate Resiliency of Kazakhstan Wheat and Central Asian Food Security.</td>
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¹ Concept notes (or sections of) not marked as confidential may be published in accordance with the Information Disclosure Policy (Decision B.12/35) and the Review of the Initial Proposal Approval Process (Decision B.17/18).
² See here for access to project preparation support request template and guidelines
³ Refer to the Fund’s environmental and social safeguards (Decision B.07/02)
### Problem addressed by the proposed GCF project

1. As a result of climate change, wheat farming in the three agricultural regions of Kostanay, Akmola and North Kazakhstan (collectively, “northern Kazakhstan”) is threatened by increasingly frequent and severe droughts, which cause significant reductions in crop yields. The wheat sector in northern Kazakhstan is an important source of employment, food security and exports for the country, as well as food security for importing countries in Central Asia. Adaptive farming techniques, such as soil moisture-saving technologies, drought-resilient seeds and precision farming, have a proven positive impact on yields in climatic conditions such as those of northern Kazakhstan. The adoption of these techniques, however, is hindered by capacity, information, governance and financing barriers leaving small and medium sized farms most vulnerable.

### Climate vulnerability, impacts and adaptation needs

2. Historically, since 1941 average annual air temperatures in Kazakhstan have increased by 0.28°C every 10 years and are projected to increase further, with the highest temperature increases expected in northern Kazakhstan. Seven of the ten warmest years during 1935-2015 occurred at the beginning of the 21st century. In addition to increases in temperature, annual precipitation decreased slightly over the period 1940-2015 (on average 0.2 mm every 10 years); seasonally, precipitation decreased in spring, summer and fall, and increased in winter. During the same period, rainfall variability has increased, characterised by periods of intense rain followed by extended dry spells.

3. Looking ahead, under climate change scenario P50, the mean annual temperature across Kazakhstan is predicted to increase by 1.4°C by 2030, 2.7°C by 2050 and 4.6°C by 2085. In all scenarios, the highest air temperature increases are expected in North Kazakhstan, Kostanay, Akmola and Pavlograd. No significant changes in precipitation are expected in northern Kazakhstan by 2050 (both annually and during the May-August crop growing season); however, due to higher air temperature, dry winds and evaporation, water availability (moisture index) during the growing season is projected to decrease by 8-17% by 2050. Under the highest emission scenario, Kazakhstan’s humid zone is predicted to shift 250–300 km northwards by 2085. This will result in large parts of northern Kazakhstan shifting to an arid or semi-arid zone. In the central and western Kazakhstan regions, where such conditions are already prevalent, drought frequency over the 1966-2010 period ranged from 31% to 38%, compared to 22-33% in the three northern regions. The frequency of severe droughts – those causing a reduction in wheat yield of at least 50% – was 16-24% in central/western Kazakhstan vs. 2-13% in northern Kazakhstan. Therefore, the northward shift in the arid or semi-arid zone will most likely cause a significant increase in the frequency of droughts – and especially severe droughts – in northern Kazakhstan.

4. These changes in climate have already had severe consequences on the northern Kazakhstan’s agricultural sector and, in particular, wheat farming, which is by far the dominant crop (see sector description below). Wheat farming in northern Kazakhstan is rainfed. An analysis of the unfavorable agrometeorological events that caused a significant or complete destruction of crops in Kazakhstan showed that atmospheric or soil drought is responsible in 80% of the cases, followed by rainstorm and hail (14%), and other events. On average, wheat production now varies by approximately one-third from one year to the next. In 2012, a drought in northern Kazakhstan affected 1.1 million ha of crops, causing a 58% decrease in wheat production vs. the previous year; in 2008 and 2010, droughts caused drops in wheat production of 21% and 43%, respectively. The frequency and severity of this type of loss are expected to increase as a result of projected climate change.

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7 NC7, p. 13.

8 See PFS, section 3.3.

9 NC7, pp. 201-2.

10 NC2.

11 West Kazakhstan, Aktobe and Karaganda regions.

12 NC7, p. 153.

13 NC7, p. 198. Other events are ground frost (2%), soil over-wetting (2%), severe frost (1%) and strong winds (1%).


5. More efficient farming techniques need to be adopted to deal with these risks, including: low-till and no-till farming ("moisture-saving techniques"), diversification to drought-resilient wheat varieties, switch to more resilient non-wheat crops (e.g. sunflower and other seeds), snow capture, laser levelling and other precision farming techniques. These techniques lead to an increase in productivity that will at least partially offset the decrease in yields in a drought year. The adoption of these techniques requires investment in new equipment (direct seeding machines, sprayers, rippers, snow plows etc.), knowledge and training. This is especially true for low-till and no-till farming, which requires farm-specific organizational changes and assistance, due to the complexity of these practices compared to conventional ones and the timing required for farmers to master these techniques. 

Key characteristics of the wheat farming sector in northern Kazakhstan

6. Kazakhstan has 21.5 mln ha of arable land. 15.4 mln ha are devoted to wheat, 76% of which (11.7 mln ha) is in northern Kazakhstan, the source of 80% of the country's wheat production. Wheat is the largest agricultural segment in the country, representing 50% of total agricultural production. Agricultural experts engaged by UNDP have researched the wheat sector in northern Kazakhstan and conducted informal surveys with approx. 80 farmers. They estimate that 3,041 wheat farms operate in the three northern regions, including: (i) three large agro-holdings cultivating 3 mln ha (27% of total wheat area in northern Kazakhstan); (ii) 30 large farms (50,000-200,000 ha each) cultivating 3.9 mln ha (33% of total); (iii) 2,023 small and medium farms (1,000-50,000 ha each, hereafter "SME farms") cultivating 4.7 mln ha (40% of total), with an average farm size of approx. 2,100 ha; and (iv) 1,000 family-owned, subsistence farms (50-200 ha each) cultivating 110,000 ha (less than 1% of total). The latter are considered not commercially viable.

7. Agriculture contributed approx. 4.4% to GDP in 2017 and employed 18% of the working population, or approx. 1.6 million people. Crop farming in northern Kazakhstan is more consolidated than livestock and vegetable farming elsewhere in the country, which is dominated by small farms. An estimated 88,000 people are directly employed by wheat SME farms in northern Kazakhstan. This is based on the average of 2-50 permanent workers (average 26) and 5-30 seasonal workers (average 17.5) per farm, reflecting the wide range of farm sizes. Employee ranges are derived from a 2018 study by the German-Kazakh Agriculture Policy Dialogue. Official statistics report 980,730 people employed in the agriculture and agro-processing sector in Northern Kazakhstan.

8. Wheat production contributes to the food security of Kazakhstan and its 18.5 million people. It is also a significant source of exports: wheat and wheat flour represent approx. three quarters of total agricultural exports and a significant source of hard currency for Kazakhstan. Kazakhstan is one of the top ten wheat exporters globally and the leader in flour export. Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan and Afghanistan are the largest importers of Kazakh wheat. In these Central Asian countries, wheat provides more than 60% of daily calories, and a significant portion of that wheat is imported from Kazakhstan. Wheat production in Kazakhstan is, therefore, an important source of food security for the entire region.

9. In addition to climate change, wheat farms are exposed to all other typical sector risks. Production gluts in good years, for instance, can cause prices to drop, which may offset the increase in volumes. International wheat production levels and prices also affect the price of Kazakh wheat. In years when a drought in northern Kazakhstan coincides with a substantial drop in international wheat prices, as was the case in 2010, the economic consequences can be dramatic.

Financing options for farms in northern Kazakhstan

10. In general, the agricultural sector represents only 5% of total loans outstanding in Kazakhstan, reflecting the volatility and business risks of the sector. State-owned agency KazAgro is the main source of funds and provider of financial services to farms. It offers better terms than commercial banks, which serve primarily large farms. The Agrarian Credit Corporation (ACC) is KazAgro’s lending subsidiary. 50% of its loan portfolio in 2016 (~USD 450 mln) was in direct loans, mostly for livestock breeding and working capital. The remainder was loans to agricultural credit unions and

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16 E.g. laser leveling, exact seeding, automated soil nutrition & determination system, satellite-based monitoring of crops growth and crop nutritional elements, optimized fertilizer usage, digital land management.
18 Ibid. Potatoes, vegetables, barley and melons are the other major crops, grown mostly in small, irrigated farms in southern Kazakhstan.
22 Kazakhstan’s NC7, p. 183.
Throughout the country, activities and selection of new agro-technologies and saving technologies and seed diversification would prevent maximizing the climate-resilient investments to be funded by the project are consistent with the eligibility list. Should any investments not be compatible with the eligibility list, ACC would still be able to fund them from other of its existing funding sources. Factoring in currency hedging cost, the EIB interest rate is expected to be high single-digit to low teens. ACC will pass on this rate to its borrowers, such as credit unions, who will then apply an additional margin to determine the final rate for farmers. As a result, end-loans will have very little concessionality.

ACC management has confirmed that it has limited capacity to identify and structure the financing of climate adaptation projects that would be compliant with, or could be added to, the EIB’s eligibility list, unlocking a significant source of funding. ACC management confirmed that targeted technical assistance to ACC, enabling it to draw down tranches from the climate loan, would be important to ensure timely disbursements. A number of barriers and capacity constraints have been identified at both supply and demand side that, without the GCF intervention, would prevent maximizing climate change adaptation benefits of the EIB/ACC loan.

Government support to farmers

Currently, farmers only get limited support by the Government’s extension system, which is undergoing restructuring. The Ministry of Agriculture (MoA) administers the extension budget but has no direct operational responsibility, which pertains instead to the National Chamber of Entrepreneurs (Agro-competence Center), a quasi-government entity. The latter took over operations from other government entities, in an attempt to increase the effectiveness of the extension system. A centralized seminar system – rather than on-farm advice – has proved of limited effectiveness. Staff capacities need to be upgraded and demonstration equipment modernized. Importantly, climate change adaptation does not feature prominently in the work of the extension system, with only a fraction of seminars devoted to the theme and limited expertise of the staff engaged.

In recent years, the Government has funded only the maintenance of existing stations and equipment. Large farms have installed their own equipment, but SME farms cannot afford such investments.

MoA’s National Program for Agro-Industrial Development 2017-2021 (“Agribusiness 2017-2021”) is the main policy document disciplining the sector. The program aims to: increase financing; shift gradually from direct subsidies to concessional financing; improve effectiveness of the government’s support; ensure availability of goods, services, and markets to agricultural producers; improve access to R&D; and promote the efficient use of land and water resources. The program also focuses on aggregating agricultural SMEs into cooperatives (for production, processing, marketing and access to financial services). The total budget for Agribusiness 2017-2021 is T2,374 billion (approx. USD 6.5 bln), an average of about T475 bln (USD 1.3 bln) per annum. The biggest portion of the budget is subsidies for financial instruments (21%) and another 16% is dedicated to funding KazAgro with equity or debt. Subsidies for crop production absorb 11% of budget and water resources management 19%. The remaining 33% of the budget is allocated primarily to the livestock sectors. One of the goals of Agribusiness 2017-2021 with regard to wheat is to stabilize production and reduce variability in yield. Moisture-saving technologies and seed diversification were identified as investments to be supported.

26 Exchange rate of 1 USD = 367 tenge as of mid-November 2018.
Barriers to the adoption of the adaptation solution

17. **Capacity barriers**: Baseline barriers: the agricultural extension services system is undergoing restructuring and has yet to identify the most effective modus operandi to provide advice to farmers that is actually implemented and sustained. Climate change-specific barriers: the system fails to provide farmers with knowledge and information on climate risks, adaptation technologies and practices in a systemic manner and at the required scale, preventing them from adopting the farming techniques described in paragraph 5. These techniques would reduce the loss in yield otherwise realized in case of a drought. Only a small fraction of the training seminars’ content was devoted to climate-adaptive farming. The experts delivering such seminars have no adequate training in climate change. In 204 seminars for the crop sector in 2016-17, only 25% of the content was devoted to soil moisture-saving technologies. Only one seminar specifically tackled climate change, but its content was deemed as inadequate by the agricultural experts engaged for this project. Demonstration plots are few and inadequately equipped to familiarize large numbers of farmers with the latest technologies and equipment. Because of the centralized and voluntary nature of the seminar system, follow-up with farmers on the ground is very limited. Farm-by-farm assessment and training – essential for the transition to moisture-saving techniques – is currently not taking place. The switch to innovative farming techniques requires time to master and, unless farmers receive ongoing, bespoken assistance, it is bound to fail.

18. **Information barriers**: Baseline barriers: agrometeorological information services (Kazhydromet’s equipment, its geographic coverage and means of broadcasting information to farmers) are inadequate to the current forecasting needs in northern Kazakhstan. In recent years, the Government has funded primarily operations and maintenance, not new investment. This is affecting in particular SME farms, which do not have the financial and technical capacity to install their own equipment. Climate change-specific barriers: Increased climate variability requires more accurate, localized (greater density of stations), complete and frequent data collection in order to produce reliable forecasts and advice to farmers. Large farms have partly addressed this barrier by installing their own equipment, but SME farms are unable to finance such investments on their own. In addition, accurate climate and agrometeorological information does not reach SME farms effectively, making it hard for them to anticipate and adapt to extreme weather events. Information delivery via online and mobile resources is not effective. Climate information is not properly integrated in the above-mentioned training seminars or farm-by-farm extension work. Accurate and reliable climate information is essential for the effective implementation of adaptive farming techniques (e.g. fine-tuning of planting/harvesting times in precision agriculture).

19. **Governance barriers**: Baseline barriers: already in current climate conditions, concerted action between MoA and Kazhydromet needs to be introduced/improved, as well as coordination between ACC/credit unions and the extension system to facilitate SME farm lending. Climate change-specific barriers: state policies and governance in the agricultural sector do not adequately mainstream climate risk management and adaptation objectives. The three key components of a successful climate adaptation strategy for the wheat farms – capacity building, information and financing – are not part of a comprehensive governance system. The extension system, Kazhydromet/ACC and credit unions are not engaged in a coordinated program to assist farmers in assessing, financing and implementing effective climate adaptation solutions. The lack of an integrated system for the provision of advice, climate information and financing to farmers – coupled with lack of clarity on existing government subsidies (e.g. for purchase of inputs and equipment) and complicated application procedures – prevents farmers from implementing the adaptive farming techniques.

20. **Access to finance barriers** (climate change-specific):

21. SME farms do not have the capacity and information to assess (i) the climate adaptive technologies most suited to the specific needs of their farms and (ii) the financial implications of the related investment (capex, opex, impact on yield and revenues, payback period). While climate adaptive technologies have a positive impact on yields, many external factors can cause reluctance to adopt them, such as the significant variability in wheat prices. The inability to quantify costs and benefits of the adaptive farming techniques prevents SME farms from adopting them.

22. Only a small number of loan formats are available to SME farms, and they are not tailored to the envisaged climate adaptation investments. Credit unions, which disburse loans to end-borrowers, are required to mirror ACC’s funding terms, adding a 4–5% interest rate margin to cover their operating costs and credit risks. All loans are collateralized, mature in 7–10 years and interest rates to end-borrowers range from 6% to 14.5% – lower than commercial rates, which can be up to 21%. ACC has limited familiarity with moisture-saving techniques, precision farming and other climate adaptive technologies and the financial profile of the related investments; as a result, it has not been able to design a “climate adaptation loan program” whose terms (use of proceeds, rates, maturities, etc.) are specifically suited to the needs of SME farms in northern Kazakhstan. Credit union officers lack knowledge and capacity and would not be able to support ACC in loan design, disbursement and monitoring. Limited access to finance prevents SME farms from adopting the adaptive farming techniques.

23. The EIB credit facility to ACC is available for a variety of climate loans (adaptation and mitigation) for MSMEs and midcaps. The facility has been approved and, as soon as EIB has resolved the currency hedging issues in Q1 2020, will be

29 Confirmed by ACC management in meetings in Astana.
Alignment with national priorities

24. By enhancing the climate change adaptation capacity, available information and access to finance for SME farms in northern Kazakhstan, the project is aligned with several national priorities: (1) the above-mentioned Agribusiness 2017-2021 plan; (2) the Kazakhstan 2050 Strategy calls for a modernization of the country’s farming culture to reflect the latest techniques in science, technology and management. It also intends to raise the share of the SME contribution to GDP from 26% to 50%; (3) The Agro-Industrial Development Program for 2017–2021 identifies the need to: i) involve SMEs in agricultural cooperation, ii) effectively use financial measures of state support and iii) efficiently use land and water resources; (4) Kazakhstan’s Nationally Determined Contribution (NDC) highlights the transition to a green economy as a pathway to reduce greenhouse gases (GHGs) and targets several sectors, including agriculture. The NDC highlights the importance of vulnerability analysis and technology needs assessment to enhance adaptive capacity to climate change; and (5) The GCF Readiness and Preparatory Support Proposal (hereafter “Readiness Project”), due for implementation in 2018-21, specifically targets agriculture among six priority sectors. Furthermore, training on climate-sensitive budgeting and potential mainstreaming approaches will be undertaken within MoA and the Committee of Water Resources.

25. The project will build on the previous UNDP-led, USAID-funded project Improving the Climate Resiliency of Kazakhstan Wheat and Central Asian Food Security (“UNDP/CRW”). With USD 2.2 mln grant funding from USAID, the goal of UNDP/CRW was to catalyse the process of adaptation in Kazakhstan’s wheat sector and open a regional dialogue on the climate change challenges to Central Asian food security. The UNDP/CRW project was carried out in two phases, each funded with USD 1.1 mln, with the first phase implemented from September 2012-2014 and the second phase running from October 2014 to September 2016. The project included three main components: (i) improved Information for Climate-Resilient Wheat Production in Kazakhstan, focused on improving the understanding of expected climate impacts in wheat growing regions of Kazakhstan and developing a system of continuously delivering that information to key stakeholders; (ii) mainstreaming Climate Resilience into Wheat Production in Kazakhstan, focused on providing technical support to the government, producers, the research community and others to successfully improve the resilience of wheat production. This component was specifically focused on bringing these stakeholders together to identify near, medium and long-term adaptive actions and then mainstream those actions into existing decision-making processes; and (iii) regional Dialogue on Wheat, Climate Change and Regional Food Security, focused on engaging the other four Central Asian countries and Afghanistan (the primary importers of Kazakh wheat) in a dialogue on how to deal with the possible fluctuations in wheat availability and price. The proposed project also builds on the UNDP/GEF project “Supporting sustainable land management in steppe zone through integrated territorial planning and agro-environmental incentives” (ending in July 2020), which has pilots on sustainable wheat production in Kostanay, Akmola and North Kazakhstan.

B.2. Project/Programme description (max. 3 pages)

26. The project will combine: (i) a small GCF grant for technical assistance and capacity building, strictly climate adaptation-focused; (ii) Government grants to address related baseline issues; and (iii) significant loan co-finance from ACC, drawn from the EIB facility and other ACC sources.

Output 1: Enhance capacity, information and governance to upscale the adoption of climate-adaptive farming techniques in the northern Kazakhstan wheat sector

27. Activity 1.1 (GCF grant + MoA grant co-finance): Enabling extension services to effectively deliver knowledge and information on climate risk and adaptation technologies to farms in northern Kazakhstan. MoA grants will address baseline issues by funding the reorganization of the extension system to improve coverage of wheat-producing farms in the north (especially SMEs), including: integration of trainings with farm visits; hiring of more qualified extension staff and international experts; upgrading of the farm demonstration equipment and plots; and establishment of clear oversight and reporting lines under the MoA. Gender considerations will be core to this activity. The GCF grant will fund the design and implementation of a training program on climate adaptive techniques for wheat farming in northern Kazakhstan. The training will target experts and extension staff members (current and newly hired) at delivering extension advice to farmers, with the goal to enable them to conduct effective farm-specific technology assessment and

30 As previously stated, should any investments not be compatible with the eligibility list, ACC would still be able to fund them from other of its existing funding sources.

31 Energy, agriculture, waste, land use, land use change and forestry.

32 Details on the priority sectors to be included in the Funding Proposal.
capacity building, so that farmers can fully embrace the adaptative farming techniques and modify farm management and operations accordingly. All other activities will be funded by MoA as baseline.

28. **Activity 1.2 (GCF grant + Kazhydromet grant co-finance): Enhancing climate data and information received by farms to plan and implement adaptation measures.** Kazhydromet grants will fund baseline investments in agrometeorological equipment (including radars), and related O&M and staff costs. The GCF grant will fund additional investments required by climate change, including: 16 agrometeorological stations in the 3 target regions of Kostanay, North Kazakhstan and Akmola; software for yield, soil moisture and weather projections and data analysis; improved dissemination of agrometeorological information and forecasts to farms (especially SMEs), enabling them to take both short-term (e.g. planting time) and long-term (e.g. switch to moisture-saving techniques) decisions to face the adverse consequences of climate change. The latter will include online and mobile systems as well as integrating climate data and forecasts in seminars and extension work.

29. **Activity 1.3 (GCF grant + MoA grant co-finance): Mainstreaming climate risk management and adaptation objectives in the state support systems in the agricultural sector.** The GCF grant will support the Government in the design and implementation of a comprehensive governance system to mainstream climate risk management in agriculture. The new governance framework will coordinate the mandates and activities of MoA (on the extension front), Kazhydromet (on the provision of climate change data and forecasts) and ACC and credit unions (on loan financing). The GCF grant will also support the review of the existing agricultural subsidies and incentives, with the goal to more effectively promote adaptation objectives. Support will be in the form of technical assistance and capacity building provided by international and national experts to MoA officials, with the double objective of (i) reviewing, rationalizing and climate-proofing the existing system of agricultural subsidies (pertinent to wheat farming) and (ii) enabling MoA officials to include climate change considerations in any future state support initiatives to the sector. Government co-finance will focus on enhancing the general effectiveness and efficiency of the state support to farmers.

**Output 2: Design and implement a climate adaptation loan program for SME farms in northern Kazakhstan, unlocking significant ACC loan co-financing**

30. **Activity 2.1 (GCF grant): Building the capacity of ACC to design and implement a climate adaptation loan program for SME farms in northern Kazakhstan.** The GCF grant will support ACC and the credit unions in designing the structure, terms, eligibility criteria, use of proceeds, credit approval and disbursement procedures of a loan program to finance the adoption of climate adaptive technologies for wheat farming (described in the pre-feasibility study). The concessionality of the loan program will be minimized to reflect the increase in yield resulting from the adaptive techniques. UNDP will also support the training of ACC and credit union loan officers to maximize the effectiveness of the loan program. Loan officers will be trained to work in parallel with extension officers to assess farm-specific investment needs, market the adaptation loans to farmers, explain application procedures, screen applications and make recommendations for credit approval. Impact monitoring and reporting will be integrated in the loan program. As a result of this activity, the ACC will be enabled to effectively mainstream climate risk management and climate adaptation into their loan programmes starting from product design to delivery of the loans and reporting.

31. **Activity 2.2 (ACC co-finance, GCF grant for technical assistance): Implementation of the climate adaptation loan programme.** ACC will commit up to USD 25 million in funding to credit unions, which will be on-lent to SME farms via the climate adaptation loan program designed under Activity 2.1, over the project period. ACC will segregate this amount out of funding it receives from the EIB facility and, if needed, other sources including Government loans. The EIB loan can be disbursed to ACC in up to 10 tranches of at least EUR 5 million each and maturities of up to 15 years; under Activity 2.1, GCF project will support ACC in ensuring the compliance of the climate adaptation loan program with the eligibility and ESG criteria required for disbursement of the EIB facility, through the set-up of adequate compliance, governance and monitoring systems. The exact size of the loan program will be determined during the proposal development stage, taking into account bottom-up estimates of climate adaptive investment needs per typical SME farm and number of targeted farms. A small portion of the GCF grant will be used for advice, facilitation and technical assistance, for instance for monitoring the results of the loan program and knowledge management.

**Theory of Change**

32. These outputs and activities closely mirror the theory of change summarized in Annex 2. The ultimate outcome is to ensure that farms in northern Kazakhstan have the capacity, information and financial means to switch to farming techniques that enhance resilience to drought, whose frequency and intensity is predicted to increase as a result of climate change. Such techniques include low-till and no-till farming, snow harvesting, adoption of climate-resilient seeds, precision agriculture and crop diversification, among others. The adoption of these techniques requires (i) farm-specific capacity building and problem assessment, (ii) accurate, timely and dynamic climate data and forecasts on which to base the selection of adaptive techniques, (iii) coordinated government action, centred on climate change adaptation, and (iv) new sources of finance, especially for SME farms, through tailored loans reflecting the financial profile of the envisaged adaptation investments. Outputs 1 tackles the first three barriers in a coordinated fashion, exploiting synergies between activities focused, respectively, on (i) the climate effectiveness of the extension system, (ii) the upgrading of agromet equipment and services, and (iii) mainstreaming climate adaptation in the state support
system for agriculture in northern Kazakhstan. Output 2 facilitates the disbursement of significant co-finance from ACC through the design and implementation of a climate adaptation loan program tailored to the needs of SME wheat farms in northern Kazakhstan. While Output 1 will directly and indirectly benefit all wheat farms in northern Kazakhstan, Output 2 focus on SME farms, whose borrowing capacity is more limited than that of large farms and agro-holdings.

33. To maximize overall project effectiveness, each output includes activities that fix baseline issues, co-financed by different government entities (MoA, Kazhydromet and ACC). Building on a stronger baseline, GCF will fund activities that directly address climate change add-in. For instance, it would be suboptimal to engage in climate adaptation-related capacity building without a well-organized and effective agricultural extension system; for this reason, Activity 1.1 will include baseline sub-activities aimed at improving the overall performance of the existing extension system, and GCF-funded sub-activities integrating climate change aspects.

Consistency with national regulatory and legal framework

34. Activities in the proposal are consistent with the national regulatory and legal framework. None of the activities requires a change in existing laws or regulation.

Rationale for UNDP as Accredited Entity

35. The Ministry of Energy (National Designated Authority), the Ministry of Agriculture and KazAgro (the state-owned parent company to ACC) have requested UNDP to assist in the development of this GCF project. UNDP assisted with the development of Kazakhstan’s Third-Sixth National Communication to the UNFCCC in 2013 and the development of the Seventh NC in 2017. This work has led to the UNDP Country Office having an in-depth understanding of Kazakhstan’s institutional structures and climate change challenges. Furthermore, UNDP has considerable experience in Kazakhstan and internationally in implementing climate change adaptation and mitigation interventions. The national knowledge has been generated through many projects that UNDP has implemented in partnership with GoK.33

36. Having led the implementation of the CRW project detailed in B.1, UNDP has gained considerable experience that is directly applicable to the proposed GCF project. Namely, the CRW project supported the establishment of three demonstration plots (one in each of the three regions of northern Kazakhstan) along with targeted trainings on adaptation technologies for farmers. It piloted some of the activities that will be upscaled in the proposed GCF project, in particular, cereal crop diversification methods using different cropping and rotation technologies with different sowing periods of the spring wheat crops (piloted in Akmola region), and cultivation of spring wheat varieties using no tillage agriculture technological conservation methods as well as cultivation of winter cereal crops (Kostanay region).

37. UNDP has also worked in partnership with the Fund for Financial Support of Agriculture (another KazAgro subsidiary) to implement the GEF-funded project Improving sustainability of the Protected Area (PA) system in desert ecosystems through promotion of biodiversity-compatible livelihoods (USD 4.1 mn, 2013-2018). The project targeted communities and ecosystems in desert and semi-desert regions of Kazakhstan to promote sustainable natural resource management. UNDP provided technical assistance to establish the ‘Eco-Dam’ micro-credit scheme that helps targeted communities access funding for application of sustainable agricultural practices. The micro-credit scheme offers concessional loans to natural resource users to implement alternative and sustainable practices, such as: water-saving technologies, livestock breeding in distant pastures, bee-keeping and the creation of pond farms.

38. UNDP has also supported Kazakhstan in the production of its National Adaptation Plan.

39. UNDP has a long history of successful partnerships with the GoK and other regional governments, specifically in sustainable area-based development, adaptive governance and climate change.34 UNDP has a strong presence in all six Central Asian countries,35 where it has supported climate change and sustainable development initiatives in the areas of climate change adaptation and mitigation, integrated water resource management, disaster risk reduction and agricultural resilience. Some of these initiatives include: i) Central Asia Climate Risk Management Programme (CACRM), ii) Central Asia Regional Risk Assessment (CARRA) and iii) pilot projects on improved resilience of rural communities and agricultural livelihoods co-financed by GEF, Adaptation Fund and bilateral partners in Kyrgyzstan, Turkmenistan and Uzbekistan.36

Implementation Arrangements

40. The project will be implemented following UNDP’s National Implementation Modality (NIM), according to the Standard Basic Assistance Agreement between UNDP and the Government of Kazakhstan and the policies and procedures outlined in the UNDP POPP (see https://info.undp.org/global/popp/ppm/Pages/Defining-a-Project.aspx).

33 Findings and lessons learned from these projects are presented in Section 6.1 of the Pre-Feasibility Study.
34 The findings and lessons learned from these projects are outlined in the Pre-Feasibility Study and will be further detailed in the Funding Proposal.
35 Namely, Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.
36 These UNDP projects will be further detailed during the development of the Funding Proposal and Feasibility Study.
41. The Ministry of Agriculture will be the Implementing Partner/Executing Entity for this project and will be accountable to UNDP for managing it, including the monitoring and evaluation of project interventions, achievement of project outcomes, reporting and effective use of UNDP resources.

42. UNDP will provide a three-tier oversight and quality assurance role through the Country Office in Kazakhstan, and BPPS/UNDP Global Environmental Finance Unit in Istanbul and HQ in line with the requirements outlined in the AMA. This includes management of funds, programme quality assurance, fiduciary risk management, timely delivery of financial and programme reports to GCF and other requirements as per the AMA. In addition, the Government of Kazakhstan may request UNDP to provide direct project services for this project (support to NIM).

43. The Project Board (PB) will be composed of representatives of: UNDP, MoA, Ministry of Ecology, Geology and Natural Resources, KazAgro, National Chamber of Entrepreneurs. The Project Board is responsible for taking, by consensus, management decisions in accordance with standards that shall ensure management for development results, best value for money, fairness, integrity, transparency and effective international competition.

44. The National Project Director (NPD) will be appointed by the NIM Partner to execute the project on a day-to-day basis on behalf of MoA and will be accountable to PB. The NPD’s prime responsibility is to ensure that the project produces results specified in the project document, meet required standard of quality, timeliness and cost criteria. In addition, the NPD will be a liaison between UNDP and the executing/implementing agency as well as will other key Ministries engaged in various components and activities as responsible parties/strategic partners. The International Chief Technical Advisor (CTA) will provide regular technical guidance to the project management and technical teams in managerial and technical issues. He/she will be hired for a long-term during the entire project implementation period by UNDP based on UNDP recruitment procedures. The Project Manager (PM) will manage the project on a day-to-day basis. He/she will be hired by UNDP based on its national project staff recruitment procedures. The Project Manager's function will end when the final project terminal evaluation report and other documentation required by the GCF and UNDP has been completed and submitted to UNDP.

45. While the overall execution/implementation of project will rest upon the MoA as an implementing partner, concrete outputs and activities/sub-activities will be implemented by consultant’s teams and organizations through open competitions and request for proposals as well as by various government entities as responsible parties, through Letters of Agreement between UNDP and responsible parties (i.e. government and quasi government structures, e.g. extension centers, networks of Kazhydromet and Kazvodhoz).

46. Technical Advisory Working Groups (TAWG) will support the CTA and PM and will provide inputs to and endorsement of the design and quality of the project outputs. TAWGs members will be drawn from government, private sector, academia, international organizations, and civil society to provide guidance and technical advice on the project. A balanced representation of women and men in the TAWGs will be ensured. A Gender Advisor will be engaged by the project and will be a member of all TAWGs to ensure that gender is adequately mainstreamed in all technical discussions.

47. Further details, roles and responsibilities will be outlined in the Funding Proposal.

Risks and Mitigation Measures

The risks outlined below have been identified at the concept phase. A detailed risk analysis and mitigation plan will be outlined in the Funding Proposal.

48. Risk: exogenous factors, such as a significant drop in international wheat prices, may disincentivise SME farms from borrowing under the climate adaptation loan program. Mitigation measure: technical assistance to farmers provided by a revamped extension system will emphasize the long-term positive impact on yields and farm revenues produced by the adoption of climate adaptive technologies. While short-term market dynamics are unavoidable, enhanced climate resilience makes farm businesses more financially sustainable over the long term.

49. Risk: project complexity and poor coordination between UNDP, MoA, Kazhydromet, ACC and beneficiary farms could reduce the efficiency and effectiveness of project implementation. Mitigation measure: regular meetings will be held between project staff, UNDP staff, relevant government institutions and other stakeholders (including donors) to promote coordination and effective implementation of project interventions. MoA has a number of coordination mechanisms at the technical (Task Force Group) and interagency levels that will be engaged for the coordination of the project activities with the partners and beneficiaries in addition to the Project Board. Improved and coordinated governance is one of the core objectives of the project and is tackled directly by Activity 1.3, thus the project will directly support enhanced coordination of technical assistance and state agricultural support interventions as well as outreach to farmers through enhanced extension services.

37 State Enterprise “KazVodHoZ” (Kazakh Water Management/Economy) of the Water Resources Committee of MoA.
50. **Risk**: by the time of project inception, most of the EIB facility has been used by ACC for other eligible projects and is therefore unavailable as source of ACC co-finance. **Mitigation measure**: while the EIB facility is a sizable source of funds for ACC, it is not the only one. ACC receives funding from the Government on a regular basis. ACC’s co-financing commitment will not be dependent on the availability of the EIB facility.

### B.3. Expected project results aligned with the GCF investment criteria (max. 3 pages)

#### Impact Potential

51. The project will enhance the climate resilience of the wheat farming sector in northern Kazakhstan, which constitutes 76% of the arable land devoted to wheat and 80% of wheat production in Kazakhstan. It is also the farming region that is most vulnerable to climate change (increasing frequency and intensity of droughts) due to the predominance of rainfed agriculture. The project will directly contribute to the transition to climate-adaptive farming on 11.7 million hectares of arable land. In 2013, a year characterized by normal climate conditions, the three regions of northern Kazakhstan produced almost 12 million tonnes of wheat.

52. The project will directly benefit an estimated 88,000 people (0.5% of population) – those directly employed in wheat farming in the north and their families, as discussed in Section B.1. While some SME farms may not take advantage of the loan program, the services provided under Output 1 will be available to all SME farms and, in fact, also the large farms. The latter are conservatively not taken into account in the direct beneficiary calculation. Furthermore, the conservative estimate of direct beneficiaries does not take into account consumers of wheat that will benefit from a steadier supply of wheat as a result of the project – it only takes into account those directly employed in SME wheat farms. The estimate of indirect beneficiaries will be refined during the FP formulation and could be extended to all those employed in the agriculture and agro-processing sector in Northern Kazakhstan - 980,730 according to official statistics (5.2% of population).

53. In addition, lessons learnt, new governance, expertise and procedures implemented by the project will be indirectly applicable to other agricultural sectors and regions where the Government may decide to initiate, in the future, other climate adaptation projects.

#### Paradigm Shift

54. The GCF project will mainstream climate risk management and climate-resilience objectives into the existing state support programs for the agricultural sector in northern Kazakhstan, representing the large majority of arable land in the country. This will represent a change of paradigm in the governance of the agricultural sector and in the state support and investment frameworks, which currently focuses only on the current economic and employment relevance of the sector while disregarding how the sector will be negatively affected by climate change going forward. A systemic change will be catalysed in the national extension services and agrometeorological information services systems. It will enhance the capacities of the state agents (MoA, Kazhydromet and ACC) to deliver technical advice, data and climate information to all wheat farms in northern Kazakhstan and financing focused on SME farms.

55. Due to the productivity increase resulting from the adoption of climate-resilient technologies, the project’s interventions will produce long-lasting effects and will be financially sustainable after project end. In addition, for the same reason, it is expected that after the project’s expiration farmers will be able to access finance – either additional loan programs offered by the ACC/credit unions or perhaps even from commercial banks – on an ongoing basis and without need for additional assistance.

56. The project will generate knowledge and learning potential. Through the project, the extension system will gain valuable experience in assessing the need and applicability of climate adaptive techniques on a farm-specific basis. Such experience and related procedures can be replicated in and adapted to other segments of the agricultural sector in Kazakhstan. Similarly, the joint and coordinated action of MoA, Kazhydromet and ACC – one of the core features of this project – can form the basis of future climate adaptation projects in agriculture in Kazakhstan. The ACC’s capacity and systems for climate risk management (CRM), built through this project, could be applied across the ACC’s entire loan portfolio and to future loan issuance. Therefore, the project has the potential to catalyze much greater investment into adaptation in the broader agricultural sector.

57. ACC has also been nominated by Kazakhstan’s NDA for accreditation to the GCF. Any lessons learnt, and experience accumulated as part of this project will enhance its ability to perform the accredited entity role in the future.

58. The proposed agricultural practices represent tested solutions already implemented in other parts of the world (e.g. Canada) to deal with similar climate change challenges as those faced by northern Kazakhstan. These solutions were successfully piloted by the UNDP/CRW project on which the proposed GCF project will build on. The project will not pilot any untested solutions. What is innovative in the Kazakh context is the set-up of a comprehensive system of farmers assistance, climate information gathering and dissemination, and tailored financial offering to significantly increase the penetration of these practices, especially among the most vulnerable SME farms. This system will be
59. Last but not least, the governance restructuring implemented by the project, while initially specific to the crop sector in northern Kazakhstan, will enable the Government to tackle more effectively climate change issues in other regions and agricultural sectors – notably, livestock (countrywide) and vegetable farming (southern Kazakhstan). The former sector is of increasing importance to Kazakhstan as a form of economic diversification from hydrocarbons and the latter, while occupying a much smaller area than crop farms, is more fragmented and employs a larger number of people. This upscaling is a central pillar of Kazakhstan’s 2050 Strategy and Agro-Industrial Programme.

Sustainable Development

60. The project will build the technical capacity of MoA, Kazhydromet and ACC to fast-track the adoption of climate-resilient techniques in northern Kazakhstan and put in place a system of governance that will maximize the effectiveness of the envisaged interventions. The practices and technologies promoted by the project will result in an increase in farm productivity that will reduce the negative impact of droughts on farm revenues and profits. Once the barriers of limited expertise, information and access to finance are removed, preserving and upscaling these adaptation practices and technologies will occur without further need for technical assistance and capacity building. ACC loans will be designed so that they comply with the principle of minimum concessionality, taking into consideration the increased revenues derived by farmers over the long-term and making sure that no over-subsidization or crowding-out of commercial lenders occur.

61. The project will contribute to improved food security for Kazakhstan and surrounding countries, which rely on Kazakh wheat imports. This goal is identified in the Kazakhstan Nationally Determined Contribution (NDC). In addition, the project will contribute to the following Sustainable Development Goals (SDGs): SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 3 (Good Health and Well-being), SDG 5 (Gender Equality), SDG 13 (Climate Action) and SDG 15 (Life on Land, which includes the development of the agricultural sector).

62. The socio-economic and environmental co-benefits of the project include: (i) increased commercial agricultural output and improved sustainability of exports; (ii) enhanced nutrition, health and social cohesion as a result of improved food security in Kazakhstan and Central Asia; (iii) reduced erosion and improved soil moisture and quality; and (iv) increased gender sensitivity of programs in the agricultural sector. With regards to the latter, women and women-headed households in Kazakhstan are more prone to poverty than those headed by men, and therefore have less capacity to manage the impacts of climate change. The project will support implementation of the Concept of Family and Gender Policy of the Republic of Kazakhstan until 2020, related in particular to expanding and improving entrepreneurial skills of women, promotion of female-led small and medium-sized businesses in the agricultural sector and their improved access to financing. By reducing the impacts of climate change on agricultural production, the project will reduce gender inequality and will promote gender-sensitive development. The project will engage rayon level administrations in northern Kazakhstan, particularly departments on social assistance and rural entrepreneurship, and work with them to devise and implement targeted business trainings for vulnerable women in the northern regions. The project will also engage with the Council of Business Women of NCE RK “Atameken” to mainstream gender issues during project implementation and make sure that women entrepreneurs fully benefit from the financial and non-financial assistance put in place by the project.

Needs of the Recipients

63. The past four years have been particularly challenging for the Kazakhstan economy: GDP growth came to a halt in 2015 and 2016, and only started recovering in 2017. The current account swung to negative in 2015, triggering a large depreciation of the local currency and high single-digit inflation. Fiscal balances switched from a surplus in 2014 to a 6% deficit in 2015 and have remained in deficit since. The economic downturn affected the banking sector and availability of credit to households and corporates (down from 46% of GDP in 2015 to 37% in 2018). While debt/GDP is relatively low by developing country standards (22%), the IMF recommended a rationalization of government subsidies, in favour of structural economic diversification from oil and private sector-friendly reforms. One of the project co-benefits is to

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38 Intended Nationally Determined Contribution (INDC). 2015. Submission of the Republic of Kazakhstan to the UNFCCC.
improve access to loans for SME farms, which will help the sector transition towards more commercially sustainable sources of finance and away from subsidies. North Kazakhstan is among the poorest in the country with 20.1% of the population having an income below the minimum subsistence value\textsuperscript{42}. This is largely a result of the high number of people with low incomes heavily dependent on low value-added agriculture\textsuperscript{43}. Indeed, the agricultural sector provides employment to 48.5% of population of the region and contributes only 18.6% of the region’s gross value added (2015).

**Country Ownership**

65. The proposed project is fully country-driven and was developed based on extensive consultations between UNDP and the project stakeholders. Climate change adaptation is a priority in Kazakhstan’s NDC and in the Agro-Industrial Programme. Targets specified in the NDC focus on preventing future climate change-related damage and losses in the agricultural sector. The GCF project is closely aligned with these targets. The government has also developed several sectoral plans and programmes for adaptation in vulnerable sectors, including water, agriculture and disaster risk management (such as the above-mentioned Agribusiness 2017-2021).

**Efficiency and Effectiveness**

The project will achieve cost effectiveness and efficiency by:

66. Using GCF grants exclusively for activities with no financial reflows but with the potential to unlock new financial resources. Grants will fund: training and other capacity building activities for extension officers, ACC/credit union loan officers and farmers; climate data and information awareness initiatives; and support to the Government to set up an integrated climate adaptation governance system.

67. Careful fine-tuning of project budget. Indicative figures provided in this concept note will be thoroughly reviewed in the feasibility study and funding proposal, taking into account the cost of technical services provided and per-unit benchmarks (grant per beneficiary or per farm size).

68. Involving a significant amount of co-finance to (i) cover baseline activities and (ii) as a source of quasi-commercial loans to SME farms. MoA will co-finance the baseline restructuring of the extension system. Kazhydromet will co-finance the baseline upgrade of the agromet network and equipment, as well as ongoing O&M and staff costs. ACC will commit a credit line to credit unions for subsequent on-lending to farmers, targeted at climate-resilient investments. The co-finance ratio (total co-finance / GCF grant) is expected to be 4.7x.

69. Designing the terms of the climate adaptation loan program in order to minimize concessionality. Since climate adaptive farming techniques result – all else being equal – in an increase in yield, farmers are expected to contribute to the investment by taking loans rather than straight grants. This is also consistent with the MoA’s plan as articulated in Agribusiness 2017-2021. While rates on ACC/credit union loans will be more favourable than those charged by commercial banks – in recognition of the inherent business volatility of the agricultural sector and in line with ACC’s mandate to facilitate agriculture financing – they still require a financial commitment from the borrower and are far from “free money”. The feasibility study and funding proposal will contain a more detailed assessment of the financial IRR realized by farmers adopting the envisaged climate-resilient techniques and impact on debt affordability.

70. Loan disbursement will be subject to the normal credit process and risk assessment conducted by credit unions. Farms that, for a variety of reasons, are not creditworthy or present a very high risk of default may not pass the credit union’s loan approval process. The ACC and credit unions will be under no obligation to disburse grants when they deem it financially too risky.

71. The project does not envisage a direct subsidy to farmers to purchase equipment or lower operating costs. Rather, it uses grants to facilitate farmer training, enhance access to information, expand ACC’s loan offering and adapt it to the climate-resilient investments, facilitate farmers’ access to such loans and support a thorough and selective loan approval process. While minimizing concessionality, the project creates a viable incentive for the adoption of farming techniques that will be more and more necessary as the frequency and intensity of droughts increase with climate change.

<table>
<thead>
<tr>
<th>B.4. Engagement among the NDA, AE, and/or other relevant stakeholders in the country (max ½ page)</th>
</tr>
</thead>
<tbody>
<tr>
<td>72. The proposed project was developed based on extensive consultations between UNDP and the following: Ministry of Energy (NDA), Ministry of Agriculture, Kazakh Agrotechnical University, Union of Farmers of Kazakhstan, Damu Entrepreneurship Development Fund, KazAgro and more specifically its lending unit ACC, EIB as a provider of a large credit line to ACC, the National Chambers of Entrepreneurs, Kazhydromet, Barayev Research Institute, and local farmers. The development of GCF portfolio in Kazakhstan will be implemented in a phased approach, with the ultimate intention</td>
</tr>
</tbody>
</table>

\textsuperscript{42} National Adaptation Concept.  
\textsuperscript{43} Agency of the Statistics of the Republic of Kazakhstan.
of building capacities and accrediting a Direct Access Entity. This project will be the first GCF proposal from Kazakhstan in the adaptation sector and will focus primarily on capacity building activities.

73. During the project implementation the NDA will be included as a member of the Project Board and will receive full information about the project progress and results. This will enable the NDA monitoring implementation of the GCF Country Programme and coordinating the GCF portfolio in the country considering new projects and priorities to be addressed for the GCF.

C. Indicative Financing/Cost Information (max. 3 pages)

C.1. Financing by components (max ½ page)

<table>
<thead>
<tr>
<th>Output</th>
<th>Indicative cost (USD)</th>
<th>GCF financing</th>
<th>Co-financing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Amount (USD)</td>
<td>Financial Instrument</td>
</tr>
<tr>
<td>Output 1</td>
<td>46,000,000</td>
<td>10,000,000</td>
<td>Grant</td>
</tr>
<tr>
<td>Output 2</td>
<td>28,000,000</td>
<td>3,000,000</td>
<td>Grant</td>
</tr>
<tr>
<td>PMC</td>
<td>3,700,000</td>
<td>650,000</td>
<td>Grant</td>
</tr>
<tr>
<td>Indicative total cost (USD)</td>
<td>77,700,000</td>
<td>13,650,000</td>
<td>Grant</td>
</tr>
</tbody>
</table>

C.2. Justification of GCF funding request (max. 1 page)

74. As a result of the economic and financial crisis that started in 2014 and from which Kazakhstan is only starting to recover, the Government has more limited means to support the agriculture sector than in the past. As discussed above, the budget in still in deficit. Small grant funding from GCF will allow the mobilization of significant loan co-finance, specifically dedicated to addressing a climate adaptation project. It must be noted that, in addition to providing meaningful grants via MoA and Kazhydromet, the Government will also incur additional liabilities because of the drawdown of the EIB facility by ACC, which is also a fully state-owned entity. Should for any reason the EIB loan not be available at the time of the GCF project inception, ACC will commit to co-finance out of its other funding sources, which include the Government, financial markets and multilateral agencies. All of these sources will also result in additional sovereign liabilities.

75. With regards to alternative private sources of capital, agriculture only represents a fraction of the total loan book of the banking system in Kazakhstan (just over 5% in 2016). As previously discussed, commercial banks only lend to the large farms and, even if available, their terms would be prohibitive for SME farms (17-21% interest rates.) The predominant source of funds for SME farms are credit unions, which are in turn primarily funded by the ACC. Indeed, the primary raison d’etre of ACC is to fill the funding gap for the agricultural and agribusiness sector in the country. ACC is therefore the natural partner when it comes to promoting new financing tools for farmers.

76. GCF grants for technical assistance, which represent just 18% of the total project budget, are necessary to enable the design and disbursement of these low-concessionality loans by ACC, as well as other capacity building, awareness and governance activities that are crucial to the overall success of the GCF project and its ability to address climate change additionally affectively. As discussed in C.3, the potential for replicability and scalability of the project is significant, which further justifies the use of GCF grants.

C.3. Sustainability and replicability of the project (exit strategy) (max. 1 page)

77. Financial sustainability. The main source of project sustainability is the increase in yield generated by adaptive farming, which all else being equal translates in an increase in farm revenues. Once farms have switched to moisture-saving and other adaptive techniques, there is a clear financial incentive to continue using those techniques. IRR simulations will be included in the Funding Proposal as further evidence.

78. Diversification of sources of finance. Because of technical assistance received, SME farms will be well-positioned for securing loan financing from financial service providers for other adaptation interventions they may require in the

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44 5% of the total budget of Outputs 1 and 2.


46 Estimate provided by the Association of Credit Unions.
future. Importantly, the climate adaptation loan program designed by the project could be easily replicated in ACC’s future lending operations. Once SME farms have gained access to finance and realized the financial benefits of implementing climate-resilient techniques, they should become more appealing as customers for a wider range of financial institutions and may start borrowing at commercial terms for future investment and working capital needs.

79. **Enhancement of extension and agrometeorological systems.** Agricultural extension services in northern Kazakhstan will be significantly enhanced and equipped with climate change specific knowledge and expertise. This will ensure continued support for farms in the region as they deal with climate adaptation and other business-related issues. An O&M plan will be developed for the project investments, such as the extension centres and agrometeorological monitoring equipment. This plan will include budgeting for the human and financial resources required for project and post-project management. Domestic financing (from the budgets of designated authorities) will support O&M. The responsibility for undertaking O&M will also be transferred to the relevant government agencies, institutions and local communities. The possibility to recover at least part of the cost of supplying extension and agromet services through user charges will be investigated.

80. **Stakeholder engagement.** The Funding Proposal will be designed in consultation with a wide diversity of Kazakh stakeholders and in alignment with national policies, strategies and programs. The concepts underpinning the project were developed in close collaboration with national government, academia, KazAgro/ACC and the private sector.

81. **Knowledge generation and transfer.** GCF resources will be used to strengthen knowledge generation and transfer amongst wheat farms in northern Kazakhstan to ensure the long-term sustainability of the project’s activities. Through raising awareness of the advantages of adaptation interventions, the project will promote participatory and peer-to-peer learning. This will foster a culture of information sharing, concentrating on topics.

82. **Geographic and sectoral replicability and scalability.** The project targets a large agricultural constituency, but other equally large segments exist. For instance, the project could be replicated in the livestock sector (countrywide) or vegetable farming sector (southern Kazakhstan). The ACC’s CRM capacity and systems, built through this project, could be applied across the ACC’s entire loan portfolio and to future loan issuance. Therefore, the project has the potential to catalyze much greater investment into adaptation in the broader agricultural sector. In addition, replicability in other countries is possible. For instance, Kazakhstan’s experience in moisture-saving and other adaptive wheat farming techniques could be showcased and replicated elsewhere in Central Asia and Eastern Europe.

83. **Other sustainability elements include:** the mainstreaming of climate change adaptation into existing/enhanced state agricultural support systems; the enhancement of the national agricultural policies and support systems; and building of the knowledge base within national entities such as MoA, Kazhydromet, ACC and its parent company KazAgro.

D. **Supporting documents submitted (OPTIONAL)**

- Map indicating the location of the project/programme
- Diagram of the theory of change
- Economic and financial model with key assumptions and potential stressed scenarios
- Pre-feasibility study
- Evaluation report of previous project
- Results of environmental and social risk screening

**Self-awareness check boxes**

Are you aware that the full Funding Proposal and Annexes will require these documents? Yes ☒ No ☐

- Feasibility Study
- Environmental and social impact assessment or environmental and social management framework
- Stakeholder consultations at national and project level implementation including with indigenous people if relevant
- Gender assessment and action plan
- Operations and maintenance plan if relevant
- Loan or grant operation manual as appropriate
- Co-financing commitment letters

Are you aware that a funding proposal from an accredited entity without a signed AMA will be reviewed but not sent to the Board for consideration? Yes ☒ No ☐
Annex 1: Map Indicating the Location of the Project

Figure 1: Map of Kazakhstan’s regions

![Map of Kazakhstan’s regions](source)


Figure 2: Changes in average annual temperature (celsius) in 2040-2059 (A and B) and 2080-2099 (C and D) with RCP4.5 and RCP8.5.

<table>
<thead>
<tr>
<th></th>
<th>RCP4.5</th>
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<th>RCP8.5</th>
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</thead>
<tbody>
<tr>
<td>A)</td>
<td><img src="source" alt="Map A" /></td>
<td><img src="source" alt="Map B" /></td>
<td></td>
</tr>
<tr>
<td>B)</td>
<td><img src="source" alt="Map C" /></td>
<td><img src="source" alt="Map D" /></td>
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</table>

Source: NC7, p. 147.
## Annex 2: Theory of Change

**Outcome:**

- Wheat farmers in northern Kazakhstan adapt to increasing frequency and severity of droughts by adopting climate-resilient farming techniques

### Outputs

1. **Enhance capacity, information and governance** to upscale the adoption of climate-adaptive farming techniques in the northern Kazakhstan wheat sector

2. **Design and implement a climate adaptation loan program** for SME farms in northern Kazakhstan, unlocking significant ACC loan co-financing

#### Activities

1.1. Enabling extension services to effectively deliver knowledge and information on climate risk and adaptation technologies to farms in northern Kazakhstan

1.2. Enhancing climate data and information received by farms to plan and implement adaptation measures

1.3. Mainstreaming climate risk management and adaptation objectives in the state support systems in the agricultural sector

2.1. Building the capacity of ACC to design and implement a climate adaptation loan program for SME farms in northern Kazakhstan

2.2. Implementation of the climate adaptation loan programme

### Barriers

- **Capacity:** extension system ineffective at providing farmers with climate adaptation knowledge (baseline + CC)

- **Information:** agromet systems inadequate to current and future forecasting required by CC (baseline + CC)

- **Governance:** inadequate coordination between institutions (MoA, Kazhydromet, ACC) to effectively mainstream CC adaptation in government policies (baseline + CC)

- SME farms have limited capacity to evaluate the most effective resilient farming techniques and their financial implications, also limiting their ability to access loans for the financing of such techniques

- ACC has limited capacity to tailor its loans to climate resilient farming techniques. Current loan offering covers only standard capex and working capital needs

- Lacking capacity to design a climate resilient loan program, ACC is unable to tap the EIB specifically for that use

### Note:

- Green: GCF grant
- Blue: Co-finance
- Grey: GCF grant and co-finance