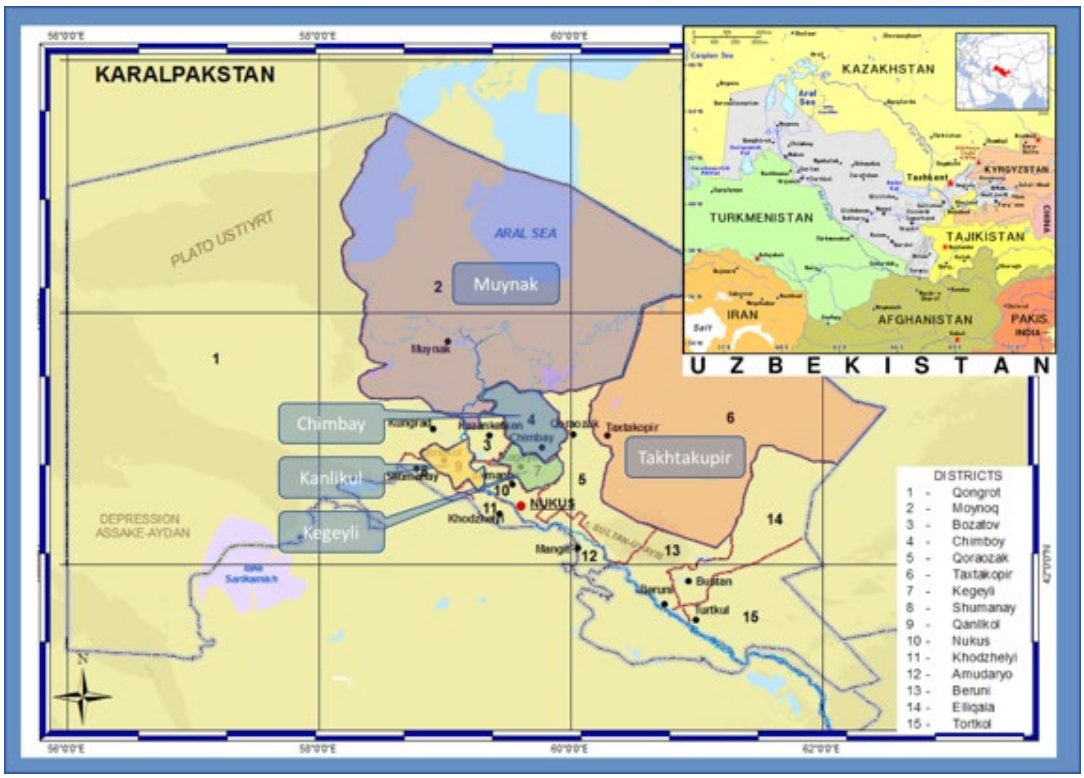
"Developing climate resilience of farming communities in the drought prone parts of Uzbekistan"



Mid-Term Review Report (ABSTRACT)

AF Agency:	United Nations Development Programme (UNDP)
Implementing Partner:	Centre of Hydro-meteorological Service
Funding:	Adaptation Fund (AF)
UNDP PIMS:	5002
UNDP Atlas Project ID:	00082613
Project Timeline:	June 2014 – May 2020

Submitted by:
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List of Abbreviations and Acronyms

AF	Adaptation Fund
APR	Annual Progress Report
AWP	Annual Work Plan
CDR	Combined Delivery Report
CVI	Conditional Vulnerability Index
DEWS	Drought Early Warning System
GDP	Gross Domestic Product
GEF	Global Environment Facility
MAWR	Ministry of Agriculture and Water Resources
M&E	Monitoring and Evaluation
MIE	Multilateral Implementing Entity
MTR	Mid-Term Review
NGO	Non-Governmental Organization
NIM	National Implementation Modality
NPC	National Project Coordinator
PAC	Project Appraisal Committee
PB	Project Board
PIU	Project Implementation Unit
PM	Project Manager
POPP	Programme and Operations Policies and Procedures
PPR	Project Performance Report
PRF	Project Results Framework
RTA	Regional Technical Advisor
SDGs	Sustainable Development Goals
SLM	Sustainable Land Management
SMART	Specific, Measurable, Attainable, Relevant and Time-bound
SNC	Second National Communication
TOR	Terms of Reference
UN	United Nations
UNCT	United Nations Country Team
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEG	United Nations Evaluation Group
UNV	United Nations Volunteer
USD	United States Dollar
WMO	World Meteorological Organization

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DISCLAIMER

This report is the work of an independent Reviewing Team and does not necessarily represent the views, or policies, or intentions of the United Nations Development Programme (UNDP) and/or of the Government of Uzbekistan.

1. Main Conclusions and Recommendations[1]

1.1. Background - Introduction

This report presents the findings of the Mid-Term Review (MTR) of the UNDP-supported AF-Financed Government of Uzbekistan Project "*Developing climate resilience of farming communities in the drought prone parts of Uzbekistan*". This MTR was performed by an Independent Reviewing Team composed of Mr. Jean-Joseph Bellamy and Ms. Saida Yusupova on behalf of UNDP.

According to the project document formulated in 2010-2013, Uzbekistan is a lower middle income, resource rich, doubly-landlocked country, strategically located in the heart of Central Asia. The population is over 32M people; despite steady economic growth in the last decade, the impact of economic growth on improving livelihoods has been inadequate with a growing gap between urban and rural areas. 26.9% of labor-aged population is involved in the agriculture sector, and the share of this sector plus forestry and fishery into the national GDP remains high though it declined during the recent decade (33.4% in 1990 to 18.1% in 2016 and 19.2% in 2017). As a result, the dependence on agriculture makes the country highly sensitive to climate variability and long-term climate change.

The total land area of Uzbekistan is 448,900 km2, of which 78% are plains, and 22% are mountains and mountainous valleys. Its territory is classified as a drought zone, susceptible to land degradation and desertification. Since 1951, there has been an observed trend of warming within Uzbekistan. The considerable variation in current climate across the country suggests that regions and oblasts will find themselves subject to different impacts under future climate change, and thus adaptation responses will need to vary country-wide. These localized variations highlight the need for improved local data for improved forecasting and climate modeling.

Water resource management is a key development challenge in Uzbekistan, including the fact that almost 90% of the country's water resources originate from mountain catchments located in neighboring countries. Regional water-sharing is, therefore, a major constraining factor to sustainable water supply in Uzbekistan. Water use by the agriculture sector from surface water sources constitutes 93% of overall water use, and it is mostly coming from two major river systems: the Amu Darya and the Syr Darya. Water is used in an unsustainable way and wasted due to ageing irrigation infrastructure.

Irrigated land forms the basis of agriculture in Uzbekistan. A major cause of declining agricultural productivity is inappropriate irrigation and under-maintained drainage systems, which together increase salinization and water logging and undermine the fertility of arable land. Livestock production is a primary source of investment for many people in Uzbekistan; however, productivity of this activity is also decreasing and negatively impacted by climate change with reduction of pasture productivity including overgrazing of marginal land particularly concentrated in the vicinity of settlements and around wells. Agriculture is indeed identified as the most vulnerable sector to the anticipated impacts of climate change. As per the Third National Communication (TNC) of Uzbekistan, climate change has already contributed to the reduction of agricultural crop productivity and yields, and of cattle breeding through the decrease of pastures productivity, which may affect negatively national food security.

At the time of the formulation of this project and in addition to the negative impacts due to climate variability and change, the outdated policies, legislation and minimal government support in the form of extension advice on land management practices were also contributing to the degradation of the environment. As agriculture was still largely state-controlled and governed by government policy or state decrees, the legacy of centralized policies in water management and agricultural practices, which were not suitable for local circumstances and resource availability, were also contributing factors to environmental degradation. It was compounded by obsolete agriculture practices that have remained similar to those used during the Soviet era. Farmers and pastoralists in the downstream, most arid regions such as Karakalpakstan have been particularly vulnerable, as they often receive no water from the upstream regions, especially during dry seasons. Karakalpakstan is the

1 Conclusions and Recommendations are in Chapter 1 with a brief background section. It is structured as an Executive Summary but also a stand-alone section presenting the highlights of this final evaluation.

poorest and most vulnerable region to climate change in Uzbekistan. It occupies about 166,600 km2 area, about a third of the country's total land area.

The project was formulated on the basis of four identified main barriers to be addressed in order for Karakalpakstan to adapt to climate change:

- There is no systematic extension service available to over 100,000 agricultural and pastoral farms in Uzbekistan;
- There is no comprehensive early warning system in place to guide water allocation and crop and pasture planning and management;
- There is no government policy nor financial incentives for large-scale adoption of adaptation measures;
- There are no integrated land use planning and policies for landscape level rehabilitation and sustainable land management to allow for the functional integrity of arid landscapes.

The objective of the project is "***to develop climate resilience of farming and pastoral communities in the drought prone parts of Uzbekistan, specifically Karakalpakstan.***" This objective will be achieved through four (4) outcomes (and 14 outputs):

1. The institutional and technical capacity for drought management and early warning developed
2. Climate resilient farming practices established on subsistence dekhan farms
3. Landscape level adaptation measures for soil conservation and moisture retention improves climate resilience of over 1,000,000 ha of land
4. Knowledge of climate resilient agricultural and pastoral production systems in arid lands generated and widely available

Table 1: Project Information Table

Project Title:	Developing climate resilience of farming communities in the drought prone parts of Uzbekistan		
UNDP Project ID (PIMS #):	5002	**AF Approval Date:**	February 10, 2014 (through an intersessional Decision B.22-23/6)
Award ID:	00066434	**Project Document Signature Date (date project began):**	May 26, 2014
Country:	Uzbekistan	**Date project manager hired:**	September 18, 2014
Region:	Central Asia	**Inception Workshop date:**	October 22, 2014 (Tashkent) October 27, 2014 (Nukus)
		Midterm Review date:	November-December 2017
		Planned closing date:	May 2020
Funding Agency:	AF	**If revised, proposed closing date:**	
Executing Agency:	Centre of Hydro-meteorological Services (Uzhydromet)		
Project Financing	at CEO endorsement (USD)		at Midterm Review (USD)
(1) AF financing:	4,990,878		4,990,878
(2) UNDP contribution:	200,000		200,000
Project Total Cost [1+2]:	5,190,878		5,190,878

This mid-term review report documents the achievements of the project and includes four chapters. Chapter 1 presents the main conclusions and recommendations; chapter 2 presents an overview of the project; chapter 3 briefly describes the objective, scope, methodology, evaluation users and limitations of the evaluation; chapter 4 presents the findings of the evaluation and relevant annexes are found at the back end of the report.

1.2. Conclusions[2]

Project Strategy

a) The project has been very relevant for Uzbekistan; even more so since the recently reforms of the agriculture sector.

2 This section *1.2 - Conclusions* and Section *1.3 - Recommendations* is translated in Russian in Annex 1.

The AF project is well aligned with national priorities, national policies and legal instruments, particularly the priorities identified this past year (the 2017-2021 five priorities areas and the Aral Sea programme 2017-2021) as well as with the reforms of the agriculture sector currently underway following several key government Decrees adopted in 2017. The project provides resources to address the barriers identified at the outset of the project and should contribute to the development of the resilience to climate change of farming and pastoral communities in the Karakalpakstan region. It is also well aligned with the AF results framework. The project is part of the UN partnership with the government of Uzbekistan, which, under UNDAF, supports the national priorities identified by the government of Uzbekistan with a focus on the most vulnerable populations in Uzbekistan.

b) It is a complex project strategy with a lack of clarity and logic to understand how planned activities will reach the expected results and particularly the targets.

Despite that the overall strategy is a clear response to national priorities, when reviewing the entire logical "*chain of results*" Activities □□Outputs □□Outcomes □ Objective, the PRF quickly becomes complex, particularly when reviewing outputs, indicators and targets set for measuring the progress of the project. The outputs were, in most cases, identified as deliverables with, in some cases, targets embedded in the output statements. With ambitious targets and the current context of the agriculture sector in Uzbekistan, it is difficult to know how results from project supported activities will reach these targets. The project document does not provide a useful "*blue print*" for the project team to guide the implementation of the project.

Progress Towards Results

c) The implementation of the project progresses unevenly.

The project is making progress and it has 2.5 more years of implementation left. It has made good progress under outcome 1 and 4 and it is anticipated that it will meet its targets under these two outcomes. However, regarding outcome 2 & 3, the focus is, currently, more on piloting and constituting a "*catalog of adaptation measures*" adapted to the Karakalpakstan region and less on an "*outreach model*" to reach out to thousands of farmers and communities in the region. In the meantime, when considering the project resources and the current context, the best the project can do under these two outcomes is to demonstrate adaptation measures and pilot an "*outreach model*" targeting farmers, dekhan farmers and small plot owners and promoting climate change adaptation measures. The targets under outcome 2 and 3 are too ambitious and will not be reached.

d) The "*outreach model*" planned to be established under output 1.4 to reach out to 40,000 dekhan farmers is insufficient.

The logic of the strategy to reach out to farming and pastoral communities is mostly through output 1.4 that is to establish a science-based extension services for the farming communities. However, this output has a very limited total budget of USD 58,000 (1.2% of the AF grant). It is completely insufficient and it will not provide the resources needed to end up with a viable and well performing extension service, which should "connect" with farming and pastoral communities in Karakalpakstan.

e) The project is addressing the four barriers limiting the development of the agriculture sector in Karakalpakstan and its adaptation to climate change.

Removing the identified barriers is critical for the development of the agricultural sector in Karakalpakstan and also for the success of the project that is to promote climate change adaptation. The project is timely and has been contributing to the removal of these barriers. The more effective the project will be, the less barriers will still limit the development of the agricultural sector in the region. It is anticipated that during the second part of the project, the project will use its "*catalog of adaptation measures*" and reach out to farming and pastoral communities to promote the adoption of these measures.

Project Implementation and Adaptive Management

f) The management arrangements are adequate but the management structure will need to be adapted to be more present in the Karakalpakstan region in the near future.

The management arrangements are adequate for the implementation of the project, including a good support from Uzhydromet, the National Implementing Partner. The project is implemented partly from the Tashkent office (outcome 1 and 4) and partly from the Nukus office (outcome 2 and 3). However, as the pace of activities

under outcome 2 and 3 increases, the project management structure needs to be reviewed and provide a greater presence of the project in the Karakalpakstan region. This management change has been discussed at the project board level and a decision was made at the December 2016 meeting to formally change the position of the project manager of the UN Joint Programme based in Nukus into a joint position including the responsibilities to coordinate activities under outcomes 2 and 3. This change is being implemented since January 2017.

g) The project set up a good structure to engage stakeholders.

Following good consultations with stakeholders undertaken during the design of the project, a good structure to engage stakeholders during the implementation of the project has been developed. It includes 2 inter-agency working groups that were formally established by government resolutions – one based in Tashkent and one in Nukus - and 5 initiatives groups – one in each pilot district. This structure provides the project with an excellent mechanism to link national decision makers with regional and district decision makers and ultimately with farming and pastoral communities. Meetings and workshops are taking place within these bodies to disseminate knowledge.

h) The disbursement of the AF grant is slow and it is estimated that the grant will not be expended by the end of project in May 2020.

As of the end of September 2017, total project expenditures amount to about USD 1.06M representing only 21% of the AF grant versus 56% of the project timeline. So far, 54% of the expenditures were expended on outcome one, 14% on outcome two, 4% on outcome three, 8% on outcome four and 20% on project management. When compared to the budget for each outcome, outcome 2 and 3 low expenditures are confirming the limited progress in these areas with respectively 11% and 2.5% of their budget expended so far. In the meantime, the project management expenditures stand at 20% of the total expended so far; this is high and it will need to decrease during the second phase of the implementation. Finally, when assessing the "*project burning rate*" it is doubtful that the remaining AF grant (USD 3.93) will be expended during the remaining 32 months of implementation; the project monthly expenditures would need to increase five-fold.

i) There is a complex set of indicators and targets to measure the performance of the project and some ambitious targets will not be achieved by the end of the project.

The set of 15 indicators and targets to measure the performance of the project is complex to understand and ambitious; it is complemented by a large set of yearly targets. The set of 15 indicators monitor the project at the output level and focus on quantitative results. However, the contribution of the project may not be measurable only in strict quantitative terms. With a mix of quantitative and qualitative indicators, the M&E system would have also provided qualitative findings measuring the capacities developed. Nevertheless, the M&E framework provides adequate monitoring and reporting information. The key challenge in this area is that some targets are much too ambitious and they will not be met by the project by May 2020. It is not clear how the project can reach out to 40,000 dekhan farmers to adopt adaptation measures, invest in greenhouses covering 20,000 ha, establish 10 cooperatives with a total number of 20,000 members and plant 70,000ha.

j) Knowledge management and communication is "embedded" in the strategy of the project; it provides tools and methods to disseminate knowledge to stakeholders/beneficiaries.

Knowledge management and communication is part of the expected results of the AF project. As such it is monitored through the M&E system in place which measures the performance of the project. With its information strategy, the project is now equipped with tools and methods to collect, structure, package and disseminate knowledge on climate change adaptation measures adapted to the Karakalpakstan region. It provides the project team with instruments to manage knowledge and communicate with stakeholders and beneficiaries. Currently, activities under this outcome are focusing much on raising awareness about adaptation measures. It is anticipated that, as the project needs to reach out to farming and pastoral communities, activities under this component will focus more on the adoption of these measures particularly through appropriate capacity development activities.

Sustainability

k) Project achievements should be sustained over the long-term.

The sustainability strategy presented in the project document is not fully convincing; particularly for achievements under outcome 2 and 3. It relies mostly on a potential uptake by beneficiaries of the adaptation measures that are being demonstrated in five districts. However, despite a not-so-convincing uptake of these best practices to replicate project achievements, those achievements that were demonstrated in the five pilot districts should be sustained over the long run. The implementation of these best practices should improve the livelihood of these farming and pastoral communities; hence they should be sustained by the beneficiaries of these piloted measures. The challenge resides with the replicability and scaling up of these adaptation measures after the project end.

1.3. Recommendations

Based on the findings of this mid-term review, the following recommendations are suggested.

Recommendation 1: It is recommended to analyze the new agriculture policy and legislation framework as well as the key programmes related to the project.

Issue to Address

Recently, the government passed new Decrees to reform the agriculture sector, particularly strengthening its extension services and the roles and responsibilities of the Council of Farmers, which was changed to the Council of Farmers, Dekhan Farmers and Household Plot Owners. Additionally, this past year, the government adopted its "*Strategy for Further Development 2017-2021*" and also in 2017, the government of the Republic of Karakalpakstan approved the "*State Programme for the Development of the Aral Sea 2017-2021*". These governmental new instruments are critical for the implementation of the project. The success of the project is mostly based on the adoption of adaptation measures by farming and pastoral communities in the Karakalpakstan region. It requires reaching out many farming and pastoral communities. The main approach to do that is through the development of a sustainable extension service and the capacity development of the Council of Farmers, Dekhan Farmers and Household Plot Owners, a government body linking policy makers with farmers/land users. A full review of these new instruments is needed, to assess how the project strategy fits within this new framework and how best the project can support these reforms within the context of the AF approved project strategy.

Who: Project Management Team

Feedback received from stakeholders confirms the necessity to continue to study the existing legal framework and monitor the current trend of reforming the agriculture sector, especially in the food security area with the risks of climate related event such as drought.

Recommendation 2: It is recommended to review the strategy of the project to emphasize the need to develop and pilot an "*outreach model*".

Issue to Address

In the first part of the project, the focus was much on piloting and constituting a "c*atalog of adaptation measures*" adapted to the Karakalpakstan region and less on the development of an "*outreach model*" to reach out to thousands of farmers and communities in the region. Yet, 63% of the AF grant has been allocated to the adoption of climate resilient farming practices by farming and pastoral communities and the implementation of community-based landscape level adaptation measures for soil conservation and moisture retention. One strategy to reach out to these communities has been through output 1.4 that is to establish a science-based extension services for the farming communities. However, this output has a very limited total budget of USD 58,000 (1.2% of the AF grant). It is completely insufficient and it will not provide the resources needed to end up with a viable and well performing extension service reaching out to thousands of farmers and that will bring change in these rural areas and improve their livelihoods.

It is recommended to fully review the strategy of the project and re-focus the project by building on the initial achievements under output 1.4 to develop an extended "*outreach model*"– an extension service – version that will be piloted with the support of the project in collaboration with the relevant national, regional and local institutions in the five pilot districts. The recommendation is to put the development of an extension service at the core of project activities moving forward. As the model is being implemented, capacities should be

developed, including discussion with relevant institutions to institutionalize such service with corresponding resources, mandates, skills and knowledge for staff, etc. The aim would ultimately be setting up a sustainable extension service[3] as a link between policy and legislation making and farmers (practitioners) but also as a mechanism to increase the efficiency of farms while adapting to climate change and increase the standard of living of farming and pastoral communities. As part of developing a sustainable extension service, it should also include the review of financing needs for implementing some of these adaptation measures, particularly for Dekhan farmers. In relation to current development in Uzbekistan, micro-financing mechanisms should be considered as financing options.

Who: Project Management Team and Project Board

Stakeholders confirm that the budget allocated to output 1.4 that is to establish science-based extension service for the farming communities in Karakalpakstan is clearly not enough and need to be revised upward.

Recommendation 3: It is recommended to review any existing community-based sustainable land management practices and the mechanisms to promote these practices; particularly any extension service experiences in Uzbekistan and in Central Asia.

Issue to Address

A central part of the project to ensure that farming and pastoral communities adopt adaptation measures is the establishment of an extension service. This is through such a service that promoting these measures can happen accompanied by appropriate training and knowledge transfer. It is also the mechanism for replicability and scaling up the appropriation of these adaptation measures to surrounding communities and possibly elsewhere in Uzbekistan. A recent government decree (No. PP-3318 of October 10, 2017) strengthened the role of the Council of Farmers as the mechanism to provide a comprehensive support to farmers, dekhan farms and household landowners in "*production, processing, storage and sale of agricultural products, including the implementation of modern agro-technical activities*". Based on this decree, the Council of Farmers is becoming a key organization for the development of the agricultural sector in Uzbekistan. In the meantime, the project has been supporting the development of a science-based extension service for these same farmers to assist them in adopting adaptation measures. Currently 2 extension services are functional and 3 more are being established with the support of the project. Within this context, it is recommended to conduct a review of existing community-based sustainable land management practices for farmers and pastoralists in Uzbekistan and in Central Asia as well as a review of international best practices and also the review of mechanisms – mostly extension services - to promote these practices to communities.

Who: Project Management Team

Recommendation 4: It is recommended to review and revised some targets to more achievable level.

Issue to Address

Most targets are too ambitious, including some targets embedded in output statements such as output 2.1, 2.2, 2.3 and 3.1. These ambitious targets include: at least 40,000 Dekhan farmers have adopted climate resilient conservation agriculture practices and water saving irrigation practices on 80,000 ha; over 70,000 ha of arid land of Karakalpakstan is covered with saksaul and tamarix plantations; 40% of targeted dekhan farmers have established horticulture greenhouses on 20,000 ha of farms; at least 20,000 people organized in at least 10 cooperatives at the Khokimiyat and Makhalla levels. It is not clear how the project can have this reach, particularly when considering that there are no existing extension services in place to strengthen and that as part of its implementation strategy, the project also needs to establish such services. It is anticipated that the project will not meet these targets by May 2020.

At this point, one dilemma facing the project is to decide if it is better to reach out broadly to farming and pastoral communities in Karakalpakstan to raise their awareness on the need to adapt to climate change and what they can do about it or to focus more on demonstrating and piloting an extension service in smaller areas such as the current five pilot districts with the goal of maximizing the number of farming and pastoral

3 A good discussion on "understanding extension" can be found on the FAO website at http://www.fao.org/docrep/t0060e/T0060E03.htm#Extension%20and%20education and on the "role of extension services" on the IFAD website at https://www.ifad.org/topic/resource/tags/rainfed_agriculture/2088038

communities adopting these measures in these areas; i.e. as opposed to a broader approach to raise awareness but less on the adoption (a change process) of adaptation measures. It is recommended to review carefully these targets within the strategic context of the project moving forward – particularly the focus on developing/piloting an extension service (see recommendation #1) - and identify appropriate and achievable targets by the end of the project. If targets are revised, some indicators in the "*Result Tracker*" of the PPRs will also need to be revised.

Who: Project Management Team, Project Board and UNDP

Stakeholders confirm that the current targets set at the outset of the project are very ambitious and will not be achieved with only this project supported activities. To be achieved, they will require the support of other similar projects in the years to come. In the meantime, regarding the focus on increasing the forest cover of the Aral seabed by 70,000ha, stakeholders mentioned the importance of the project to partner with other key stakeholders such as the State Forestry Committee and IFAS (International Fund for saving the Aral Sea). There is currently an initiative underway to develop a framework agreement in which the project should be part of it. Pulling resources together through this agreement could lead to good results reclaiming forest cover to lead to sand stabilization and soil desalinization.

Recommendation 5: It is recommended to extend the project until the AF grant will be expended.

Issue to Address

As of the end of September 2017, total project expenditures amount to about USD 1.06M representing only 21% of the AF grant versus 56% of the project timeline. When considering the average burning rate of the first 40 months of implementation of USD 26,420 per month and the remaining budget of USD 3.93M, it is doubtful that the AF grant will be fully expended by the end of the project in May 2020; the project monthly expenditures would need to increase five-fold. This low disbursement is partly due to the fact that this project had to face 2 critical delays: one at the start-up phase due to a longer than expected time to sign the project document; and the second delay estimated at 6 months due to the delayed transfer of the second tranche of the AF grant to UNDP Uzbekistan.

In the meantime, according to the "*Adaptation Fund Policy fore Project/Programme Delay (Amended in October 2017)*" – Article 3.1, the starting date of a project is the first day of the project's inception workshop (Decision B.18/29)[4], which would be October 22, 2014 for this AF project. Moreover, according to Article 14 of this policy "*an implementing entity may request for a project extension beyond the original completion date for up to 18 months for a concrete adaptation project if (i) no additional funds are required; (ii) the project's originally approved scope will not change; and (iii) the entity provides reasons and justifications for the extension*". According to Article 13, a project extension must be approved by the AF Board and that any request for additional time must be done through the submission of a request for a time extension using the AF template appended to the policy. Finally, according to Article 12, any delays should be reported through the PPRs.

Considering the above, it is recommended to review the starting date according to the AF policy and report this in the next PPR. It is also recommended to extend the project for at least 6 to 9 months corresponding to the implementation delays occurred so far. However, the exact duration of the time extension should be decided closer to the termination date of the project. It is proposed to review the timeline during the last quarter of 2018 when more detailed financial information will be available, including the remaining budget from the AF grant and submit a time extension request to the AF by November 2018.

Who: Project Management Team, Project Board and UNDP

Stakeholders confirm the proposal to extend the project implementation period (time extension) without changing the approved budget. They also suggested a 6 to 9 months extension, which should comply with the requirements of the AF and UNDP and submitted during the last quarter of 2018.

4 AF Policy for Project/Programme Delay (Amended in October 2017) - Article 3.1: For concrete adaptation projects/programmes the Board decided to consider the start date the first day of the project/programme's inception workshop (Decision B.18/29).

Recommendation 6: It is recommended to support Uzhydromet in making weather information and forecasts and climate change models available to farming and pastoral communities.

Issue to Address

The project is making good progress under outcome 1; it is contributing to strengthen the capacity of Uzhydromet by investing in better equipment to collect weather data and also by supporting the organization in developing weather forecast and models to assess climate change impacts. As per the World Meteorological Organization, investments in this area bring socio-economic benefits; all economic studies have consistently concluded with benefit-cost ratios greater than one. However, it is also clear that these services do not generate economic and social value unless users benefit from decisions as a result of the information provided. Therefore, in order to optimize the investments made in this area, it is recommended that the project focuses in making weather information and forecast and climate change models available to farming and pastoral communities (users). A feasibility study may be needed to assess the user needs related to weather information and to assess the potential bottlenecks that may exist to make this information readily available, such as public access to this type of information.

Who: Project Management Team, Project Board and Uzhydromet

Stakeholders confirm the need to give access to hydro-meteorological information to farming communities. Furthermore, consideration should be given to the development of a portal/platform for hosting hydro-meteorological, agro-meteorological, climatic data, statistical data, forecast information and information on the risk of dangerous hydro-meteorological events with varying levels of detail and access levels. The purpose of such an information portal/platform would be to create an information-base for assessing the likely damage from hazardous hydro-meteorological events and justify the inclusion of adaptation measures to reduce potential climate related damages in the country's economic development plans.

Recommendation 7: It is recommended to conduct a gender analysis in the five pilots.

Issue to Address

Gender considerations were not included in the design of this project and no specific sections discuss gender aspects of the project in the project document. In the meantime, the project team reports gender disaggregated data in PPRs. One indicator is singularly targeting women: "*Number of female lead horticulture greenhouses established*" but no quantitative target is set for this indicator. Considering that the project is targeting different groups of farmers (commercial farmers, dekhan farmers and small plot owners), it is recommended that the project conducts a gender analysis in the pilot areas to better understand gender roles and gender issues in farming and pastoral communities. It is recommended to conduct this analysis sooner than later, in order to provide critical information for the development of greenhouses as anticipated in the strategy of the project.

Who: Project Management Team and Project Board

Recommendation 8: It is recommended to organize "*Open Farmers' Days*" on pilots to bring national and regional decision makers and farmers/pastoralists together, observing field results and exchanging knowledge.

Issue to Address

The success of outcome 2 and 3 will depend mostly on the capacity of the project to reach out to farming and pastoral communities. Additionally, as a project it is crucial to build along the way the capacity of organizations such as Uzhydromet, Council of Farmers, local authorities, and also decision makers from ministries at regional and national levels. In addition to workshops and other training events, it is recommended to organize "*Open Farmers' Days*", where decision makers, local authorities, researchers, Council of Farmers representatives and of course farmers and pastoralists come together to visit, observe, exchange and share knowledge in the field. This is an excellent approach to acquire knowledge, build trust among stakeholders (farmers-local/regional organizations-national organizations), which should also lead to more adoption of climate change adaptation measures.

Who: Project Management Team and Project Board

Feedback from stakeholders confirm the recommendation to organize "Open days of farmers and forestry

workers" in the project pilot districts bringing decision-makers together with farmers to share experiences and knowledge, including results obtained in the field.

Recommendation 9: It confirms the Project Board decision to adapt the management structure ensuring more project presence in Karakalpakstan.

Issue to Address

Despite the current adequate management arrangements for the implementation of the project with an office in Tashkent focusing on outcome 1 and 4 and one office in Nukus focusing on outcome 2 and 3, it is expected that more project presence and effort is needed in the Karakalpakstan region in the near future to undertake more activities in the region, particularly reaching out to farmers and pastoralists. The Project Board has already reviewed this question and made the decision to change the current position of the project manager of the UN Joint Programme into a combined position taken also the responsibilities for coordinating the activities under outcome 2 and 3 of this project. The Reviewing Team confirm this decision that is being implemented since January 2017.

Who: Project Management Team and Project Board

Recommendation 10: It is recommended to add three more risks to the risk log of the project and report their status yearly.

Issue to Address

The review of the risk log revealed that the risks identified at the outset of the project are not comprehensive enough. They cover some good risk areas but the nature of this type of project has additional risks. It is recommended to add three (3) risks to the risk log of the project and report their respective status yearly through the PPRs. There are:

- A change in political support for promoting and integrating adaptation measures into the agricultural sector – (low);
- Insufficient capacity development and practical know-how within key state institutions and local authorities by the end of the project to allow sustainability of project achievements – (medium);
- Implement legislative changes in a timely manner that are required to develop an adequate enabling environment for the promotion and use of adaptation measures – (low).

Who: Project Management Team and UNDP

Recommendation 11: It is recommended to carefully monitor the project management expenditures, aiming to meet the target of the approved AF budget of 7.2% by the end of the project.

Issue to Address

As of the end of September 2017, the ratio project management costs over total expenditures is about 20%. That is high and it needs to decrease to a more acceptable level. It is recommended to carefully monitor this ratio and implement measures to bring this ratio down to a more acceptable level aiming at meeting the ratio of 7.2% of total expenditures by the end of the project as per the approved AF budget.

Who: Project Management Team, Project Board and UNDP

1.4. MTR Ratings and Achievement Summary Table

Below is the rating table as requested in the TORs. It includes the required performance criteria rated as per the rating scales presented in Annex 10 of this report. Supportive information is also provided throughout this report in the respective sections.

Table 2: MTR Ratings and Achievement Summary Table

Measure	MTR Rating	Achievement Description
Project Strategy	N/A	
Progress Towards Results		

Measure	MTR Rating	Achievement Description
Objective Achievement:	**MS**	The objective is expected to achieve most of its end-of-project targets but with significant shortcomings.
Outcome 1 Achievement:	**S**	The outcome is expected to achieve most of its end-of-project targets, with only minor shortcomings.
Outcome 2 Achievement:	**MS**	The outcome is expected to achieve most of its end-of-project targets but with significant shortcomings.
Outcome 3 Achievement:	**MS**	The outcome is expected to achieve most of its end-of-project targets but with significant shortcomings.
Outcome 4 Achievement:	**S**	The outcome is expected to achieve most of its end-of-project targets, with only minor shortcomings.
Project Implementation & Adaptive Management	**S**	Implementation of most of the seven components – management arrangements, work planning, finance and co-finance, project-level monitoring and evaluation systems, stakeholder engagement, reporting, and communications – is leading to efficient and effective project implementation and adaptive management except for only few that are subject to remedial action.
Sustainability	**ML**	Moderate risks, but expectations that at least some outcomes will be sustained due to the progress towards results on outcomes at the Midterm Evaluation

Important Note*: The ratings given above under "Progress Towards Results" are based on findings from this MTR measured against (too?) ambitious targets as identified in the project document (see discussion on these targets in Section 4.3.5).*

2. CONTEXT AND OVERVIEW OF THE PROJECT[5]

1. Uzbekistan is a lower middle income, resource rich, doubly-landlocked country, strategically located in the heart of Central Asia. It is bounded by Kazakhstan to the north and west, Turkmenistan and Afghanistan to the south, and Tajikistan and Kyrgyzstan to the east. Its total land area is 448,900 km2, of which 78% are plains, and 22% are mountains and mountainous valleys. The population is over 32.6M people[6], despite steady economic growth in the last decade, the impact of economic growth on improving livelihoods has been inadequate with a growing gap between urban areas and rural areas, where about half of the population is concentrated. 26.9% of labor-aged population is involved in the agriculture sector, and the share of this sector plus forestry and fisheries into the national GDP remains high though it declined during the recent decade (33.4% in 1990 to 18.1% in 2016 and 19.2% in 2017). As a result, the dependence on agriculture makes the country highly sensitive to climate variability and long-term climate change.

2. Most of the country is characterized by aridity – according to the UNEP aridity index. Uzbekistan's territory is classified as a drought zone, susceptible to land degradation and desertification. Since 1951, there has been an observed trend of warming within Uzbekistan. The considerable variation in current climate across the country suggests that regions and oblasts will find themselves subject to different impacts under future climate change, and thus adaptation responses will need to vary country-wide. These localized variations highlight the need for improved local data for improved forecasting and climate modeling.

3. Water resource management is a key development challenge in Uzbekistan. Demand continues to rise and climate variability and climate change impacts are likely to reduce the water supply. Freshwater sources in Uzbekistan consist of surface runoff of rivers, glaciers, groundwater, lakes and dams. However, almost 90% of the country's water resources originate from mountain catchments located in neighboring countries. Regional water-sharing is, therefore, a major constraining factor to sustainable water supply in Uzbekistan. Water use by the agriculture sector from surface water sources constitutes 93% of overall water use, and it is mostly coming from two major river systems: the Amu Darya and the Syr Darya, both of which flow into the Aral Sea. Some years, all the water available in these two rivers is used for irrigation, leaving no water to flow into the Aral Sea. In the meantime, water is used in an unsustainable way and wasted due to ageing irrigation infrastructure. As a result, water shortages are common in Uzbekistan, including in the Karakalpakstan region where villages are, some years, being left without water and need to be relocated or provisioned in water.

4. Irrigated land forms the basis of agriculture in Uzbekistan, which is a sector representing about 17.6% of the national GDP. Up to 80% of the food required by the population is currently produced in the country. A major cause of declining agricultural productivity is inappropriate irrigation and under-maintained drainage systems, which together increase salinization and water logging and undermine the fertility of arable land. This degradation of the resource base is estimated to cost approximately $1 billion annually in foregone economic output. Livestock production is a primary source of investment for many people in Uzbekistan, as livestock is a favored investment; however, productivity of this activity is decreasing and negatively impacted by climate change with reduction of pasture productivity including overgrazing of marginal land particularly concentrated in the vicinity of settlements and around wells. Agriculture is indeed identified as the most vulnerable sector to the anticipated impacts of climate change. The Third National Communication (TNC) of Uzbekistan states that climate change is likely to cause a shrinkage of agricultural land as a result of a rise in land salinization exacerbated by higher evaporation rates, intensified land degradation and desertification processes, severe water shortages, leading to the reduction in agricultural crop productivity and yields, as well as the reduction of cattle breeding through the decrease of pastures productivity, which may affect negatively national food security.

5. At the time of the formulation of this project and in addition to the negative impacts due to climate variability and change, the outdated policies, legislation and minimal government support in the form of extension advice on land management practices are also contributing to the degradation of the environment[7].

5 Information in this section has been summarized from the project document, which was formulated during the period 2010-2013.
6 https://www.uzdaily.com/articles-id-42339.htm
7 The Review Team noted that major transformational reforms of the agriculture sector are currently under way. The development of a strategy for reforming the agricultural sector is including in the State Program for 2018. Additionally, Uzbekistan obtained a loan from IBRD (January 2018 - $500M) to expand access to domestic and global markets as well as to improve the productivity of farmers and agribusinesses in the horticulture sector.

As agriculture was still largely state-controlled and governed by government policy or state decrees, the legacy of centralized policies in water management and agricultural practices, which were not suitable for local circumstances and resource availability, were also contributing factors to environmental degradation. It was compounded by obsolete agriculture practices that have remained similar to those used during the Soviet era. Farmers and pastoralists in the downstream, most arid regions such as Karakalpakstan have been particularly vulnerable, as they often receive no water from the upstream regions, especially during dry seasons. Karakalpakstan is the poorest and most vulnerable region to climate change in Uzbekistan. It occupies an area of about 166,600km^2; a third of the country's total area.

6. The analysis conducted for the formulation of this project identified four main barriers to be addressed in order to adapt to climate change. They are:

- ***Barrier 1:*** Paradoxically, a country for which agriculture is such an important sector does not have a systematic extension service provided to its over 100,000 agricultural and pastoral farms. Furthermore, the extension services which do exist tend to favor larger farmers. Finally, extension advice does not currently take a climate change adaptation perspective.
- ***Barrier 2:*** There is no comprehensive early warning system in place to guide water allocation and crop and pasture planning and management. Despite the strong capacity of Uzhydromet, the state department of Uzbekistan, high resolution, tailored forecast products are not readily available to potential users; sectorial ministries, various local authorities with land management responsibilities and farmers.
- ***Barrier 3:*** Despite numerous pilot initiatives that demonstrate good agriculture and natural resource management practices, there is no government policy or financial incentives for the large-scale adoption of measures with strong adaptation value.
- ***Barrier 4:*** There are no integrated land use planning and policies for landscape level rehabilitation and sustainable land management to allow for the functional integrity of the arid landscapes and hence greater resilience to climate change impacts.

7. This project has been developed to overcome these existing barriers. Its objective is "*to develop climate resilience of farming and pastoral communities in the drought prone parts of Uzbekistan, specifically Karakalpakstan*". It will be achieved through the delivery of four (4) expected outcomes and 14 outputs (see more detailed about the project strategy in Annex 2):

1. The institutional and technical capacity for drought management and early warning developed
2. Climate resilient farming practices established on subsistence dekhan farms
3. Landscape level adaptation measures for soil conservation and moisture retention improves climate resilience of over 1,000,000 ha of land
4. Knowledge of climate resilient agricultural and pastoral production systems in arid lands generated and widely available

8. This is a project supported by UNDP, the Adaptation Fund (AF), and the Government of Uzbekistan. It is funded by a grant from the AF of USD 4,990,878, and a cash contribution from UNDP of USD 200,000. The project started in June 2014 and its duration is 6 years. It is implemented under the "*National Implementation Modality (NIM)*". The implementing partner is the Centre of Hydro-meteorological Service under the Ministry of Emergency Situations since 2017 (formerly it was under the Cabinet of Ministers of the Republic of Uzbekistan). Other parties include Council of Ministers of the Republic Karakalpakstan, State Committee for Ecology and Environment (which was restructured and renamed in 2017 from the State Committee for Nature Protection), Ministry of Agriculture and Ministry of Water Resources (one ministry was separated to two ministries in 2018), Ministry of Economy, State Committee for Land, Geodesy, Cartography and State Cadaster. The project has been implementing pilots in selected districts within the Karakalpakstan region: Kegeyli, Kanlikul, Chimbay, and Takhtakupir districts.

3. EVALUATION FRAMEWORK

Available upon request

4. EVALUATION FINDINGS

9. This section presents the findings of this MTR adhering to the basic structure proposed in the TOR and as reflected in the UNDP project review guidance.

4.1. Project Strategy

10. This section discusses the assessment of the project strategy – including its relevance - and its overall design in the context of Uzbekistan.

4.1.1. Project Design

11. As discussed in Section 2 above, agricultural productivity in Uzbekistan is declining due to inappropriate irrigation and under-maintained drainage systems, which together increase salinization and water logging and undermine the fertility of arable land. Irrigated land forms the basis of agriculture in Uzbekistan, which is a sector representing about 17.6% of the national GDP. This degradation of the resource base has been estimated to cost approximately $1 billion annually in foregone economic output. As per the Third National Communication (TNC) of Uzbekistan, agriculture is indeed identified as the most vulnerable sector to the anticipated impacts of climate change. At the outset of this project and in addition to the negative impacts due to climate variability and change, the outdated policies, legislation and minimal government support in the form of extension advice to farmers were also contributing to the degradation of the environment. The legacy of centralized policies in water management was also a contributing factor to environmental degradation, which was compounded by obsolete agriculture practices that have remained similar to those used during the Soviet era.

12. As a result, farmers and pastoralists in the downstream, most arid regions such as Karakalpakstan are particularly vulnerable, as they often receive no water from the upstream regions, especially during dry seasons. Karakalpakstan is the poorest and most vulnerable region to climate change in Uzbekistan. It occupies about 166,600 km2 area, about a third of the country's total land area.

13. In order to address the root-causes of the of the decrease in agricultural productivity and adapt to climate change, four main barriers were identified at the outset of this project:

- There is no systematic extension service available to over 100,000 agricultural and pastoral farms in Uzbekistan. Those services, which do exist tend to favor larger farmers and do not take a climate change adaptation perspective;
- There is no comprehensive early warning system in place to guide water allocation and crop and pasture planning and management. No tailored forecast products are readily available; particularly to farmers;
- There is no government policy nor financial incentives for large-scale adoption of adaptation measures, despite numerous pilot initiatives that demonstrated good agriculture and natural resource management practices,
- There are no integrated land use planning and policies for landscape level rehabilitation and sustainable land management to allow for the functional integrity of the arid landscapes and hence greater resilience to climate change impacts.

14. The project was designed with a strong lead from Uzhydromet in collaboration with UNDP Uzbekistan and the financial support from the Adaptation Fund (AF). The strategy was developed with the aim to overcome these existing barriers; focusing on the Karakalpakstan region by "*developing climate resilience of farming and pastoral communities in the drought prone parts of Uzbekistan, specifically Karakalpakstan*" (Project objective). The mid-term review confirms that the project is a response to these barriers through a 'four-pronged' approach: (a) by developing the institutional and technical capacity for drought risk management and early warning systems; (b) by establishing climate resilient farming practices on subsistence dekhan farms in the Karakalpakstan region; (c) by improving the climate resilience of 1,042,094 ha of land through landscape level adaptation measures for soil conservation and moisture retention; and (d) by generating and distributing widely knowledge of climate resilient agricultural and pastoral production systems in arid lands.

15. This project is fully relevant for Uzbekistan. The design was to support the government to improve its hydro-meteorological monitoring infrastructure, which will serve as the backbone for a drought early warning system as well as providing better weather data to develop weather forecasts and models to assess climate change impacts. The project was also to support the development of a suite of adaptive multi-benefit agronomic practices for crops and livestock; ranging from conservation agriculture through horticultural greenhouses and pasture management. Under its third component, the project was to support the development of a participatory scenario-based land use plan; seeking to reduce the impacts of higher temperatures and lower rainfall on crop productivity through large scale plantations of trees. Finally, key lessons from the project were to be monitored, documented and disseminated to maximize the impact of the project and the sustainability of its achievements.

16. At the time of the design, the project reflected the priorities stated by the governments of Uzbekistan and Karakalpakstan. It also integrated the results of the review of what had and had not worked in Uzbekistan and the region as well as being cognizant of social and market tends and the general evidence of an effective aridification through climate change effects. Its aim is to put Karakalpakstan - the most vulnerable region of Uzbekistan - on a more solid footing in terms of identifying the local effects of climate change and taking these into account in land management decisions at various levels and in implementing new agricultural practices for both crops and livestock, and more efficient water management practices as measures to adapt to climate change, improving the resilience and livelihood of local communities. It was anticipated that by increasing the capacity to model climate change impacts and take them into account in land use planning, as well as by improving a better understanding of these impacts at the farmers' level through an improved extension service, it will increase the adaptive capacity of the region to identify and implement climate change adaptation solutions in the future and, by extension, inspire similar activities elsewhere in the country.

17. In the meantime, since the start-up of this project and particularly since the arrival of the new President of Uzbekistan, major reforms are underway in the agriculture sector. The assessment conducted by the Reviewing Team for this mid-term review revealed that, within this new context of reforms of the agriculture sector, the project is even more relevant today than at the outset of the project; it is well aligned to several recently adopted Decrees and programmes; it includes:

Cabinet of Ministers Decree No. N311 adopted on November 3, 2015: Measures to further improve the provision of agricultural and water sectors with highly qualified personnel with higher education

18. This Decree provides legal provision for the creation of the center of educational and industrial practice under the structure of the Agrarian University. It also approved proposal from the Ministry of Agriculture and Council of Farmers to create regional centers (in the form of state unitary enterprises) placed within higher educational institutions for agriculture and water management for advance training of specialists and farmers.

Cabinet of Ministers Decree №118 adopted on April 21, 2016: Measures for the effective organization of a system of retraining and advanced training for managers and specialists of farm enterprises

19. The aim of this Decree is - within the context of the reforms of the agricultural sector - to increase the professional knowledge of farm managers and specialists for the development of farming, and effectively implementing best farming practices and modern methods of management and marketing in agriculture. The Ministry of Finance annually, beginning in 2016, should allocate necessary funds from the Extra Budgetary Fund for Reconstruction to strengthen the material and technical base of regional centers and professional colleges providing retraining and advanced training of farmers and specialists. This allocation should be based on justified calculations from the former Ministry of Agriculture and Water (now separated into two ministries) as well as the Ministry of Higher and Secondary Special Education. These training courses are to be held in regional centers placed within higher educational institutions for agriculture and water management and with the involvement of the faculty of these institutions. The programme of these training sessions is to be approved by the Ministry of Agriculture and the Ministry of Water Resources and the higher educational institutions for agriculture and water management. These regional centers are to conduct these training sessions on a paid basis for participants.

State Programme for the Development of the Aral Sea Region 2017-2021 adopted by Presidential Decree No.* ПП-2731 *on January 18, 2017

20. This state programme was approved by the government through the Cabinet of Ministers Decree No.15 adopted on January 17, 2017 on additional measures for improvement of socio-economic condition of people living in Karakalpakstan. The programme aims at providing socio-economic development aid for the Aral Sea

basin seeking to improve the living conditions and quality of life of the region's population. The programme includes measures such as create new jobs, increase the investment attractiveness of the region, develop the water supply system, sewerage, sanitation and waste disposal, improve living conditions of the population and develop the transport, engineering and communication infrastructure of settlements. The action plan to implement this programme is composed of 67 projects worth 8.422 trillion soms ($2.58 billion). To ensure a reliable and stable financing of the implementation of these measures, a fund for the development of the Aral Sea basin is to be created under the Ministry of Finance.

Presidential Decree №UP-4947 adopted on February 7, 2017: Strategy of Actions for the Further Development of the Republic of Uzbekistan.

21. The year 2017 in the Republic of Uzbekistan was declared as the "*Year of Dialogue with the People and Human Interest*". This Decree approved the Uzbekistan's Strategy for Further Development 2017-2021. It also legislated the formation of a National Commission to oversee the implementation of this Strategy and declared this Strategy as the main priority for all government bodies and officials.

Uzbekistan's Strategy for Further Development 2017-2021

22. The purpose of the Strategy for the period 2017-2021 is to raise the efficiency of reforms, create the conditions to ensure a comprehensive and accelerated national development, and set the priority paths for the country's modernization and liberalization. The Strategy includes five priority areas:

- *Improving the system of state and social construction*: strengthening democratic reforms and modernization of the country;
- *Ensuring the rule of law and reforming the judicial system*: strengthening the independence of the judiciary and protection of civil rights and freedoms;
- *Development and liberalization of the economy*: raising competitiveness and openness;
- *Development of the social sphere*: gradual increase of wages, pensions and benefits, creation of jobs, etc.;
- *Ensuring security, inter-ethnic harmony and religious tolerance, implementation of balanced, mutually beneficial and constructive foreign policy*: strengthening the independence and sovereignty of the state, creating a security belt around Uzbekistan, stability and good neighborly relations.

Presidential Decree No. N2966 adopted on May 11, 2017: Organization of activities of the State Committee of the Republic of Uzbekistan on Forestry

23. This Decree reorganizes the Forestry Department of the Ministry of Agriculture into a separate State Committee on Forestry. It also stipulated its functions, including expansion of forests, production of seedlings, provision of areas for grazing and production of agricultural products; production of beekeeping products, fisheries, livestock and industry, as well as provision of paid services to the population in the context of state forestry. It obligates Agrobank to provide soft loans; update the educational curriculum to respond to the emerging needs of the forestry sector. Finally, it obligates the new committee to collect proposals on financing sources and projects on plantations to protect land against wind and water erosion.

Presidential Decree No. UP-5199 adopted on October 9, 2017: Measures to improve the system for protecting the rights and legitimate interests of farmers, dekhan farms and household landowners, efficient use of agricultural acreage.

24. This Decree improves the legislation for protecting the rights and legitimate interests of farmers, dekhan farms and household landowners. It defines the tasks of the state, local authorities and self-governing bodies of citizens to ensure the effective use of crop areas and to strengthen their responsibility. It creates favorable conditions for multi-sectoral farms and strengthens measures for state support. It ensures financial sustainability of farmers through the introduction of market mechanisms in supply chains. Through the provision of information on modern technologies, the decree seeks to increase the knowledge and experience of landowners. In accordance with the decision of the Conference of the Council of Farmers, the Decree legislate the change of this Council into the Council of Farmers, Dehkan Farms and Owners of Homestead Lands of Uzbekistan. It also legislated the need to review land use by community self-governing bodies: quarterly for land plots exploited by farmers and monthly for land plots exploited by dekhan farms and household landowners. The decree also identified strict measures to be applied in case of non-compliance, including rights to terminate inefficient exploitation of land, including when agricultural measures are not fully implemented.

Presidential Decree No. PP-3318 adopted on October 10, 2017: Organizational measures to further develop the activities of farmers, dekhan farms and landowners

25. This decree states that the Council of Farmers must provide a comprehensive support to farmers, dekhan farms and household landowners in the production, processing, storage and sale of agricultural products, including the implementation of modern agro-technical activities, as well as drafting contracts, exporting products to foreign markets and overall training of farmers. It also includes the organization and expansion of various forms of cooperation between farmers, dekhan farms and household landowners and with other organizations, which provide consulting services on legal, economic, financial, agricultural and other issues in agriculture, as well as in the production, purchase, processing, sale, supply and service, and introduction of advanced foreign experience in agriculture.

26. The project is well aligned with these policy and legal instruments, including the state programme for the development of the Aral Sea region (2017-2021). It provides resources to address the barriers identified at the outset of the project, which should contribute to the development of the resilience to climate change of farming and pastoral communities in the Karakalpakstan region. As per one stakeholder interviewed during this mid-term review, the project is to provide a link between the research on agriculture practices and the application of these measures by farmers.

UNDP Strategy in Uzbekistan

27. The current United Nations Development Assistance Framework (UNDAF) is the strategic programme framework between the Government of Uzbekistan and the United Nations System for the period 2016-2020. It was developed through an intensive consultation process with the Government and other implementing national partners. It draws on the full range of knowledge and resources of the United Nations system to deliver development results. It supports national priorities and is in line with the Sustainable Development Goals (SDGs) for the post-2015 period, tailored to the local context. The UNDAF focuses particularly on benefitting the most vulnerable populations in Uzbekistan. This strategic programme is composed of four strategic focus areas that respond to national needs and make use of the United Nations' comparative advantages; they include:

- Inclusive economic development, with a focus on employment and social protection
- Quality health and education, to fully realize human potential
- Environmental protection, to ensure sustainable development
- Effective governance, to enhance public service delivery and the protection of rights.

28. The thematic area 3: *Environmental protection to ensure sustainable development*, has been aligned with the government priority to improve land productivity and the use of water resources. This priority is being addressed within the context of poor water infrastructure, combined with continuing degradation and salinization of arable land, which remain priority challenges. The expected UNDAF outcome under this area is that "*by 2020, rural population benefit from sustainable management of natural resources and resilience to disasters and climate change*". For the period 2016-2020, the UNDAF focuses on:

- Integrating the principles of sustainable development into national legislation and policymaking and elaborating evidence-based policies to promote sustainable development
- Improving the efficiency of use of land and water resources for sustainable agricultural development and food security
- Climate change mitigation and adaptation, climate risk management and disaster risk reduction
- Improving energy efficiency and promoting access to energy
- Biodiversity conservation.

29. Following the development and adoption by the government of Uzbekistan of the Development Action Strategy 2017-2021 and the development of the UNDAF 2016-2020 aligned with the five priority areas of this strategy, a *roadmap*[8] was developed by the UN Country Team (UNCT). This roadmap was a response to the reforms initiated under the Action Strategy and to the urgent needs and modern challenges facing the country and the region in general at this stage of development. In order to adapt to the fast-pace of reforms, it was necessary to identify the most urgent and priority areas of cooperation between Uzbekistan and the United

8 UN, Government of Uzbekistan, *Action-oriented Roadmap on Further Cooperation between Uzbekistan and the United Nations System for 2017-2020*

Nations. One priority area identified was climate change and water management, which are also priority issues for the SDGs and are highly relevant for Uzbekistan. It includes measures to mitigate the drying up of the Aral Sea and prevent the collapse of the ecosystems in the Aral Sea region, including the Uzbek's initiative to create a trust fund for the Aral Sea region under the auspices of the United Nations.

30. The AF project is part of this strategic programme UNDAF and the *Roadmap* supporting the government of Uzbekistan in adapting to climate change, seeking to improve the efficiency of use of land and water resources in the agriculture sector and to improve the hydro-meteorological monitoring infrastructure, which – through a drought early warning system – will provide better weather data. The Reviewing Team also noted that this project is not an isolated project. It is part of an overall multi-year strategy of UNDP to support the government of Uzbekistan by strengthening environmental governance, building institutional and individual capacities to mitigate anticipated climate change impacts, mainstreaming biodiversity conservation principles into sectorial policies and programmes, and promoting renewable energy and sustainable use of land and water resources. This project is a continuation of a SLM project implemented in Uzbekistan from 2008 to 2013: "*Achieving Ecosystem Stability on degraded land in Karakalpakstan and the Kyzylkum Desert*". It is also implemented in parallel to few other projects such as *Reducing Pressures on Natural Resources from Competing Land Use in Non-Irrigated Arid Mountain, Semi-Desert and Desert Landscapes of Uzbekistan*, and the *Sustainable Management of Water Resources in rural areas in Uzbekistan*. Together these projects are part of the UNDP programme to support the government in improving the sustainable land management of agricultural systems in arid zones of Uzbekistan.

AF Portfolio Objective

31. The project was developed (and is funded) in line with the Adaptation Fund Results Framework, including its expected impact that is "*Increased resiliency at the community, national, and regional levels to climate variability and change*". The Reviewing Team found that it is well aligned with most of its expected outcomes; particularly with the following outcomes:

- *Outcome 1 - Reduced exposure to climate-related hazards and threats*: Under outcome 1, the project supports the development of the institutional and technical capacity for drought risk management and early warning systems, which by providing better weather data will help reducing exposure of local communities to climate-related hazards and threats.
- *Outcome 2 - Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses*: Similar to the alignment with outcome 1 above, the project contributes to the development of Uzhydromet capacity, which, based on better weather data, will provide weather forecasts and models to assess climate change impacts; hence contributing to the reduction of climate change-related risks. The project will also contribute to develop the capacities of other stakeholders, including line ministries: Ministry of Agriculture, Forestry Committee, and Regional Ministries in Karakalpakstan.
- *Outcome 3 - Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level*: Under outcome 2, the project has been establishing climate resilient farming practices on subsistence dekhan farms of Karakalpakstan. It is piloting a series of adaptation measures for the agriculture sector and seeking to replicate these measures throughout the Karakalpakstan region.
- *Outcome 4 - Increased adaptive capacity within relevant development sector services and infrastructure assets*: Under outcome 2 and 3, the project has been piloting adaptation measures to conserve agriculture land against climate change impacts such as laser-leveling technology, which has a positive impact on land salinization, agriculture techniques to limit soil erosion in winter and soon to be piloted techniques for sustainable forestry in the Aral Sea bed.
- *Outcome 5 - Increased ecosystem resilience in response to climate change and variability-induced stress*: All activities conducted under outcome 2 and 3 of the project will increase the resilience of agriculture, forestry and pasture land in the Karakalpakstan region; including an expected increase of agricultural land productivity.
- *Outcome 6 - Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas*: As a result of project activities, it is anticipated that the livelihoods of communities in the Karakalpakstan region will increased over time; mostly through the implementation of adaptation measures, which should sustainably increase farming and pasture land productivity, but also through greenhouse horticulture to diversity crop production and provide additional incomes to communities.

32. As per the overall objective of the Adaptation Fund that is to "*reduce vulnerability and increase adaptive capacity to respond to the impacts of climate change, including variability at local and national levels*", this project is much aligned with the AF results framework. As per its goal, the funding from the AF is assisting Uzbekistan that is particularly vulnerable to the adverse effects of climate change to strengthen its capacity in adapting to climate change through the implementation of climate-resilient measures.

Gender Considerations

33. The assessment of the project document reveals that gender considerations were not really included in the design of this project; no specific sections discuss gender aspects of the project. The only places where gender matters are briefly considered are in the management arrangements where it is said that gender mainstreaming issues will be considered by Uzhydromet as the national partner implementing agency, and that the project board will be balanced in term of gender representation. It is also mentioned in the terms of reference proposed for key project staff where, for instance, one function of the Project Manager (PM) is to ensure that the project contributes to the promotion of gender equality by reaching, involving and benefiting both women and men in its activities (gender mainstreaming). The PM has also to mainstream gender issues in project activities.

34. Nevertheless, following the AF guidance to monitor and report progress, the project team has been reporting gender-disaggregated progress data. In addition to this report and referring to the most recent Project Performance Report (PPR), the project team also reported on gender matters such as, for instance, that *100 female candidates (20% of 500 beneficiaries) were identified based on their social and gender profile to be recipients of greenhouse equipment*. The project is collecting gender-disaggregated data and consider the mainstreaming of gender in all project activities; however, the lack of a clear gender equality strategy has limited so far, the project role in mainstreaming gender as a driver of development progress.

35. In conclusion, the AF project is well aligned with national priorities, particularly the priorities identified early this past year as well as with the reforms of the agriculture sector currently underway. It is also well aligned with the AF results framework. The project is part of the UN partnership with the government of Uzbekistan, which, under the UNDAF, supports the national priorities identified by the government of Uzbekistan with a focus on the most vulnerable populations in Uzbekistan and including the protection of the environment and the sustainable development of the country. The Reviewing Team found that the project was designed through a good participative process; though it lacks a gender perspective, which should have been integrated in the project design.

4.1.2. Results Framework / Log-frame

36. The *Project Results Framework (PRF)* identified during the design phase of this project is somewhat complex to understand, particularly when focusing on the indicators, baselines and targets. No major changes were made to the *Project Results Framework* during the inception phase; only 2 target dates were changed to reflect the delay that occurred at the startup of the project. The review of the objective and outcomes indicates a satisfactory link Outcomes Objective. The project has a set of four expected outcomes and together they will achieve the objective that is to develop the climate resilience of farming and pastoral communities in the Karakalpakstan region. The project seeks to develop the institutional and technical capacity for drought risk management and early warning systems; to establish climate resilient farming practices on subsistence dekhan farms in the Karakalpakstan region; to improve the climate resilience of 1,042,094 ha of land through landscape level adaptation measures for soil conservation and moisture retention; and to generate and distribute widely knowledge of climate resilient agricultural and pastoral production systems in arid lands.

37. The logic model of the project presented in the *Project Results Framework* is summarized in table 3 below. It includes one objective, four outcomes and 14 outputs and their respective targets to be achieved at the end of the project.

Table 3: Project Logic Model

Expected Results	Targets at End of Project
Project Objective: To develop climate resilience of farming and pastoral communities in the drought prone parts of Uzbekistan, specifically Karakalpakstan.	• *No target to measure progress against the objective*
Outcome 1 - Institutional and technical capacity and mechanisms for drought risk management and early warning developed. • ***Output 1.1:*** Upgraded observation and monitoring infrastructure (e.g. 2 Doppler water meters, automatization of 8 met stations) for effective data receiving and transmission. • ***Output 1.2:*** Multi-modal platform for integration of data flow from hydro-meteorological observation to end users. • ***Output 1.3:*** Drought early warning mechanisms (indicators, gauges, warning distribution mechanisms etc.) to minimize impacts of droughts in place and functional. • ***Output 1.4:*** Science-based extension services for subsistence dekhan farmers established to assist in farm-based climate risk management, including sub-district, community level Climate Field School/Extension (CFS /E) for direct outreach to farmers and localized training in adaptation practices.	• Instalment of 2 Doppler water meters and 8 automated meteorological stations; • At least 40,000 km2 of the Karakalpakstan region will be covered by automated hydro-meteorological observation network; • Season ahead forecasts and 2 weeks ahead temperature forecasts for effective warnings will be practiced; • At least 40% of Dekhan farmers and pastoralists of Karakalpak region will be served by science-based extension; • At least 3 Field School/Extension established to deliver training in adaptation practices to farmers and pastoralists; • At least 20% of targeted Dekhan beneficiaries will be female.
Outcome 2 – Climate resilient farming practices established on subsistence dekhan farms of Karakalpakstan • ***Output 2.1:*** 40,000 Dekhan farmers have adopted climate resilient conservation agriculture practices (e.g. low till, mixed cropping, fodder production, and residue crop soil covering adopted measures adopted at 80,000 ha of dekhan farms) • ***Output 2.2:*** 40,000 Dekhan farmers have adopted water saving irrigation practices (e.g. land leveling, well management, furrow and drip irrigation systems adopted at 80,000 ha dekhan farms to improve farm-level drainage and minimize salinization) • ***Output 2.3:*** 40% of targeted dekhan farmers have established horticulture greenhouses on 20,000 ha of farms to minimize impacts of droughts on farm production • ***Output 2.4:*** Legal and regulatory framework put in place to support well tested farm-based adaptation measures for replication and upscale	• At least 40,000 Dekhan farmers have adopted climate resilient conservation agriculture practices (e.g. low till, mixed cropping, fodder production, and residue crop soil covering adopted measures adopted at 80,000 ha of dekhan farms) by end of the project; • At least 40,000 Dekhan farmers have adopted water saving irrigation practices (e.g. land levelling, furrow, drip irrigation systems adopted at 80,000 ha dekhan farms to improve farm-level drainage and minimize salinization) by end of the project; • Female lead horticulture greenhouses will be established by mid of 2016; • Laws on agricultural practices and water management will be amended by to integrate regulations on the adoption of conservation agriculture and water saving techniques and technologies on the farms by end of 2016.
Outcome 3 – Landscape level adaptation measures for soil conservation and moisture retention improves climate resilience of 1,042,094 ha of land • ***Output 3.1:*** Local saksaul and tamarix plantations deliver sand stabilization and soil desalinization function for 1,042,094 ha of farm and adjacent farmlands, based on wind models and comprehensive landscape rehabilitation and management plan • ***Output 3.2:*** Community management scheme for planting and maintenance established as community employment scheme for landscape level adaptation • ***Output 3.3:*** Cooperative management for landscape rehabilitation and management established to enhance community control and ownership arrangements	• By end of the project over 70,000 ha of arid land of Karakalpakstan is covered with saksaul and tamarix plantations to deliver sand stabilization and soil desalinization function; • At least 20,000 people organized in at least 10 cooperatives at the khokimiyat and makhalla levels to participate in sand stabilization plantation scheme; • At least 10 community organizations (at least 5 female groups and village organizations) at khokimiyat and makhalla level have clear mandates, institutional capacities and skills to manage saksaul and tamarix plantations by end of 2019.
Outcome 4 – Knowledge of climate resilient agricultural and pastoral production systems in arid lands generated and widely available • ***Output 4.1:*** Inventory of all tested agronomic and water saving measures to map out successful practices • ***Output 4.2:*** Analysis and lessons learned for climate resilient agricultural and pastoral production systems in arid lands documented and disseminated through printed and web-based publications	• At least two sets of lessons learned bulletins produced to cover successful climate resilient agronomic and water saving measures; • At least 5 farmland demonstration meetings covered by the local and national media for adaptation advocacy.

Expected Results	Targets at End of Project
• ***Output 4.3:*** Quarterly farm and pasture land demonstration meetings with participation of national, local authorities, media and communities delivered	

38. However, below the set of clear and logical outcomes (4) and the objective, this PRF is a case of "*the devil is in the details*". When reviewing the entire logical "chain of results" Activities □□Outputs □□Outcomes □ Objective, the PRF quickly becomes complex, particularly when reviewing outputs, indicators and targets set for measuring the progress of the project. The outputs were in most cases identified as deliverables with, in some cases, targets embedded in the output statements such as *Output 2.1 - 40,000 Dekhan farmers have adopted climate resilient conservation agriculture practices (e.g. low till, mixed cropping, fodder production, and residue crop soil covering adopted measures adopted at 80,000 ha of dekhan farms)*. The differentiation of outputs, indicators and targets is somewhat confusing and sometimes redundant. For instance, the output 1.1 statement is: *Upgraded observation and monitoring infrastructure (e.g. 2 Doppler water meters, automatization of 8 met stations) for effective data reception and transmission*; the indicator 1.1.1 is: *Number of automated met stations for field data collection and transmission*; and the target is: *Instalment of 2 Doppler water meters and 8 automated meteorological stations*. In this case, there is no need of an indicator and target since it is already included in the output statement.

39. The presentation of the strategy of the project in the project document through the PRF followed by the project results and resource framework is also rendering the understanding of this strategy more complex. In the PRF, baseline targets and milestones are presented against the outcomes and indicators; but another column listing outputs and indicators is also presented in the same PRF. The review indicates that it is not clear which target goes with which indicator and with which results. It renders the overall management of the project more complex; particularly the monitoring of the progress but also the work planning. There is not a clear way to implement a set of activities to reach the outputs, then outcomes, etc.

40. In addition to this complexity, the assessment conducted for this MTR reveals that the overall project logic of using project inputs to implement planned activities to reach a set of expected outputs (14), which would contribute in achieving the set of expected outcomes (4), which together should contribute to achieve the overall objective of the project is very ambitious but most importantly not fully logical. It is not clear how the project will reach some of these outputs when considering the overall design of the project including the planned activities. For instance, using the same example of output 2.1, it is not clear how the project will achieve the target of 40,000 Dekhan farms that will have adopted climate resilient conservation agriculture practices on an area of 80,000ha by the end of the project; the action planned to reach this target is only saying to "*ensure that 40,000 dekhan farms have adopted ……*" The same can be stated for reaching the outputs under outcome 3 such as 70,000ha of arid land should be covered with saksaul and tamarix by the end of the project; and to establish 10 local cooperatives with 20,000 members; the indicative activities are not convincing when it comes to assess how these targets will be achieved.

41. Finally, the PRF is much focus on the delivery of adaptation measures. There is a sense that to achieve the objective of the project, it is a matter of delivering 2 doppler water meters, 8 automated meteorological stations, adaptation measures adopted by 40,000 dekhan farms, greenhouses on 20,000ha, 70,000ha covered with saksaul and tamarix, and 10 cooperatives with 20,000 members. If it was feasible, it would be a valid M&E framework to monitor the effectiveness of the project. However, in the meantime, the only way for the project to achieve these very ambitious targets is through the development of capacities of stakeholders at all levels (national, regional, district and local) and also at the individual, institutional and system levels. A link between the government and the agriculture research centers and the farmers is needed. A type of extension services is needed and the government has been moving in this direction. However, this service needs to be established, skills and knowledge need to be developed, procedures and mechanisms need to be identified and an enabling environment (policies and legislation) is needed for this link to exist and to be developed. As it stands currently, the project document does not provide much guidance on how capacities will be developed by the project. It is also reflected in the set of indicators where few indicators are capacity-based indicators (*see additional discussion in section 4.2.1 and 4.3.5*).

42. In conclusion, the review of the project design and the project strategy (PRF) indicates that this strategy

is a clear response to national priorities. Addressing climate change impact while developing the agricultural sector in the Karakalpakstan region is clearly a government priority; the AF project is well positioned to support the government in the development of this region, including the adaptation to climate change and bettering the livelihoods of vulnerable communities in the region. Early in 2017, the government developed and adopted a state programme for the development of the Aral Sea region for the period 2017-2021 as well as a set of Decrees to reform the agricultural sector; it provides a good enabling environment for the project to move forward. However, a poor project document does not provide a useful "*blue print*" for the project team to guide the implementation of the project. At the mid-point in the implementation of the project it is difficult for the project team to plan ahead when considering that most targets will not be achieved.

4.2. Progress Towards Results

43. This section discusses the assessment of project results; how effective the project is to deliver its expected results and what are the remaining barriers limiting the effectiveness of the project.

4.2.1. Progress Towards Outcomes Analysis (for Outcome 1)

44. As presented in Sections 4.1, the project has been implemented through four (4) outcomes. The implementation progress is measured though a set of 15 indicators and 15 related targets. On the next page is a table listing key deliverables achieved so far by the project against Outcome 1 and corresponding targets. *Progress towards the other Outcomes which are not relevant to the establishment of the Early Warning System is excluded from the abstract for brevity an is available upon request.*

45. Additionally, a color "*traffic light system*" code was used to represent the level of progress achieved so far by the project, as well as a justification for the given rating (color code)[9].

Target achieved
On target to be achieved
Not on target to be achieved

9 The analysis and ratings presented in this Section have been conducted with the assumption that the project will terminate in May 2020 as per its current official ending date.

Table 4: List of Delivered Results

Expected Results	Project Targets	Results (Deliverables)	MTE Assess.	Justification for rating
Project Objective: To develop climate resilience of farming and pastoral communities in the drought prone parts of Uzbekistan, specifically Karakalpakstan.				• *No indicators were identified to measure the performance of the project at the objective level.*
Outcome 1 - Institutional and technical capacity and mechanisms for drought risk management and early warning developed. • ***Output 1.1:*** Upgraded observation and monitoring infrastructure (e.g. 2 Doppler water meters, automatization of 8 met stations) for effective data receiving and transmission. • ***Output 1.2:*** Multi-modal platform for integration of data flow from hydro-meteorological observation to end users. • ***Output 1.3:*** Drought early warning mechanisms (indicators, gauges, warning distribution mechanisms etc.) to minimize impacts of droughts in place and functional. • ***Output 1.4:*** Science-based extension services for subsistence dekhan farmers established to assist in farm-based climate risk management, including sub-district,	• Instalment of 2 Doppler water meters and 8 automated meteorological stations • At least 40,000 km2 of the Karakalpakstan region will be covered by automated hydro-meteorological observation network • Season ahead forecasts and 2 weeks ahead temperature forecasts for effective warnings will be practiced	• A network of 10 meteorological stations in Karakalpakstan have been automated and functional (2 more than planned). They are now operational and are being tested; • Two Doppler water discharge meters procured and installed in two key water gauge stations (Tuyamuyun and Kipchak); • This equipment covers the entire hydro-meteorological observation network of the Republic of Karakalpakstan, and therefore will cover much of the region area of 164,900 km^2; • 40 local specialists (35% of women) trained on installation, maintenance and operation of the meteorological equipment, and 10 (20% of women) local specialists trained on use the water measuring equipment; • Existing mechanisms of Drought Early Warning System (DEWS) located in Uzhydromet and at Drought Monitoring Center were upgraded and adapted to Amu Darya downstream condition. The DEWS provides both quantitative and qualitative water availability assessment for Amu Darya specific cross-sections with warning lead time of 3 months. Validity of the assessments varies from 70 to 100%;		• The entire outcome 1 is on its way to be achieved. The equipment has already been procured and some initial training conducted. • The improved meteorological network is now in place, producing better information for Uzhydromet. The next step for Uzhydromet is to use this information and develop weather forecasts and models to assess climate change impacts, as well as providing public access to this useful information, particularly for farmers.
	• At least 40% of Dekhan farmers and pastoralists of Karakalpak region will be served by science-based extension; • At least 3 Field School/Extension established to deliver training in adaptation practices to farmers and pastoralists;	• Concept of establishing science-based extension services for subsistence dekhan farmers developed; • 2 Extension Service Centers established (Hub in Nukus, and in Kegeyli pilot district) and conducted field trainings on best adaptation practices such as training on land laser leveling technique attended by 217 (24% of women) farmers from project pilot districts;		

Expected Results	Project Targets	Results (Deliverables)	MTE Assess.	Justification for rating
community level Climate Field School/Extension (CFS /E) for direct outreach to farmers and localized training in adaptation practices.	• At least 20% of targeted Dekhan beneficiaries will be female.	• At least 15% of the project beneficiaries (farmers, dekhan farms, households and rural communities) can receive the required consultancy services from 2 Extension Service Centers established; • 93 potential employees of Extension Service Centers to be further established in 3 pilot districts trained; • As of today, 5,963 (20 % of women) representatives of local communities from five project's pilots (in Kegeyli, Kanlikul, Chimbay, Takhtakupir and Muynak districts) received information on available climate change adaptation services and innovative agro conservation and water saving practices through those 2 Extension Service facilities; • 15,000 stakeholders in Karakalpakstan and overall in Uzbekistan, and 1,500 direct end-users (20%) in 5 pilot districts were informed about the automated hydro-meteorological observation network through demo-workshops, quarterly bulletins, web-resources and wide mass media coverage (TV and radio broadcasting, and press);		
	• At least 5 farmland demonstration meetings covered by the local and national media for adaptation advocacy.	• 15 demonstration meetings and workshops (535 people; 26% of female) conducted on climate change adaptation and resilience and targeting local communities. Information on the events published in newspapers and posted as web-resources, and broadcasted via national and regional radio and TV.		

Source: Adapted from project progress reports and information collected during the field mission in Uzbekistan.

Target achieved
On target to be achieved
Not on target to be achieved

46. Notwithstanding the issue with ambitious targets, the project is making progress and it has about 2.5 more years of implementation to go. In the meantime, the Reviewing Team noted 2 implementation delays. The first one was the project startup date. The project was approved by the AF Board on February 10, 2014, however, the Project Appraisal Committee (PAC) meeting took place only on April 15, 2014 and the implementation started late May 2014. The official date posted on the AF website is May 26, 2014. It is now expected that end of May 2014 is the starting date and May 2020 the ending date of the project. The second delay in implementing the project was due to the delay in transferring the second tranche of the AF grant to UNDP Uzbekistan. According to UNDP Uzbekistan, a delay of 6 months is estimated before the implementing agency received this second tranche; according to UNDP, it delayed the implementation of project supported activities estimated at 6 months.

47. As detailed in table 5 above, the project has made good progress under outcome one. It provided equipment to upgrade 10 meteorological stations that is the entire meteorological network in Karakalpakstan. It also supported training activities of local staff to develop their capacities in using this new equipment, including maintenance and operation of the equipment. It is now moving to the collect of weather data and use this information to develop weather forecasts and models to assess climate change impacts. The project will also support the process to make this information available to the public.

48. The Reviewing Team noted that in addition to the basic support in strengthening the meteorological network of Karakalpakstan, which should, by extension, provide weather forecasts and weather models to assess climate change impacts, there are also macro socio-economic benefits when investing properly in this area. As per a study from the World Meteorological Organization (WMO)[10], providing "*weather, climate and hydrological information, forecasts and, more recently, remotely sensed data and early warnings to the public and private sectors have increased the safety and efficiency of land, sea and air transport, helped communities prepare for and respond to extreme weather events, and facilitated improved decision-making in weather-sensitive economic sectors*". It states that there is no single definitive study on global benefits of these services, but economic studies have consistently generated benefit-cost ratios of greater than one. Some of these studies have shown that when improving meteorological information to reduce disaster losses in developing countries, the benefits-cost ratios range from 4 to 1 to 36 to 1. In the case of a drought early warning system in Ethiopia to reduce livelihood losses and dependence on assistance, the benefits-cost ratios range from 3 to 1 to 6 to 1. In the meantime, this WMO study states that these services do not generate economic and social value unless users benefit from decisions as a result of the information provided, even if the services are of the highest quality. In addition, these services of similar quality provided in two countries can vary significantly in terms of their benefits depending on the relative nature of weather- and climate-related risks, the number and types of users and their capacity to take actions to avoid harm or increase economic output. The WMO study concludes that the generation of meteorological and hydrological benefits is a "value chain" linking the production and delivery of services to user decisions and the outcomes and values resulting from those decisions. It is an important point to remember for the implementation of outcome one. In order for Karakalpakstan to benefit from the project's investments in this area, the project needs to make sure that the weather information that is now produced by the meteorological network is linked to potential users and their decisions.

49. Under this same outcome one, the project supported the development of a concept for instituting a science-based extension services focusing mostly on dekhan farms. This was followed by the establishment of two extension services: one in Nukus and one in Kegeyli district. Some training activities targeting farmers, dekhan farmers and household plot owners took place on best agriculture adaptation practices. An estimated 6,000 people from the surrounding communities to these centers got information on climate change adaptation practices such as agro-conservation and water saving practices. The project is now supporting the expansion of the extension service to three other centers in Karakalpakstan.

50. The Reviewing Team noted that that project had an agreement with a college in Kegeyli to open an extension service to undertake climate resilient conservation agriculture practices and water saving irrigation practices with college students from the area. However, due to the change of the educational system in Uzbekistan and the return to the 11 grades system in the summer 2017, this college was closed. As a result,

10 WMO, WB, UNSAID, GDRR, Valuing Weather and Climate: Economic Assessment of Meteorological and Hydrological Services

the project needs to identify a new pilot educational institution.

51. Under outcome two, the project has also made some progress. It has provided financial support to purchase 7 sets of equipment of laser technologies for land levelling. This equipment has been used in 5 pilot districts: Muynak, Kanlikul, Takhtakupir, Kegeyli and Chimbay all in the Karakalpakstan region over a total area of 680 ha to demonstrate the laser land levelling technique and its benefits, particularly water savings and prevention of land salinization. Over 200 farmers and workers were trained in laser land levelling in pilot areas. A further 22 ha in Kegeyli and Chimbay were used to pilot full complex/set of agro-conservation techniques and water-saving technologies.

52. Initial work has taken place to develop appropriate greenhouse design adapted to the northern part of Karakalpakstan and to identify potential beneficiaries in these communities for the development of greenhouse/hothouse businesses to grow indoor vegetables. Finally, under outcome two, a legislation analysis was conducted to identify legislation gaps limiting the adoption of conservation agriculture and water saving techniques and technologies. Recommendations to improve the legal framework for disseminating these techniques and technologies were made to the government.

53. Under outcome three, the project started by the identification of the most problematic areas in the 5 pilot districts. Then the project supported the development of a concept for instituting a cooperative management scheme for implementing landscape adaptation measures. Training of local communities (51% of women) took place on landscape adaptation measures/approaches and plantation pilots started in 3 districts (Muynak, Takhtakupir and Kanlikul). Then, sand stabilization and pastures reclamation works were initiated on 80 ha in the two most exposed to land degradation/desertification pilot districts (Muynak and Takhtakupir). Based on this demonstration using cooperative management approaches, the plan is to expand this pilot to over 1,000 ha. As a result of project seminars and workshops, two initiative groups were organized in Kanlikul and Kegeyli districts. Khakimiats of these two districts allocated 229 ha of land to the community (5,040 people) in Kanlikul and 550 ha to the community (7,200 people) in Kegeyli for reclamation of pastures, shelter belts, and forests.

54. Finally, under outcome four, the project has been developing knowledge products, including a website and publications. These information products are based on results from piloted activities and are disseminated to stakeholders. Under this outcome, meetings and workshops have taken place to communicate information on climate change adaptation and resilience targeting local communities in Karakalpakstan.

55. Overall, the project is making progress, however, the Reviewing Team found that there are major differences between the strategy under outcome one and the strategy under outcomes 2 & 3. On one hand, outcome one has a clear path that is to provide better meteorological and hydrological information to farmers in the Karakalpakstan region. On the other hand, the implementation paths to reach outcome 2 & 3 are not clear. The project has been developing/piloting a "*catalog of adaptation measures*" but it is not clear how these measures will be disseminated to farmers and communities. There is limited guidance in the project document on how the targets set at the formulation stage for these 2 outcomes will be reached; there is no real planned "*outreach model*" to achieve this type of reach out.

56. The review of the first outcome indicates a clear direction of the project and its contribution to the development of Karakalpakstan, including its adaptation to climate change. The region is now better equipped to monitor the weather and provide weather forecasts and climate change models to assess potential impact. It is now a matter for the project to continue its support to Uzhydromet to use this equipment, develop the capacity of Uzhydromet in producing weather forecasts and climate change models, and making sure that this valuable information is timely available to the public, particularly by local communities in the Karakalpakstan region. As the WMO study shows, the generation of meteorological and hydrological benefits is a "value chain" linking the production and delivery of services to user decisions and the outcomes and values resulting from those decisions.

57. Regarding the implementation of outcomes 2 & 3, the project is to support the implementation of climate resilient farming practices by farmers and landscape level adaptation measures for soil conservation and moisture retention by local communities; both to a large number of beneficiaries: 40,000 dekhan farms for outcome two and 20,000 people organized in at least 10 cooperatives for outcome 3. Notwithstanding these

ambitious targets, the current design does not seem to be conducive for reaching out to such large numbers of beneficiaries. How will the project reach these targets is the key question for outcome 2 & 3? The project is to establish science-based extension services; however, when considering the current context in Uzbekistan, it can only be done on a pilot/demonstration basis to establish such a service with an extension programme, allocate the necessary budgets, mobilize the required resources, etc. It seems that the best the project can do under these two outcomes is to demonstrate a way to reach out to farmers and how to implement a programme promoting adaptation measures to climate change.

58. In conclusion, the project has made good progress under outcome 1 and 4 and it is anticipated that it will meet its targets under these two outcomes. However, regarding outcome 2 & 3, the focus is, currently, more on piloting and constituting a "*catalog of adaptation measures*" adapted to the Karakalpakstan region and less on an "*outreach model*" to reach out to thousands of farmers and communities in the region. Nevertheless, with a budget of USD 3,101,300 (63% of the AF grant) allocated to these two outcomes, there are critical for the success of the project. The Reviewing Team is recommending reviewing the strategy of outcome 2 and 3 – including the review of output 1.4 on extension services - to emphasize the need to develop and pilot an "*outreach model*".

4.2.2. Remaining Barriers to Achieve the Project Objective

59. The project started at the end of May 2014 and will end in May 2020. At the time of this review, the project is in its 41st month of implementation with 31 more months to go before it ends. At this point, there is no critical barriers limiting its implementation over the remaining implementation period. However, its overall effectiveness will depend on how the project will be able to promote adaptation measures to local communities in the Karakalpakstan region. As discussed in section 4.2.1, the project has been piloting a "*catalog of adaptation measures*" and is facing the challenge of outreaching farmers and local communities at large. Under output 1.4, it is piloting several extension service centers but much more is needed to cover the region and ensure that thousands of farmers adopt these measures. The project benefits from a strong support from the national implementing agency – Uzhydromet – and also from government reforms of the agriculture sector that are underway. It should capitalize on these opportunities and review its approach to develop an "*outreach model*", which could then be replicated/scaled up near the end of the project.

60. At the strategic level, the rationale of the project for developing the climate resilience of farming and pastoral communities in the drought prone parts of Uzbekistan, specifically Karakalpakstan was to remove critical barriers preventing the long-term solution that is to protect arid land, increase agricultural productivity while adapting to climate change. Four main barriers were identified at the outset of this project: (i) there is no systematic extension service available to over 100,000 agricultural and pastoral farms in Uzbekistan. Those services, which do exist tend to favor larger farmers and do not take a climate change adaptation perspective; (ii) there is no comprehensive early warning system in place to guide water allocation and crop and pasture planning and management. No tailored forecast products are readily available; particularly to farmers; (iii) there is no government policy nor financial incentives for large-scale adoption of adaptation measures, despite numerous pilot initiatives that demonstrated good agriculture and natural resource management practices: (iv) there are no integrated land use planning and policies for landscape level rehabilitation and sustainable land management to allow for the functional integrity of the arid landscapes and hence greater resilience to climate change impacts.

61. The project – through its activities - has been addressing these four barriers, which ultimately will gauge the overall effectiveness of the project at the end. Removing them is critical for the development of the agriculture sector in Karakalpakstan. As discussed in previous sections, this project is timely and responds to national priorities; however, its focus is, so far, much on the identification and development of best practices. It needs to focus more on outreaching to farmers and local communities to be fully effective. It is the main recommendation of the MTR and there is still enough implementation time to modify the course of action and seek a greater outreach to amplify the adoption of adaptation measures by farmers and communities before the end of the project.

4.3. Project Implementation and Adaptive Management

62. This section discusses the assessment of how the project has been implemented. It assessed how efficient

the management of the project has been and how conducive it is to contribute to a successful project implementation.

4.3.1. Management Arrangements

63. The management arrangements of the AF project is as follows:

- *The National Implementing Partner is Uzhydromet*, a government agency under the Ministry of Emergency Situations. Its branch office in Nukus is also involved in overseeing the implementation of the project in the Karakalpakstan region. Uzhydromet is overall responsible for applying AF inputs in order to reach the expected outcomes/outputs as defined in the project document. It is responsible for the timely delivery of project inputs and outputs, and for the coordination of all other responsible parties, including other government agencies, regional and local government authorities. Uzhydromet fulfills the *Executive Role* to ensure full government support of the project implementation, and also the *Senior Beneficiary Role* representing the interests of those who will ultimately benefit from the project.
- *UNDP is the Multilateral Implementing Entity (MIE)* for this project and fulfills the *Senior Supplier Role*. It provides support to the Project Manager (PM) in order to maximize the reach of the project and its impact as well as the delivery of quality products. UNDP is responsible for administering resources and financial management in accordance with the specific objectives defined in the project document. It undertakes the internal monitoring of the project and of evaluation activities and it is fully accountable for the effective implementation of this project. As the MIE, UNDP – as the *Quality Assurance Entity* - is responsible for providing a number of key general management and specialized technical support services such as briefing and de-briefing of project staff and consultants, general oversight and monitoring; receipt, allocation, and reporting to the donor of financial resources; thematic and technical backstopping; knowledge transfer; policy advisory services; and capacity building. UNDP is particularly tasked with:
    - Identification and/or recruitment and solution of administrative issues related to the project personnel;
    - Procurement of commodities, labor and services;
    - Identification and facilitation of training activities, seminars and workshops;
    - Processing of direct payments.
- *A Project Board (PB)* provides overall guidance. It includes representation from Uzhydromet as the *Executive* and *Senior Beneficiary* and, UNDP as the *Senior Supplier*. Other key national governmental and non-governmental agencies, appropriate local level representatives, representatives of local governments and self-government, and independent third-parties can attend PB meetings as observers. The PB is responsible for making management decisions for the project, in particular when guidance is required by the Project Manager (PM). It oversees project monitoring and evaluations and ensures that required resources are committed. It approves the appointment and responsibilities of the PM and approved Annual Work Plans.
- *A National Project Coordinator (NPC)* acts as the *Executive*. The NPC represents the project "owners". This person is a senior official appointed by Uzhydromet ensuring the full government support to the project.
- *A National Inter-Agency Working Group* was established by a government resolution (September 2, 2014, No. 03-5/885) at the beginning of the project, following the first PB meeting held on December 24, 2014. It is composed of eight (8) representatives from key ministries and agencies (Ministry of Finance, Ministry of Economy, State Committee for Nature Protection, Ministry of Agriculture and Water Resources and Uzhydromet) at the national level. It meets once a year (more if needed) to review the progress of the project and review potential issues faced by the implementation of project activities. Its main objective is to facilitate and coordinate the implementation of the project and strengthen the project ownership by government entities.
- *A Sub-National Inter-Agency Working Group* was also established by a government resolution (October 9, 2014, No. 213-b) to ensure more efficient involvement and coverage of targeted local communities vulnerable to climate change impacts, to establish partnership and cooperation with farmers and dekhan farms in Karakalpakstan as well as to ensure mainstreaming relevant gender activities. It is composed of nine representatives from the regional government ministries and agencies of the autonomous Republic of Karakalpakstan: Ministry of Agriculture and Water

Resources of Karakalpakstan (the Minister is the Coordinator of this working group), Secretariat of Agriculture and Water Resources of the Council of Ministers of the Republic of Karakalpakstan, Specialist on Agrarian and Ecology issues of the Council of Ministers of the Republic of Karakalpakstan, Kengash (Council) of Farmers in Karakalpakstan, Forestry Department of Karakalpakstan, Ministry of Economy of Karakalpakstan, Department of Hydrometeorology, and the Committee for Nature Protection, Lower Amu Darya Basin Management of Irrigation Systems. This group meets regularly, mostly on an ad-hoc basis when there is a need to address potential issues or to make decisions related to the implementation of the project such as signing a protocol or the selection of a procuring entity. No members of this group are part of the national inter-agency working group but it is envisaged by the project management team to include some of these representatives in the national inter-agency working group.

- *The Project Manager (PM)* was recruited in accordance with UNDP's regulations; he is based in Tashkent. The PM is responsible for the overall project coordination and implementation, consolidation of work plans, preparation of quarterly progress reports, reporting to the PB, and supervising the work of project experts and other project staff. He also closely coordinates project activities with relevant government institutions and holds regular consultations with other project stakeholders and partners.
- *A Project Implementation Unit (PIU)* was established at Uzhydromet. It comprises five (5) positions including one UNV: four (4) full-time positions: a Project Manager (PM), a Project Administrative and Financial Assistant, a Project Technical Assistant (UNV) and a Driver; and one (1) part-time position a Public Relation Specialist (50%). The PIU assists Uzhydromet in performing its role as the National Implementing Partner. An office was provided by Uzhydromet.
- *A Regional Project Implementation Unit* was established in Nukus, Karakalpakstan and shares office space with the UN Joint Programme. It comprises four (4) full-time positions including one UNV: a Sub-National Field Coordinator, a Specialist on Landscape Level Adaptation Measures, a second Specialist on Landscape Level Adaptation Measure (UNV) based in Tashkent but with frequent trips to the region, a Project Field Assistant and a Driver.
- *National and International Experts* are hired to conduct specific project tasks. They are under the supervision of the PM, who is to ensure the timely delivery of their assignments.

64. The implementation modality of the project to allocate, administer and report on project resources is the "*UNDP Country Office Support to NIM*" approach; that is project activities are carried out by the Project Team in partnership with Uzhydromet and reporting to UNDP as per the guidelines in the UNDP Programme and Operations Policies and Procedures (POPP). Overall, roles and responsibilities were clearly identified and accepted, including the need to follow administrative procedures from UNDP and the Government of Uzbekistan.

65. The PB met four times since the inception of the project: December 24, 2014, November 3, 2015, December 16, 2016 and December 14, 2017. The review of the minutes indicates an adequate process of reviewing annual work plans and progress made as well as discussing issues and making the required decisions for the PM to move forward. The Reviewing Team noted that at the third meeting (December 16, 2016), UNDP raised the slow progress of the project and that the project "*could do much more and better*". At the same time, UNDP recognized the progress made but emphasized the need to focus more on local communities. It requested the project to continuously monitor project achievements, get feedback from stakeholders and document the social, economic and environmental benefits at the community level.

66. The review indicates that the management arrangements of the project are adequate for the implementation of the project. The project is implemented partly from Tashkent (outcome 1 and 4) and partly from Nukus (outcome 2 and 3). As the implementation is moving ahead, it is anticipated that more and more activities will take place in the Karakalpakstan region. The Reviewing Team noted that this question has already been discussed at the third PB meeting of December 16, 2016 and at the fourth PB meeting of December 14, 2017. In 2016, it was proposed to change the current position of the Project Manager of the UN Joint Programme based in Nukus into a combined position as the Project Manager of the UN Joint Programme and of the components two and three of the AF project, in order to ensure the coordination of activities under these two outcomes in the Karakalpakstan region. This proposal was approved by the PB at this meeting. This change is being implemented since January 2017. The Reviewing Team confirms that the project needed to

adapt its management structure with more presence in the region. Otherwise, the project is implemented by a good technical team of professionals bringing together a broad range of skills and knowledge in the meteorology, hydrology, agriculture, water, pasture and capacity building areas. The project also benefits from a good support from Uzhydromet, the National Implementing Partner. UNDP has also been providing a good and timely backstopping role to the project as well as a management and administrative support for procuring needed goods and services including hiring consultants. It has been fulfilling its responsibilities as the *Senior Supplier* and also as the *Quality Assurance Entity*, providing general oversight and monitoring support services; including a good focus on how the project is progressing toward its expected results.

4.3.2. Stakeholder Engagement

67. As discussed in section 4.1.1, the project is highly relevant to national priorities. According to the project document, it was developed with good consultations of stakeholders. Consultations were led by Uzhydromet, which is the Designated National Authority for the Adaptation Fund in Uzbekistan. An initial consultation meeting was held to outline the critical adaptation priorities that emerged in the Second National Communication (SNC) and to review the AF requirements for project eligibility. In addition to the relevant government entities that were consulted during the formulation stage of this project, both Dekhan agro-pastoralists and large-scale farmers were also consulted to assess their participation in the implementation of the project. A total of 286 people (93 women) from 14 districts (out of 15 districts in Karakalpakstan) were directly consulted through community consultation workshops held at Khokimiat offices and Mahallas. Information collected during these consultations was used to conduct a Conditional Vulnerability Index (CVI) analysis, which was used as the basis for determining the geographic focus of the project in the four most vulnerable districts of Karakalpakstan: Kanlikul, Takhtakupir, Kegeyli and Chimbay[11].

68. The key findings of these consultations have been very useful for the implementation of the project. They include:

- The local land users are not very aware of optimized use of water resources, cultivating drought resistant and salt-tolerant crops in drought years;
- The primary interest of dekhan farms and farmers of northern villages of Kegeyli district is in developing livestock and dairy production rather than farming. The water scarcity in these downstream villages often pose difficulties for farming;
- One of the main activities in developing livestock and diary production is to build a forage base by cultivating alfalfa in order to provide the stability during drought years. Alfalfa is the most appropriate fodder crop in Karakalpakstan due to its drought-resistant and salt-tolerance;
- The northern downstream districts are facing issues with quantity and quality of water resources that they receive. These districts are less likely to be successful in agriculture, yet agriculture is the sole source of income. Many people go to Kazakhstan and Russia to work from spring to autumn season every year;
- The consultations held with government officials on the Social and Economic Development Program priorities indicates that the livestock production is critical in the driest zones and therefore collective production of forage crops is a major livelihood factor.

69. The Reviewing Team found that the CVI analysis was an excellent approach to identify the needs of dekhan farmers and pastoralists. It allowed to focus the design of the project on the needs of beneficiaries. As a result, and based on the CVI analysis findings, the project identified the potential social, economic and environmental benefits for each group: dekhan farmers, commercial farmers and livestock keepers.

70. In addition to the farming communities as beneficiaries of the project, few national and regional organizations were consulted to be part of the project; they include:

- Uzhydromet
- Ministry of Economy
- Ministry of Agriculture and Water Resources
- State Committee for Nature Protection
- State Committee for Land, Geodesy, Cartography and State Cadaster

11 A fifth district (Muynak) was added as a targeted district for the AF project and also the UN Joint Programme. This decision was taken at the PB meeting of December 16, 2016.

- Ministry of Finance
- Ministry of Health
- Ministry of External Economic Relations, Investments and Trade
- Council of Ministers of Karakalpakstan
- Council of Farmers of Karakalpakstan
- Uzhydromet Department of Karakalpakstan
- Other projects and donors

71. However, despite a good analysis and engagement of stakeholders at the outset of the project, no specific strategy was identified in the project document to secure a strong engagement of stakeholders in the implementation of the project. Nevertheless, in order to address this lack of stakeholder engagement strategy, the project - with the strong support of Uzhydromet - established a national (based in Tashkent) and a regional (based in Nukus) inter-agency working groups, which both were formalized through a government resolution (*see Section 4.3.1*). These working groups are currently key instruments for engaging stakeholders. They meet on a need-basis and are de facto the body where technical discussion takes place and proposals are made to move the project forward; if needed these proposals are submitted to the PB for decision. Both working groups are composed of key development players related to the project and provide excellent platforms to discuss ideas, innovations and needs to adapt the agricultural sector to climate change effects in the Karakalpakstan region and increase the coordination and cooperation among agencies.

72. In addition, in order to ensure a good engagement of beneficiaries, the project established five (5) "*initiative groups*", one in each selected district. Each group is composed of 5-7 persons representing the surrounding rural communities. These *initiative groups* are aimed at strengthening the interaction between national and sub-national executing agencies and end-users (beneficiaries) such as farmers, dekhan farms and small land owners.

73. The project set up good mechanisms to reach out to beneficiaries. However, the review conducted for this MTR reveals that the project still needs to increase its outreach to beneficiaries. It is a critical success factor for the project. As discussed in Section 4.2.1, the project has so far focus much on developing a "*catalog of adaptation measures*", it needs now to focus much more on engaging beneficiaries in the five selected districts. The regional inter-agency working group is a good instrument to engage stakeholders but more is needed, particularly the development of a mechanism to engage farmers, dekhan farmers and small land owners at the community level. The project has also been supporting the establishment of several extension service centers, which is also a way to engage communities and promote the adoption of these adaptation measures. Overall, the project needs to develop an "*outreach model*", which should be piloted and hopefully ready to be scaled up by the end of the project.

4.3.3. Work Planning

74. Project Annual Work Plans (AWPs) were produced every year from 2014. These AWPs were developed following UNDP project management guidelines, including the calendar year cycle (January to December for each year). Once finalized, these AWPs were reviewed and endorsed by the PB and approved by UNDP. The budget for these AWPs are systematically recorded in the UNDP Atlas system. These AWPs details the list of main actions to be conducted during the coming year following the structure of the log frame (objective, outcomes, outputs and main activities) of the project. For the group of actions under each activity, they include a tentative schedule (per quarter) when each activity will be implemented, the funding sources (AF and TRAC), and a corresponding budget to conduct these actions.

75. Based on the information collected, the Reviewing Team compared the budgeted annual work plans with the actual annual disbursements; the results are presented in the table below:

Table 5: Annual Work Plans versus Actual Expenditures (AF grant + UNDP TRAC)

Years	AWP Budgets	Actual Expenditures	% Spent
2014	40,906	33,869	83%

Years	AWP Budgets	Actual Expenditures	% Spent
2015	1,188,120	205,602	17%
2016	1,217141	487,853	40%
2017	578,956	410,121[12]	71%

Sources: Project AWPs and UNDP-Atlas CDR Reports

76. Numbers presented in the table above reveal that work planning has not been too efficient up to 2017. Expenditures were well under budget for the years 2015 and 2016, representing respectively only 17% of the approved AWP-2015 budget and 40% in 2016. However, in 2017, the financial management of the project has been getting more efficient; expenditures to end of September 2017 represent 71% of the AWP-2017 budget versus 75% of the time (9 months out of 12). It was noted by the Reviewing Team that the main reason for the low disbursement in 2015 was mostly due to the 6-month delay in receiving the second tranche from the AF grant.

77. As the project is now in full implementation, it is expected that the work planning will continue to be more efficient. Nevertheless, when considering the remaining AF budget to be expended between October 2017 and May 2020, the yearly average of project expenditures would need to drastically increase for the entire AF grant to be expended by May 2020. A rapid calculation of the remaining AF grant indicates that the expenditures during the remaining 32 months of implementation should be about USD 1,475,000 per year or about USD 123,000 per month. The review conducted for this MTR indicates that it is unlikely that this remaining budget will be spent by May 2020 (*see also Section 4.3.4 below*).

4.3.4. Finance and Co-finance

78. As discuss in Section 4.3.1, the implementation modality of the project to allocate, administer and report on project resources is the National Implementation Modality (NIM); that is project activities are carried out by the Project Team in partnership with Uzhydromet and reported to UNDP as per the guidelines. Under this approach, the government has key control functions related to all aspects of project leadership, management and implementation (nominates the National Project Coordinator, who co-chairs the Project Board, considers and approves key milestones, such as annual work plans, budgets, management responses to mid-term and final evaluations, participates in monitoring, etc., as further described in the Management Arrangements). At the same time, under the NIM approach, UNDP has committed to provide some specialized technical oversight services to the project. This commitment was confirmed by a letter of co-financing to this project reflecting an amount of USD 200,000 taken from its core budget to finance the cost of these direct project services to be provided during the entire project duration.

79. At the time of this evaluation, the review of financial records as recorded in the UNDP Atlas system indicates that the actual expenditures allocated against the AF project grant for the years 2014 to September 2017 represent just over 21% (USD 1,056,797) of the approved budget of USD 4,990,878 versus an elapsed time of 56% (40 months out of 72). The breakdown of project expenditures by outcome and by year is presented in the table below.

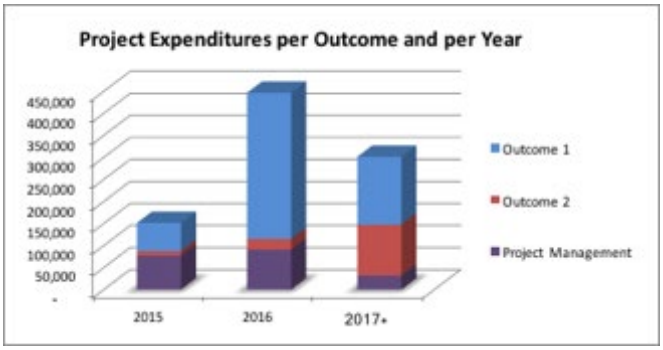
Table 6: UNDP-AF Project Funds Disbursement Status (in USD)

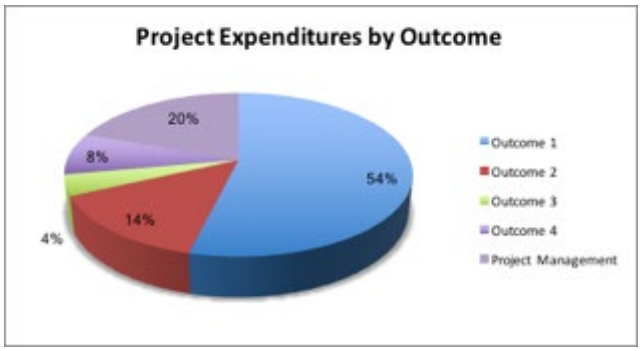
Component	Budget (USD)	2014	2015	2016	2017[8]	Total (USD)	Total/ Budget
Outcome 1	**1,257,000**	19,448	63,931	331,802	153,637	**568,819**	**45.3%**
Outcome 2	**1,377,400**	-	10,501	24,032	115,802	**150,335**	**10.9%**
Outcome 3	**1,723,900**	-	8,011	13,076	22,302	**43,389**	**2.5%**

12 Includes expenditures from January to end of September 2017.

Component	Budget (USD)	2014	2015	2016	2017[8]	Total (USD)	Total/ Budget
Outcome 4	**273,400**	100	20,934	34,185	32,545	**87,764**	**32.1%**
Project Management	**359,178**	6,997	76,861	90,778	31,854	**206,490**	**57.5%**
TOTAL	**4,990,878**	26,545	180,238	493,873	356,140	**1,056,797**	**21.2%**

Sources: UNDP Atlas Financial Reports (Combined Delivery Reports to September 2017 (CDRs)) and information collected from the Project Team.

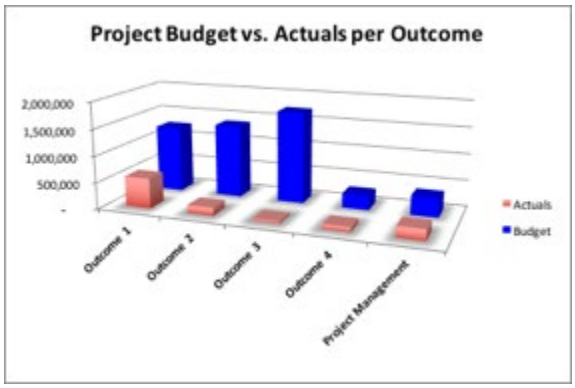




80. As discussed in section 4.3.3, these financial figures confirm the slow disbursements by the project. With a project starting date of June 2014, the project expended USD 1,056,797 to the end of September 2017 that is only 21% of the AF grant versus 56% of the project timeline (40 months out of 72 months). As of October 1, 2017, the remaining budget from the AF grant is USD 3,934,081 (79%). When considering the timeline left for implementing the project, it is doubtful that the entire budget will be expended by May 2020. Taking as a benchmark the average monthly disbursement of the first 40 months of USD 26,420, the average monthly disbursement for the remaining period of 32 months needs to be USD 122,940 or almost five (5) times the average of the first 40 months of implementation. It is not impossible to achieve but it requires a drastic change in managing the project with a significant increase of project activities to reach this average.

81. At the same time, the project is moving ahead with its implementation plan with the anticipation that it will focus more and more on reaching out to beneficiaries in communities in the Karakalpakstan region. Based on the assessment of the finances of the project, the Reviewing Team anticipate that the entire AF grant will not be totally expended by May 2020; it recommends a time extension justified with more investments in engaging communities to adopt these adaptation measures. By May 2020, any extension of activities conducted with the support of the project should provide a good return in term of results. By then, communities will be aware about these adaptation measures, pilots will have demonstrated these measures and their associated benefits for communities and some communities will have started to adopt these measures. Any time extension should translate into more adoption of these measures benefiting from the various instruments developed by the project.

82. The review of expenditures against budgets per outcome reveals an unequal level of spending. The table above indicates that over 45% of the budget for outcome 1 has been expended to September 2017 but only 10.5% and 2.5% have been expended for respectively outcome 2 and 3. Finally 32% has been spent under outcome 4 and over 57% for project management. The latter (project management) represents almost 20% of the expenditures so far; this is high and should be carefully monitored.



83. The Reviewing Team also noted that despite a somewhat similar AF budget for outcome 1, 2 and 3, so far, the project has spent much more on outcome 1 than on outcome 2 and 3; 45% of the total amount spent so far was spent on activities and procurement of goods under outcome 1. These financial figures also confirm the good progress made under outcome 1 and slower progress under outcome 2 and 3. It also confirms the

need for the project to focus more on reaching out to beneficiaries (outcome 1 and 2), promoting adaptation measures and seeking their adoption by farmers, dekhan farmers and small plot owners. As discussed in other sections above, at this point, it is one of the main critical success factors for this project. The budget is there to be used for promoting the adoption of these adaptation measures.

84. From a financial disbursement point of view, the Reviewing Team noted that some procurement activities are underway to procure equipment for the project. It includes 7 sets of laser levelling equipment (graders + information technology equipment); 4-5 sets of zero-tillage planters; about 500 hand tools for gardening; 44 units of water saving for drip irrigation; 1 or more tractors; and later some greenhouse equipment. All this procurement should increase the disbursements of the project funds in the coming months and contribute to increase the rate of spending.

Co-financing

85. The co-financing commitments at the outset of the project totaled the amount of USD 200,000 (*see table below*), which represented almost 4% of the total budgeted amount in the project document of USD 5,190,878 (AF grant + co-financing). As discussed above, this co-financing commitment of USD $200,000 of cash from UNDP is to finance specialized technical oversight services to the project.

Table 7: Co-financing Status

Partner	Type	Commitments (USD)	Actuals (USD)
UNDP	Cash	200,000	80,647
	Total (USD)	**200,000**	**80,647**

Source: Project Document and UNDP CDRs to September 2017

86. At the time of this MTR, information from the UNDP "*Combined Delivery Reports (CDRs)*" indicates that so far UNDP has contributed an amount of USD 80,467 as co-financing to this project or 40% of the committed amount of USD 200,000. In addition, despite no reporting of government agencies contribution to the project, the Reviewing Team confirms that project partners have been contributing critical resources (mostly in-kind) to the implementation of this project. Uzhydromet has provided office space for the PIU and overall have led the implementation of the project. So far, staff from partner organizations have been well engaged in project activities when needed.

4.3.5. Project-level Monitoring and Evaluation Systems

Available upon request

4.3.6. Reporting

Available upon request

4.3.7. Communications / Knowledge Management

87. From the outset of the project, knowledge management and communication have been at the forefront of the implementation of this AF project. It is part of the *Project Results Framework (PRF)* as a full expected outcome. Outcome #4 is "*Knowledge of climate resilient agricultural and pastoral production systems in arid lands generated and widely available*". It is implemented through three (3) outputs: 4.1: Inventory of all tested agronomic and water saving measures to map out successful practices; 4.2: Analysis and lessons learned for climate resilient agricultural and pastoral production systems in arid lands documented and disseminated through printed and web-based publications; and 4.3: Quarterly farm and pasture land demonstration meetings with participation of national, local authorities, media and communities delivered.

88. As presented in section 4.2.1, under this outcome an information strategy has been developed. It identified tools and methods to disseminate information and knowledge accumulated by the project. So far, five best practices were selected, documented and published. Several meetings/workshops have taken place

with communities in the Karakalpakstan region promoting climate change adaptation measures. Out of a total budget for this outcome of USD 273,400, USD 87,764 (57.5%) has been spent to the end of September 2017.

89. The review conducted for this MTR reveals that it is good to have knowledge management/ communication "embedded" in the strategy (PRF) of the project. It is part of the expected results of the AF project and it is monitored through the M&E system in place which measures the performance of the project. With its information strategy, the project is now equipped with tools and methods to collect, structure, package and disseminate knowledge on climate change adaptation measures adapted to the Karakalpakstan region. This is a critical feature of the project when considering that some targets are to reach out to a large number of communities in the region. The recommended review of the project to focus more on communities and their adoption of adaptation measures made by this MTR should also include a review of activities implemented under this outcome #4. Currently, activities under this outcome are focusing a lot on raising awareness, which is a good first step in the promotion of adaptation measures but these activities should also focus more adopting these measures particularly through appropriate training activities focusing on "*how to ....*".

4.4. Sustainability

90. This section discusses how sustainable project achievements should be over the long-term. It includes a review of the management of risks and specific risks such as financial risk, socio-economic risks, institutional framework and governance risks, and environmental risks.

4.4.1. Management of Risks and Assumptions

91. Project risks were identified at the formulation stage and documented in the project document; including the mitigation measures for each identified risk. It is a list of three (3) anticipated risks, which are presented in the table below as well as their respective mitigation responses.

Table 8: List of Risks and Mitigation Measures Status

Project Risks	Rating	Mitigation Measures at formulation stage	Mitigation Measures as of May 2017 (from PPR)
1. Reluctance of farmers or pastoralists to depart from over-irrigation and overutilization of inputs approach towards climate resilient conservation agriculture	Low	• The project takes a step-by-step approach and identifies "lead" farmers who have proven to be open to experimentation and have already demonstrated innovation. Selected demonstration farmers will provide evidence of benefits derived from low input and high output conservation agriculture and water saving methods. This will inspire and motivate neighboring farmers to adopt the same practices. Evidence of increased productivity and decreased losses during the dry seasons will be closely monitored and demonstrated.	• The risk was mitigated through number of knowledge sharing and best practice demonstration events conducted by the project. At least 160 farmers (20% of women) attended the three field hands-on workshops, within which they familiarized with land laser leveling demonstrations/trainings conducted at 500 ha of lands located in the project pilot districts (Kanlikul, Chimbay and Takhtakupir). Agro conservation and water saving practices were piloted at two project pilot districts (Kegeyli and Chimbay). 247 farmers and householders (205 women) raised their awareness about agro conservation and water saving technologies applicable at local level through workshops conducted at four project pilot districts (Kegeyli, Chimbay, Takhtakupir and Kanlikul). 100 stakeholders (10% of women) of line ministries, Committee of Women and farmers attended two thematic demo workshops and increased their understanding about annual project targets and results achieved. Members of local communities in two project pilot districts (Muynak and Takhtakupir) familiarized with piloting sand stabilization and pasture reclamation at 80 ha of lands. 132 representatives (51% of women) of local communities learned about landscape adaptation measures that can increase their resilience to droughts and other climate change impacts through two series of field workshops held in three project pilot districts (Muynak, Takhtakupir and Kanlikul).
2. Repeated drought	High	• Whereas the repeated occurrence of drought is a serious probability, the project has been designed to help ensure resilience at household	• The Drought Early Warning System (DEWS) previously designed for run-off forming zones and applicable for different river basins was upgraded for the downstream of the Amu Darya river. Currently, early warning about low water availability or drought can be issued for the

Project Risks	Rating	Mitigation Measures at formulation stage	Mitigation Measures as of May 2017 (from PPR)
		level thanks to water saving methods and implementation of conservation agriculture techniques and forage production, etc.	regions located at the downstream of the Amu Darya river with lead-time of 3 months. Upgraded DEWS provides quantitative and qualitative water availability assessments published in the project's quarterly bulletins that are targeted at central and regional government decision-makers, farmers and householders. Thus, the given risk was reduced during the reporting period and it is expected to be further reduced during the next reporting period due to wider dissemination of DEWS products among end-users in the project pilot districts in Karakalpakstan.
3. Low level of cooperation between executing institutions	Medium	• The project operates at multiple levels and therefore will require the leadership of Uzhydromet and the Ministry of Agriculture and Water Resources. Close cooperation will be assured through a high-level Steering Committee jointly hosted by Uzhydromet and the Ministry of Agriculture and Water Resources.	• Within the two demo workshops, a high-level meeting (at sub-national level) was conducted to strengthen partnership with and ownership of all stakeholders involved in implementation of the project activities in Karakalpakstan. Meeting was chaired by the Chairman and Deputy Chair of the Council of Ministers of Karakalpakstan. Moreover, the two Inter-Agency Working Groups (national and sub-national levels) established by the particular government resolutions to strengthen coordination and cooperation of all national partners involved in the Adaptation Project were supplemented with five initiative groups (each group includes 5-7 persons representing the rural communities) in each project pilot district. Those are aimed at strengthening the interaction between the national and sub-national executing agencies, and therefore significantly reduce the risk.

Source: Project Document and PPRs.

92. The project team has been monitoring these risks and reporting the current status of these risk in each Project Performance Report (PPR). No risks have been added to the risk log (3) identified during the formulation of the project. In the PPR 2014-15 and PPR 2015-17, risk assessments rated the three risks as respectively: low, high and low in both reports.

93. The review of these risks reveals that there are not comprehensive enough. They cover some good risk areas but the nature of this type of project has additional risks such as a change in political support for promoting and integrating adaptation measures into the agricultural sector; insufficient capacity development and practical know-how within state institutions and local authorities by the end of the project to allow sustainability of project achievements; and implement legislative changes in a timely manner that are required to develop an adequate enabling environment for the promotion and use of adaptation measures. It is recommended to add these three (3) risks to the risk log of the project and reported yearly through the PPRs.

94. In the meantime, despite these risks, the Reviewing Team found that the project is progressing well and that through adaptive management, these risks are constantly mitigated; hence decreasing the chance that these risks would materialized. For instance, the risk of a "*low level of cooperation between executing institutions*" has been mitigated with the establishment of a national and a regional inter-agency working groups as well as five "*initiative groups*" (one in each selected district). These gatherings provide excellent platforms to improve coordination and cooperation among agencies, exchange information, and link the national and regional agencies with communities. Overall and as discussed in section 4.1.1, the project enjoyed a good support from the government, benefiting also from the current government strategy to reform its agricultural sector.

4.4.2. Sustainability Strategy

95. When it comes to sustainability of project achievements, the sustainability strategy discussed in the project document is not fully convincing; it varies greatly among the four outcomes of the project. For achievements under outcome 1, it was stated that sustainability will be ensured through the integration of achievements within government funded institutions such as Uzhydromet, Ministry of Agriculture and Ministry of Water Resources, local administration, and Council of Farmers, dekhan farms and rural

households. The physical infrastructure financed with AF funds, together with the development of capacity for the use of this equipment and the interpretation of data, complemented through a Climate Field School network to be established in the project area to promote public awareness of the value of weather information and of climate trends were identified as key elements to ensure the sustainability of project achievements under outcome 1. The Reviewing Team confirms that this approach is good and should ensure the sustainability of these achievements. Currently the equipment had been procured and some training took place. However, more training will be needed along the collection of weather data to develop weather forecasts and climate change models. Additionally, the network of climate field schools needs to be established soon to promote the importance of weather data and how to access it. Analyses of the channels of communication (smartphones, internet, radio, TV channels, world of mouth etc.) used by end users would also be needed to identify the effective way to deliver weather data to end users: farmers, dekhan farms and household plots users.

96. Under outcome 2, the sustainability strategy is less obvious. It is planned that the financial support to build horticulture greenhouses for farmers who could not previously afford them will increase crop productivity - even under a scenario of declining average rainfall - thus ensuring livelihoods for targeted local farms. Also, the strategy is to ensure the sustainability of well tested farm-based adaptation measures for replication and upscale through the development of a legal and regulatory framework. Overall, it is anticipated that piloted/ demonstrated adaptation measures (e.g. conservation agriculture, improved irrigation and drainage, fodder production, etc.) will bring greater productivity and drought preparedness capacities and that on-farm demonstrations of adaptation measures will stimulate uptake of the successful adaptation practices. It is true that demonstrations will contribute to a potential uptake by beneficiaries. However, it could be said that this is a "passive" strategy that is because of the demonstrations, beneficiaries should adopt these measures. Unfortunately, it is often not the case; the "*buy-in*" process following demonstrations is difficult and far from certain. If the project is closing before any significant uptake by beneficiaries, the chance of adoption of these measures, and, therefore, sustain the achievements under this outcome will be greatly diminished. The project needs to start focusing now on this uptake of adaptation measures by looking into developing an "*outreach model*". On one hand, the project has been developing a "*catalog of adaptation measures*" and on the other hand beneficiaries throughout the Karakalpakstan region are asking for help in bettering their livelihoods and adapt to climate change effects; to link both, an "*outreach model*" needs to be developed. What system and how can it bring adaptation measures to beneficiaries in a sustainable way? An extension services may be the answer but it needs to be sustainable over the long term.

> Local knowledge and traditions need to be taken into account. A good example was given to the Reviewing Team by one interviewee:
>
> *Historically Uzbek people leave in communities and if a farmer in a community has a piece of equipment such as a tractor, the whole community would benefit from it. It is a complicated process to introduce sustainable practices at the community level, however if the community adopts a practice, which ends up as a success story, the practice may scale up to the other communities very fast.*

97. Under outcome 3, it was anticipated that communities will be organized in cooperatives, then communities will volunteer to plant saksaul and tamarix and benefits from the services and products from these trees. Similar to the strategy for outcome 2, sustainability is far from certain. As per the project document, it is hoped that demonstrations of concrete farming and pasture management methods that provide evidence of bringing benefits of greater food security and resilience to droughts will trigger replication and hence contribute to the sustainability of these achievements. It is true in theory but experiences show that this approach, often does not work alone if other measures are not implemented such as types of incentives to implement these new measures. Overall, best practices from other UNDP and/or donor projects need to be reviewed to assess/test any existing community-based sustainable land management practices and land reclamation practices in Uzbekistan and in the Central Asia Region.

4.4.3. Financial risk to Sustainability

98. When reviewing the sustainability of project achievements, financial risk is an area where some questions related to the long-term sustainability of project achievements need some attention. The project supports Uzhydromet to improve its hydro-meteorological monitoring infrastructure, which will serve as the backbone for a drought early warning system as well as providing better weather data to develop weather forecasts and models to assess climate change impacts. The project is also piloting adaptation measures such as a suite of adaptive multi-benefit agronomic practices for crops and livestock, ranging from conservation

agriculture through horticultural greenhouses and pasture management; and finally, it seeks to reduce the impacts of higher temperatures and lower rainfall on crop productivity through large scale plantations of trees. Within this strategy, the project has been or will be procuring meteorological and hydrological equipment and equipment to implement several pilots such as tractors, graders, laser levelling technologies, greenhouse equipment, etc. Despite that these technologies and practices are optimal for a region like Karakalpakstan to adapt to climate change, they still require resources to maintain them over the long term and possibly to replace them further in the future. It is the case for Uzhydromet, which needs to maintain and replace its equipment, but also for communities to be able to use the required equipment to implement some adaptation measures such as the laser land levelling practice. Currently and as discussed in other sections of this report, this review confirms the government's commitment to reform and adapt its agricultural sector to climate change. It is a priority for the government and so far, it is committed to the change process in this area. Agriculture is an important economic sector for Uzbekistan and particularly for Karakalpakstan; it is expected that the government will continue to implement this priority and support it with the necessary resources, including resources to scale-up the project achievements to other parts of Uzbekistan.

4.4.4. Socio-economic risk to Sustainability

99. The review indicates that there is no socio-economic risk to sustainability. In the worst-case scenario, if the project has very limited impact, it should not affect negatively the project beneficiaries and the "*business as usual*" scenario should continue. Nevertheless, the project is progressing adequately and it is expected that the implementation of these adaptation measures should have a positive socio-economic impact on the livelihood of farmers and, overall, on communities in the region, particularly dekhan farms and small land plot owners. With the introduction of new sustainable agricultural practices, land should be better conserved and productivity is expected to increase. As a result, livelihood of rural communities is expected to be better over time.

4.4.5. Institutional framework and governance risk to Sustainability

100. As discussed previously in this report, the project is a direct response to the government priority to reform the agriculture sector, adapt to climate change and develop sustainably the region of Karakalpakstan. The project is "rooted" in national priorities, and it is particularly aligned with the "*State Programme for the Development of the Aral Sea Region 2017-2021*", which was recently adopted. It is also well aligned with a set of recently approved Decrees to strengthen/reform the agriculture sector including the Council of Farmers, the development of an extension service and the efficient use of land by farmers, dekhan farms and small land plot owners. It is anticipated that the government will continue in this direction in the foreseeable future and that the project will be able to institutionalize its achievements, which are expected to be scaled-up in other arid parts of Uzbekistan.

101. One area that requires a particular attention from the implementation team and also the PB during the remaining period of implementation is the monitoring of the extension service pilots. Three extension services are already operating and two more should be established soon. It is important for the sustainability of the project to assess these pilots, learn lessons and identify best practices but also focus on institutionalizing the best extension practices coming from these pilots in Karakalpakstan to sustain an "*outreach model*" promoting adaptation measures to farmers, dekhan farmers and small land plot owners.

4.4.6. Environmental risk to Sustainability

102. The review did not find any environmental risks to the sustainability of project outcomes. The project supports the implementation of adaptation measures to climate change, including climate resilient farming practices and landscape level adaptation measures for soil conservation and moisture retention. Ultimately, the achievements of the project that is "*to develop climate resilience of farming and pastoral communities in the drought prone parts of Uzbekistan, specifically Karakalpakstan*", should have a medium and long-term positive environmental impacts over the natural resources in the project area. The implementation of adaptation measures should render the management of these arid ecosystems more sustainable over the long-term, including the reclaim of abandoned/pasture lands.

Annexes

Available upon request