



United Nations Development Programme

ENVIRONMENT AND ENERGY

SUSTAINABLE LAND MANAGEMENT AND BIODIVERSITY CONSERVATION FOR COMMUNITY-BASED ADAPTATION

A Comparative Study of the UNDP-GEF Community-Based Adaptation Portfolio in Kazakhstan



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Cover Caption: Women, who had no presence in community work before the CBA project, are mainstreamed in the CBA project and perform land management field works as weeding, tree maintenance, harvesting and haymaking in efforts of combating land degradation brought on by climate change. (Shyrkyn Project)

Photo Credit: UNDP/Yelena Yefimova for the UNDP-GEF CBA Kazakhstan

FOREWORD

Climate change is one of the most serious and challenging issues of our decade. Millions of people and ecosystems are experiencing harsh conditions resulting from global warming. While climate change mitigation offers opportunities to remedy increasing greenhouse gases (GHG), national mitigation pledges still fall short of the objective set by governments to keep global warming below 2°C. Without increased action, this shortfall commits mankind to an inexorable increase in GHG emissions in the near future until the 'gigatonne gap' (between what countries have pledged and what scientists say is necessary) is filled. Alongside low-carbon development strategies, adaptation to climate change is a promising path to securing investments in poverty reduction, food security, gender equality, child and maternal health, and environmental sustainability, and to ultimately achieving the Millennium Development Goals. The United Nations Development Programme (UNDP) is working on a wide range of initiatives to mainstream climate change adaptation into human development, including the UNDP-GEF Community-Based Adaptation (CBA) Programme.

The CBA Programme is a five-year (2007-2012) initiative funded by the Global Environment Facility (GEF), the Governments of Japan and Switzerland, and the United Nations Volunteers. It aims to reduce the vulnerability and strengthen the adaptive capacity of local communities to climate change in ten pilot countries in Africa, Asia and the Pacific, and Latin America and the Caribbean. The programme collaborates with national partners, United Nations Volunteers, United Nations agencies, UNDP country and regional offices, and national GEF Small Grants Programme (GEF SGP) staff to carry out adaptation work with community organizations on the ground. The GEF SGP provides the essential country-level management structure and delivery mechanism for the programme. This inclusive approach streamlines community access to microgrants, engages a diverse group of national stakeholders in community projects and promotes grassroots-based solutions to climate change risks.

The CBA programme was primarily set up to provide a systematic analysis of the methodological approaches and to test local-level adaptation measures in various geographical areas and ecosystems globally. The programme has made progress to this end, with specific insights evolving from each pilot country. This report analyses and summarizes Kazakhstan's experience in developing and implementing CBA projects. More importantly, it presents innovative practices and emerging lessons resulting from the implementation of a cluster of projects in the area of sustainable land management and biodiversity conservation. Ideally, the results will be disseminated, replicated and brought to scale for use in vulnerable communities facing similar conditions across the globe.

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UNDP-GEF Executive Coordinator

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ACRONYMS

CBA	Community-Based Adaptation
GEF	Global Environment Facility
GHG	Greenhouse gas
IAS	Impact Assessment System
PIA	Participatory Impact Assessment
SGP	Small Grant Programme
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
VRA	Vulnerability Reduction Assessment



Pasture landscapes typical of Kazakhstan.

*UNDP/UNDP-GEF CBA Kazakhstan
(Zhangeldy project)*

INTRODUCTION

Kazakhstan, a transcontinental country in central Asia and Europe, represents the ninth largest country in the world and the world's largest country by land area coverage (UN 2010). With a temperate climate and semiarid to arid flatland terrains, Kazakhstan is facing a high degree of desiccation from climate change and significant exacerbation of baseline (non-climate) pressures. National Communications to the United Nations Framework Convention on Climate Change (UNFCCC) indicate an increase in average temperature of approximately 1.4°C by 2030 and northward migration of humidity zones to more than 450km (UNDP 2008b). The increase in aridity conditions significantly amplifies the vulnerability of Kazakhstan's ecosystems to land degradation, making climate change a significant challenge for the natural environment and the poor communities, whose livelihoods heavily depend on climate-sensitive resources (agriculture and livestock production).

The UNDP-GEF Community-Based Adaptation (CBA) Programme supports the implementation of CBA projects, which aim to enhance the adaptive capacity and reduce the vulnerability of poor communities to climate change in ten pilot countries, including Kazakhstan. The CBA Programme in Kazakhstan focuses specifically on the agricultural sector (livestock breeding and grain production)—identified by the First and Second National Communications to the UNFCCC as one of the most vulnerable sectors to climate change and with significant potential for reducing climate-induced land degradation (UNDP 2008b). Coming to a close, the CBA Programme has implemented nine projects in the country to reduce community vulnerability and secure global environmental benefits with a focus on sustainable land management.

This report analyzes and summarizes Kazakhstan's experience in developing and implementing CBA projects and is companion to similar analysis carried out for two other important CBA countries (Jamaica and Samoa). The analysis highlighted in this report builds on a cluster of three projects¹—one in grain production ('Adaptation of farmers' agricultural practices in response to intensified climate aridity in Arnasai Village'), one in livestock breeding ('Dry-lot cattle feeding as cattle farming adaptation method to reduce climate change risks in Zhangeldy Village'), and one at the nexus of these two areas ('Forest protection belts to combat dry hot winds, retain snow and moisture as an effective method to reduce climate change risks in Shyrkyn Village')—deliberately selected to reflect the entire CBA portfolio in Kazakhstan. This report compares climate risks and adaptation responses in selected CBA projects, resulting impacts on communities and their ecosystems, enabling factors for successful adaptation, challenges encountered, dissemination and replication strategies and lessons learned.

¹ The robustness of the analysis in Kazakhstan stems not from the number of projects in consideration, but the nature and variety of issues selected projects addressed.

CLIMATE CHANGE RISKS

The three selected CBA projects in the Kazakhstan present remarkable similarities in the terms of the risks associated with climate change. Risks to both grain production and livestock breeding primarily result from increasing aridity, decreasing precipitations, and increasing dry hot winds.

Arnasai Village is located 50km from Astana City on the bank of the Ishim River in direct proximity to Astana Reservoir. The community relies mainly on the production of wheat, potato and other vegetables on irrigated fields for livelihood. Reduced water flow in the village reservoir due to increasing temperatures and decreasing precipitation threatens water supply for farmland irrigation. In addition, rapid melting of snow accompanied by strong winds dries out the soil and causes erosion. Resulting damages to crops lead to significant decrease in vegetable yields, especially the village's main food product: potato.

Zhangeldy Village is situated in southern Kazakhstan within the boundaries of Turan lowland and Tien-Shan Mountains. Livestock production is the community's primary source of subsistence. Steady decline in precipitation, increase in summer temperatures, frequent droughts and dry hot winds lead to a decline of surface water level, soil erosion, and subsequent deterioration of pastureland quality (withdrawal of the most significant forage crops) and productivity. Cattle production on such lands is profitless.

Shyrkyn Village is located in South-Kazakhstan Oblast. Livelihoods in this community consist primarily of farming and animal husbandry. Year-to-year reduction in precipitation and early increase in temperatures during the spring result in early snow-melt and rapid reduction of soil moisture. Similarly, dry hot winds desiccate the soil, eroding and destroying its upper fertile layer. These changes lead to shrinkage of pastoral vegetation cover and reduction of the agricultural crop yields, adversely affecting local community livelihoods.

In summary, Kazakhstan is exposed to three major climate risks: soil erosion, water shortage and soil aridity. Soil erosion is predominant and common among the three CBA projects. Water shortage and soil aridity are unevenly distributed. They all lead to the degradation of pasture and farm lands, resulting in a decrease in the productivity of livestock and crops, and consequently an increase in the vulnerability of local communities and their ecosystems. The goal of the UNDP-GEF CBA Programme has been to remedy these conditions through the promotion of climate-resilient adaptation measures.

ADAPTATION MEASURES

The rationale behind the CBA Programme is to generate innovative, context-specific and culturally appropriate adaptation techniques, methods, systems or strategy with high potential of dissemination, replication and up-scaling. In general, the CBA Programme in Kazakhstan has used a combination of 'soft' and 'hard' adaptation measures to address vulnerability factors².

Adaptation measures in Arnasai Village have combined soft and hard technologies for water-saving and soil restoration. Hard technologies include the introduction of drip irrigation and the improvement of existing sprinklers with special irrigation machinery (water-saving nozzles). The optimal use of climate-resilient varieties of winter crops (a soft technology) also contributes to soil restoration.

In Zhangeldy Village, adaptation measures have resolved around soft technologies for improved livestock management. The two adaptation measures implemented by the CBA project include the introduction of high productivity and climate-resilient breeds of cattle and the introduction of rotational grazing in near-village enclosed pastures.

Like Arnasai Village, Shyrkyn Village has combined soft and hard technologies for water-saving, soil protection and livestock management. However, in addition to hard technology - drip irrigation - implemented in Arnasai Village, Shyrkyn Village has also used soft technology - establishment of forest belts - to retain snow and conserve a more humid microclimate for increased

² We distinguish hard adaptation measures, which imply the construction of some sort of infrastructure, to soft adaptation measures, which refer to use of components of the natural system.

soil moisture. This technique also helps protect soil from potential wind erosion by reducing wind velocity. On the other hand, remote seasonal grazing (soft adaptation technology) has been used for livestock management.

Overall, adaptation measures implemented include a combination of hard and soft technologies focused on water saving and land management. These adaptation measures highlight several similarities and differences among the CBA projects in Kazakhstan:

- The use of soft technologies has been widely distributed throughout the CBA portfolio. Each project includes at least one soft technology, primarily for land restoration;
- Quite often, technologies used to achieve the same adaptation goal have been project-specific, addressing the particular needs and issues of the village. For example, water-saving technology has consisted of the introduction of drip irrigation (hard adaptation) in Arnasai Village versus forest belts (soft adaptation) in Shyrkyn Village. Drip irrigation installations were approached in two ways. For Arnasai project, the drip irrigation system was meant for small land areas (up to 5-8 acres) to grow vegetables, which was easily done by local Committees. In Shyrkyn project however, the approach was to demonstrate irrigation system in large territories (5-20 ha) for growing forests etc.;
- Adaptation measures implemented also reveal site-specific characteristics. For example, livestock management strategies have focused on rotational grazing in enclosed pastures near Zhangeldy Village, but on remote seasonal grazing in Shyrkyn Village.



CBA staff members discuss drip irrigation system advantages with local community members.

UNDP/UNDP-GEF CBA Kazakhstan (Shyrkyn project)

BOX 1: OVERVIEW OF UNDP-GEF ASSESSMENT METHODS

Vulnerability Reduction Assessment (VRA) is a form of Participatory Impact Assessment (PIA) that measures a community's perception of its vulnerability and the potential of adopted measures to lead to successful adaptation to climate change. Perception of change is captured from changes in VRA scores—ranging from zero to five, five meaning high impact or high confidence and zero referring to low impact or low confidence—obtained from communities' responses to a set of four questions tailored to locally-relevant vulnerability factors, and obtained by consensus during a series of three community meetings over the duration of a CBA project (UNDP 2008). Below is an example of VRA questions asked to community members in the context of vulnerability related to soil erosion and landslides.

1. **Assessing current vulnerability** – How serious are the current impacts of soil erosion and landslides on your livelihoods?
2. **Assessing future climate risks** – How serious the impacts of increasing soil erosion and landslides will be on your livelihoods without a change to current practices?
3. **Formulating an adaptation strategy** – What are the barriers (institutional, financial, technical, etc.) that stop you from carrying out measures to reduce soil erosion and landslides?
4. **Continuing adaptation process** – How confident are you in the capacity of adaptation measures to reduce your vulnerability to climate change and about your capacity to sustain these activities after the project?

Impact Assessment System (IAS) is an assessment method required for UNDP-GEF funded projects to measure contribution to global environmental benefits. In Kazakhstan, the IAS was carried out in sustainable land management based CBA projects. For biodiversity conservation, IAS reports on the number of critically endangered species, endemic species and ecosystems protected or under protection. In the context of sustainable land management, IAS shows the number of hectares of land restored or sustainably managed. The UNDP-GEF CBA Programme that draws resources from the GEF Strategic Priority on Adaptation (SPA), as well as all GEF SPA projects, should be able to show a positive contribution toward reducing global warming. In the case of the CBA projects in Jamaica, their score reflected important progress through CBA measures related to biodiversity protection and sustainable land management.

IMPACTS OF CBA INTERVENTIONS ON COMMUNITIES AND THEIR ECOSYSTEMS

The evaluation of the impacts of implemented adaptation techniques on communities and their ecosystems is a central component of the UNDP-GEF CBA programme. The impact of CBA projects is evaluated using two assessment methods: **Vulnerability Reduction Assessment (VRA)** and **the Impact Assessment System (IAS)**. VRA measures communities' perception of their current and future vulnerabilities and adaptive capacity at a specific point in time. IAS measures CBA's contribution to global environmental benefits (see Box 1 for more details).

TABLE 1: OVERVIEW OF ADAPTATION MEASURES IN THE SELECTED CBA PROJECTS IN KAZAKHSTAN

CLIMATE CHANGE INDUCED RISKS	LOCATION	IMPACTS ON COMMUNITIES' LIVELIHOODS/ECOSYSTEMS	ADAPTATION MEASURES
SOIL EROSION	Arnasai Village	Destruction of crops and subsequent decrease in food production	<ul style="list-style-type: none"> • Optimal use of climate-resilient varieties of winter crops
	Zhangeldy Village	Deterioration in the quality and productivity of pastureland	<ul style="list-style-type: none"> • Introduction of high productivity and climate-resilient breeds of cattle • Introduction of rotational grazing in near-village enclosed pastures
	Shyrkyn Village	Decrease in pastoral vegetation cover and reduction in agricultural crop yields	<ul style="list-style-type: none"> • Establishment of forest belts • Introduction of remote seasonal grazing
WATER SHORTAGE	Arnasai Village	Decrease in crops yield	<ul style="list-style-type: none"> • Introduction of drip irrigation • Improvement of existing sprinklers with special irrigation machinery (water-saving nozzles)
	Zhangeldy Village	Deterioration in the quality and productivity of pastureland	<ul style="list-style-type: none"> • Introduction of high productivity and climate-resilient breeds of cattle • Introduction of rotational grazing in near-village enclosed pastures
	Shyrkyn Village	Decrease in pastoral vegetation cover and reduction in agricultural crop yields	<ul style="list-style-type: none"> • Introduction of drip irrigation
SOIL ARIDITY			<ul style="list-style-type: none"> • Establishment of forest belts

1. Variations in communities' perception of current and future vulnerabilities and their adaptive capacities

The VRA was carried out three times over the duration of the CBA projects in Kazakhstan. In general, a very consistent pattern emerges from the VRA scores obtained from community members in all the CBA projects in Kazakhstan. During the first evaluation workshops, high VRA scores revealed the high impact of current and future climate change on community members' livelihoods. In Shyrkyn Village and Zhangel'dy Village for example, VRA scores to questions 1 and 2 were respectively 4.6 and 5, and 4.5 and 4.8. However, community members' confidence about their ability to cope with climate change variability and extremes has varied among the villages. At the beginning of the CBA projects for example, reported confidence was higher in Shyrkyn Village (3.08) than in Zhangel'dy Village (1.2). This discrepancy can be explained by different socioeconomic activities and specific capacities (i.e., skills and materials) in these two communities. Overall, the mid-term evaluation showed a decrease in perceived current and future vulnerability, and an increase in the confidence of community members, referring to the tangible results achieved by projects on the ground. At the final evaluation, VRA scores that indicates vulnerability decreased for all three villages, while the values associated with confidence increased in every project. In Shyrkyn Village, where VRA scores for questions 1 (vulnerability) and 2 (risk) were respectively 3.77 and 3.38, participants confirmed that drip irrigation and forest protection belts have enabled them to adapt pasture and farm lands to growing aridity and soil erosion. Similarly, community members in this village showed a very high confidence (4.92) in the efficiency of these methods against future climate risks and their willingness to pursue the project activities after UNDP-GEF CBA funding. This increase in communities' confidence stemmed from the livelihood benefits drawn from the CBA projects.

2. Livelihoods and global environmental benefits

One characteristic of the UNDP-GEF CBA Programme is its ability to provide communities with tangible livelihood benefits, while generating global environmental benefits. Table 2 presents a snapshot of the different benefits gained by community members in Zhangel'dy and Shyrkyn Villages³. Though there is no relevant ground to compare the benefit values between projects, it shows the significant increase in communities' income due to the implementation of CBA activities in livestock and grain production subsectors. Similarly, it demonstrates that important global environmental benefits can be derived from CBA interventions.



Substituting low-productivity cattle with a resilient breed of Kazakh White-head cattle that require less fodder and produces better quality and higher quantities of meat and milk, along with the adaptive pasture management techniques in the project, lead to environmental benefits, food security and income generation.

UNDP/Stanslav Kim for the UNDP-GEF CBA project

³ Data for Arnasai Village were not available at the time this report was developed.

TABLE 2: LIVELIHOOD AND GLOBAL ENVIRONMENTAL BENEFITS IN SELECTED CBA PROJECTS IN KAZAKHSTAN

PROJECT LOCATION	INDICATORS	
	LIVELIHOOD BENEFITS	GLOBAL ENVIRONMENTAL BENEFITS
ZHANGELDY VILLAGE	30% increase in income from cattle weight gains by participating local community members	<ul style="list-style-type: none"> • 70 ha of degraded pastureland restored • 7% increase in foliage cover of near-village pastures
SHYRKYN VILLAGE	<ul style="list-style-type: none"> • 30 low-income community members provided with grant aid • 35 community members acquiring hay at preferential price (\$1768 value) in 2010 • \$6053 saved from electricity cost, water consumption, mineral fertilizers and lubricants between 2009 and 2010 • \$2347 value of agricultural products distributed to all community members from project activities in 2010 	<ul style="list-style-type: none"> • 590 ha of degraded land restored • 769 ha of land sustainably managed

ENABLING FACTORS

The UNDP-GEF CBA Programme builds on key pillars to achieve successful adaptation to climate change. These five pillars—project formulation, community ownership, influence on policy, gender mainstreaming and capacity building—affect the results of each project.

1. Project formulation

The formulation of CBA projects was not uniform throughout the three selected CBA projects in Kazakhstan. In Zhangel'dy Village, the project was initiated and exclusively driven by community members organized into an association; while in Arnasay and Shyrkyn villages, projects were not initiated by community members, but received their full support.

Project formulation process in Zhangel'dy Village

The local community in Zhangel'dy Village organized into an association of farmers known as the Zhuldyz Public Association. During meetings attended by all community farmers—including local veterinary, zoo technician and agronomist specialists—the association identified key problems, selected priority activities and contributed to development of the project proposals.

The identification of problems: The Zhuldyz Public Association identified the village's key problems to be the strong degradation of pastureland from aridity and overgrazing from low-productive cattle breeds.

The selection of priority activities: The association prioritized the introduction of high-productive breeds and rotational grazing in enclosed pastures as activities to meet the community's adaptation needs.

The development of the project proposals: On behalf of the association, community members led development of the project proposal, comprising writing, submission and follow up with UNDP-GEF CBA Programme.

Project formulation process in Arnasai village

The CBA project in Arnasai Village best illustrates the type of projects initiated by parties from outside the local community. In this case, an external project proponent, Abita Public Association, identified key problems, selected priority activities and developed the project proposals.

The identification of problems: Akbota Public Association identified the key problems in Arnasai village to be reduction in water volume in Astana Water Reservoir resulting from climate change and defections in the irrigation system compromising the irrigation of farmlands.

The selection of priority activities: After consultations with the community, the project proponent prioritized the accumulation of moisture (winter cropping), saving of irrigation water (introduction of drip irrigation), and proper arrangements of works (application of special nozzles for the near-ground irrigation).

The development of the project proposal: The project proponent developed the project proposal with the active participation of its partners, among others, Kisar Limited Partnership and Farms of Arshalyk Districts.

2. Community ownership

The UNDP-GEF CBA Programme champions community ownership within its portfolio by advocating for communities' active participation in all project steps—from formulation to implementation, to monitoring and evaluation. Table 3 presents some elements of community ownership within the selected CBA projects in Kazakhstan.



Local community members create sand protection belt around the village

UNDP/Stanslav Kim for the UNDP-GEF CBA project

TABLE 3: ELEMENTS OF COMMUNITY OWNERSHIP IN SELECTED CBA PROJECTS

PROJECT STAGE		ARNASAI VILLAGE	ZHANGELDY VILLAGE	SHYRKYN VILLAGE
FORMULATION		<ul style="list-style-type: none"> • Selection of priority activities • Development of project proposal 	<ul style="list-style-type: none"> • Identification of key problems • Selection of priority activities • Development of project proposal • Project appraisal 	<ul style="list-style-type: none"> • Selection of priority activities • Development of project proposal
IMPLEMENTATION	IN KIND	Voluntary contribution of time, labor and resources (lands, machinery) to project activities	Voluntary contribution time, labor, knowledge for the restoration of enclosed pastures	<ul style="list-style-type: none"> • Voluntary contribution of time, labor, knowledge and resources (lands) for the establishment of the forest belts and the development of the drip irrigation
	IN CASH	Co-financing with project’s partners Kaisar LLP (\$32,607), Young Farmer High School (\$1,000), and CIMMYT (\$5,600)	Co-financing with local associations (half the project total cost, \$47,960)	<ul style="list-style-type: none"> • Co-financing with the local production cooperative (half of the project total cost, \$55,215)
MONITORING AND EVALUATION		Participation in VRA evaluation processes	Participation in VRA evaluation processes	<ul style="list-style-type: none"> • Periodic community monitoring meetings • Participation in VRA evaluation process

3. Influence on policy

The ultimate goal of the UNDP-GEF CBA Programme is to influence local and national policies to facilitate dissemination, adoption and up-scaling of adaptation practices. The majority of the CBA projects in Kazakhstan have achieved important policy results in different domains. In Shyrkyn Village, the CBA project involved a large number of policy makers and resulted in the district authorities’ commitment to expand the project activities to other villages in the district. The approaches that have been tested and implemented within the three selected CBA projects in Kazakhstan, were widely discussed and presented at different national meetings and events, and the outcomes were included in the National Adaptation Concept as examples of efficient adaptation measures. Similarly, the measures implemented under the CBA project in Zhangeldy Village are recognized in the National Climate Change Adaptation Concept list of the Ministry of Environmental Protection as the country’s best adaptation practices.

4. Gender mainstreaming

Gender mainstreaming is factored into every UNDP-GEF CBA intervention to account for the specific needs of different social groups, especially the most vulnerable. Gender mainstreaming in Kazakhstan has not followed a consistent approach within the portfolio. In Arnasai Village, women have fully participated in all project activities and have even played a leading role. They have been largely represented in the community-based coordination team (composed of 60% women) tasked with the coordination of adaptation activities from inception to monitoring. In Shyrkyn Village, women’s participation has been less

pronounced. In spite of an increasing number of women getting involved as the project proceeds (from 124 participants at the beginning of the project to 186 by the end), they have been mostly confined to fieldwork such as weeding, tree maintenance, harvesting and haymaking. In addition, women have been less represented than other social groups—men (223) and schoolchildren (269)—by the end of the project. In the extreme case (Zhangeldy Village), gender mainstreaming has been hindered by social construct, as women are excluded from livestock activities. In Zhangeldy Village, women have only been involved in evaluation activities.

5. Project sustainability

Adaptation to climate change within the UNDP-GEF CBA Programme must be a continuous undertaking. Accordingly, every CBA project includes a sustainability plan. In Kazakhstan, sustainability is inherent to livelihood benefits and capacity building provided by each CBA project. Livelihood benefits generated by CBA projects have provided community members with the incentives to sustain the adaptation activities beyond the project’s funding. In Zhangeldy Village for example, sustainability results from increasing cattle production (meat production, milk yield and livestock conditions) under growing aridity. In Arnasai Village, sustainability stems from the increase in crops production resulting from more efficient irrigation systems that ensure considerable water conservation and protection of soil from degradation. In addition, capacity-building activities have provided local communities with the necessary skills to perpetuate adaptation interventions beyond the project lifetime (see Table 4 for capacity-building interventions).

6. Capacity building and awareness raising

Adaptation to climate change within the UNDP-GEF CBA Programme is fundamentally a learning process. The approach to capacity building in Kazakhstan has consisted of training workshops and on-site demonstration activities. Each project has included at least one of the interventions presented in Table 4. Awareness raising has followed a similar approach, including formal workshops and informal informational sessions with community members, and the dissemination of climate change information through electronic (radio, video) and printed (leaflets, newspapers) medias.

TABLE 4: CAPACITY BUILDING AND AWARENESS RAISING IN SELECTED CBA PROJECTS IN KAZAKHSTAN

CBA PROJECT	INTERVENTIONS		
	CAPACITY BUILDING		AWARENESS RAISING
	THEORETICAL	PRACTICAL	
ARNASAI VILLAGE	Distribution of methodological manuals on winter cropping and drip irrigation technology	Winter cropping field demonstrations to farmers and schoolchildren Site-visits of the project executors and Participatory Video demonstrations at the seminars	
ZHANGELDY VILLAGE		Field training on climate-resilient cattle breeding and efficient grazing technology	Distribution of leaflets with information about climate change risks
SHYRKYN VILLAGE	Organization of workshops on water-saving methods and technologies	Field demonstration of economic efficiency of the methods and techniques implemented by the project Site-visits of the project executors and Participatory Video demonstrations at the seminars	Organization of workshops on climate change risks

CHALLENGES

The UNDP-GEF CBA Programme is a cross-sectoral programme operating within multi-cultural environments and involving a variety of stakeholders. These characteristics have exposed every CBA project to a certain number of challenges. The CBA Programme in Kazakhstan has faced technical, financial, institutional and socio-cultural obstacles. Table 5 provides an overview of the challenges encountered and the solutions provided in the selected CBA projects in Kazakhstan.

TABLE 5: OVERVIEW OF THE CHALLENGES AND COPING STRATEGIES IN SELECTED CBA PROJECTS IN KAZAKHSTAN

CHALLENGE		COPING STRATEGIES		
		ARNASAI VILLAGE	ZHANGELDY VILLAGE	SHYRKYN VILLAGE
INSTITUTIONAL	Misunderstanding by the local authorities	Involvement of local authorities in project development, reviews, training workshops and field demonstrations	Awareness raising of local authorities on climate change risks, project goals, and the advantages the replacement of low-productivity cattle and rational grazing	
	Lack of coordination of activities between suppliers of resources (electricity and water) and consumers			Organization of procurement planning meetings between suppliers and consumers
SOCIO-CULTURAL	Mistrust of people	Organization of workshops and other outreach activities to explain and demonstrate the advantages of drip irrigation in the village		
TECHNICAL	Methodological constraints in winter crops cultivation	Consultations of international experts in winter cropping		
FINANCIAL	Price appreciation of materials			Extra support by the project proponent
	Fluctuation of exchange rate	Incurred by the projects		

DISSEMINATION AND REPLICATION

An underlying principle under the UNDP-GEF CBA Programme is to generate lessons and best practices for dissemination, up-scaling and replication elsewhere. In Kazakhstan, dissemination strategies have employed three main approaches: (1) field demonstration of technologies and methods, (2) production and distribution of printed and electronic media, and (3) organization of workshops. In Arnasai Village, these three strategies specifically have targeted farmers, village inhabitants, and schoolchildren around the district areas. The same strategies have also been used in Shyrkyn Village, but have also targeted administrative and traditional authorities and NGOs in the nearby village. The project in ZhangelDY Village has used field demonstration and printed media, and has reached out to residents and traditional authorities in the nearby villages.

TABLE 6: DISSEMINATION STRATEGIES USED IN SELECTED CBA PROJECTS IN KAZAKHSTAN

STRATEGY		ARNASAI VILLAGE	ZHANGELDY VILLAGE	SHYRKYN VILLAGE
FIELD DEMONSTRATION		Organization of field demonstration of drip irrigation and winter cropping		Organization of demonstrational training on water saving and sustainable land management
MEDIA	PRINTED	Distribution of manuals about agronomic and technical features of winter cropping and drip irrigation technology Journalists visits to the project sites and regular interviews were used as media tools to create awareness	Publication and distribution of a booklet about project best practices	Production and distribution of a booklet and brochures on climate change adaptation methods that achieved results in the project Journalists visits to the project sites and regular interviews were used as media tools to create awareness
	ELECTRONIC	Production, projection and distribution of a film about best practices		Regular presentation of project-related information in mass media (TV and radio)
WORKSHOP		Organization of workshops for the presentation of project results and training of trainers		Regular presentation of project-related informational meetings and UNDP-supported workshops on climate change adaptation

Institutional and financial leverages

Institutional and financial leverages are promoted and encouraged within the UNDP-GEF CBA Programme as a means to establish and foster partnership with local, national and international institutions, and to explore and secure matching funding. In Kazakhstan, many CBA projects have leveraged a variety of institutional and financial supports from communities. Table 7 provides a snapshot of the results obtained in the selected CBA projects.

TABLE 7: INSTITUTIONAL AND FINANCIAL LEVERAGES IN SELECTED CBA PROJECTS IN KAZAKHSTAN

TYPE OF LEVERAGE	ARNASAI VILLAGE	ZHANGELDY VILLAGE	SHYRKYN VILLAGE
INSTITUTIONAL LEVERAGE	<ul style="list-style-type: none"> • Kaisar LLP, a rural cooperative, allotted a land parcel of 100ha for winter cropping tests; • The Young Farmer School provided the venue for testing the drip irrigation system for comparison with the existing irrigation system in order to show its advantages; • 12 NGOs trained in drip irrigation by the project are willing to replicate the training in neighboring villages. • Due to excellent results demonstrated, additional in-cash co-financing of \$100,000 from Coca-Cola was received for replicating the drip irrigation approaches in additional 5 villages 		<ul style="list-style-type: none"> • The districts authorities are interested in expanding the project experiences to other villages in the district; • The project proponent established a new NGO to expand activities in the South Kazakhstan oblast.
FINANCIAL LEVERAGE	Kaisar LLP provided significant co-financing, about half of the project total cost (\$32,607).	Local businesses and members of the local community provided a significant level of co-financing.	The akimat allocated money for the major repair of the channel running via Shyrkyn Village.

LESSONS LEARNED

Several lessons can be drawn from the implementation of the UNDP-GEF CBA Programme in Kazakhstan:

1. Climate change adaptation and poverty alleviation are compatible and interdependent.

The implementation of the UNDP-GEF CBA Programme in Kazakhstan illustrates a strong compatibility between adaptation and poverty alleviation activities. Project outcomes demonstrate that improvement in the livelihoods of local communities can be achieved, even in conditions of growing aridity with the adoption of climate-resilient practices.

2. Accessibility to micro-finance is essential to start up adaptation activities and to guarantee their replication.

The UNDP-GEF CBA Programme’s experience shows that internal factors such as the lack of fast-start capital can significantly impede the adoption of adaptation measures. In Shyrkyn Village for example, the local community shows a high confidence in their capability and willingness to adopt climate-resilient practices, but falls short in start-up capital. Adaptation activities only started with CBA financial support.

3. Maintenance of infrastructure needs to be factored in the post-donor-funding.

Adaptation measures in Kazakhstan usually draw upon hard technologies such as the reconstruction of canals and/or irrigation systems (Arnasai Village and Shyrkyn Village). The effective use of such technologies requires continue maintenance and renovation for durability. This speaks for the need of a sustainable financial mechanism that adaptation funding needs to provide.

4. Community buy-in stems from tangible results.

It emerges from the CBA portfolio in Kazakhstan that community buy-in of adaptation measures only stems from tangible results. At the onset of every CBA project, the local community expressed doubt about their capability to implement project activities. In Shyrkyn Village where drip irrigation was needed for example, Kazakhstan is running a credit program to implement this type of infrastructure. However, small farmers have not wanted to risk this investment. The project has provided a good platform to demonstrate drip irrigation technology and its advantages. Owing to the serious work accomplished and the outstanding results obtained, their perception changed significantly by the end of the project.

5. Procurement planning with due consideration to inflation rate is essential for timely implementation of projects.

Some CBA projects have faced setbacks from inappropriate procurement procedures and the non consideration of inflation rate during project planning. In Shyrkyn Village specifically, the drip irrigation component of the project faced important delays in equipment supplies, and some other special materials were unavailable during the implementation. The project was also confronted by important price appreciation of materials such as lubricants and fertilizers, which constrained the executing parties to support the extra-cost. In the future, such factors should be taken into considerations early in project planning.

6. Clear definition of roles and responsibilities and strong institutional capacity are fundamental in the context of climate change adaptation.

The CBA experience highlights the fact that strong institutional capacity is essential for adaptation to climate change. In Kazakhstan, the Ministry of Agriculture has no unit or department for pastoral management, and the law on land use has no adequate provisions on pastures. Pastoral management is thus under the competence of the local executive authorities who have neither professional staff, nor the financing to monitor pasture conditions, control their use and organize the infrastructure of seasonal pastures. All these weaknesses have contributed to the accentuation of land degradation in Kazakhstan. While the UNDP-GEF CBA Programme has sought to remedy some of these shortcomings, a more comprehensive approach is yet to be promoted. Equally important is a clear definition of roles and responsibilities between different institutions involved in adaptation activities. Though no CBA project faced this issue in Kazakhstan, failure to consider it can significantly undermine the effectiveness of the community initiative.

From the the UNDP-GEF SPA CBA projects as well other GEF SGP regular initiatives, and from experiences coming from the partnership with UNDP as well as other organizations implementing pastures rehabilitation approaches in the country, good materials for national policies preparations were provided. Currently, the Ministry of Agriculture is developing a National Programme for the development of remotely located pastures in the Kazakhstan.



Filling the tank with water for drip irrigation, a transfer technology intervention for efficient use of water in the context of increasing aridity and lack of water resources in Kazakhstan.

UNDP/ UNDP-GEF CBA Kazakhstan (Shyrkyn project)

CONCLUSION

The analysis of the UNDP-GEF CBA portfolio in Kazakhstan shows that the CBA Programme has been very effective in reducing the vulnerability of communities and their ecosystems to increasing aridity, and in building their adaptive capacity. This is reflected in both the communities' perception of change and the tangible livelihood and global environmental benefits generated from the CBA projects. The outstanding results have stemmed from the comprehensive and integrated approach taken by each CBA project, championing community ownership, promoting innovative adaptation technologies and factoring sustainability into project design. While projects have faced inevitable challenges during their implementation, these obstacles suggest valuable lessons to inform future adaptation interventions elsewhere. This shows the need for the UNDP-GEF CBA team to develop an effective strategy to ensure worldwide dissemination and adoption of the experiences generated from the CBA projects. This ultimate activity will show, more than any other, the success of the UNDP-GEF CBA Programme

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