



WATER-ENERGY-LAND USE LINKAGES

Nexus solutions for
a climate resilient Central Asia

Financing Strategy for Kazakhstan's National Adaptation Plan (NAP)

Furkan Kavuncu.

OECD Environment Directorate
Water, Energy, Land-use Nexus in Central Asia

EBRD/OECD Workshop Green Investments: Agrifood and Climate Resilience in
Central Asia
21 October 2026

Supported by:



based on a decision of
the German Bundestag





Questions for you

- If you wanted to invest in making your business more climate resilient tomorrow, what would be your biggest barrier?
- What is the one thing the government could do to make it easier for your business to invest in climate resilience?



Climate risks for agrifood



FISCAL RISK

1.2%

Expected average annual losses from droughts and floods, rising to 2.2% of GDP under a moderate climate scenario

Source: World Bank, 2023



WHEAT YIELDS

33%

Potential loss of economic gains from wheat yields by 2030 due to drought, in the absence of adaptation

Source: ERI JCS, 2025



WATER LOSSES

40 to 50%

Water losses reported in Kazakhstan's water sector, particularly in ageing irrigation and conveyance infrastructure

Source: Kazakhstan NAP, forthcoming



LAND DEGRADATION

70 to 76%

of Kazakhstan's total territory is subject to or susceptible to varying degrees of desertification and land degradation

Source: BIOFIN, 2025

Implication for business:

Intensifying and more often climate shocks



Lower and more volatile farm revenues



Risk to processors, traders, lenders and insurers through reduced supply, weaker loan repayment and higher claims



National Adaptation Plan of Kazakhstan, 2026 to 2030



What is the NAP?

- A policy document: National Climate Change Adaptation Plan 2026 to 2030
- Goal: resilience of natural, economic and infrastructure systems to climate impacts
- 113 measures in four sectors: water, agriculture, forestry and ecosystems, disaster risk reduction
- Public finance is the backbone, complemented by international climate finance and private finance

Four priority sectors of the NAP



Water resources



Forestry and ecosystems



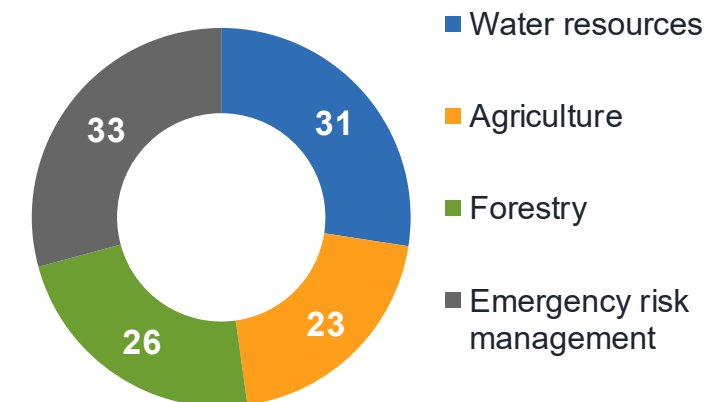
Agriculture



Emergency risk management

Large share of measures focus on the agriculture and water sectors

Fig. Number of NAP measures by sector





What does the NAP mean for agrifood?

Sector	Sub-sector	NAP measure (some examples)	Potential impact on businesses
 Water and irrigation	On-farm irrigation	Higher subsidies for drip and sprinkler irrigation, rising from KZT 58.5 bn in 2026 to KZT 120 bn a year in 2029 and 2030	Higher demand for irrigation equipment; lower investment costs for farmers. Who: Equipment suppliers and installers, agro-dealers, leasing firms, banks, irrigated farms
		Mandatory water-saving technologies as irrigated area expands	Irrigators must invest in compliant technology: gains for suppliers, costs for farms unable to finance upgrades. Who: Irrigated farms, equipment and service providers
	Metering and digitalisation	Digital water metering from intake to end user, automated canal accounting and remote sensing of irrigated land	Expands demand for meters, sensors and digital services, while increasing accountability for water use. Who: Meter and sensor suppliers, digital service firms, irrigators
 Crops	Water-intensive production	Reduction of water-intensive crops, including rice and cotton, with recommendations for alternatives	Lower rice and cotton output could affect growers and processors, while opening opportunities for replacement crops. Who: Rice and cotton growers, mills, ginneries, alternative crops



How can we finance the national adaptation measures in Kazakhstan?

Who pays for what?

Public finance



Public budget leads

Early warning, flood and mudflow protection, monitoring and soil surveys, forests and ecosystems

International development finance



Co-financed, with user charges (budget + tariffs)

Regulated water services, shared irrigation

Private finance



Private, with public support

On-farm adaptation investment and purchase of insurance for residual risk

The core logic: The private sector should not be expected to finance public goods.

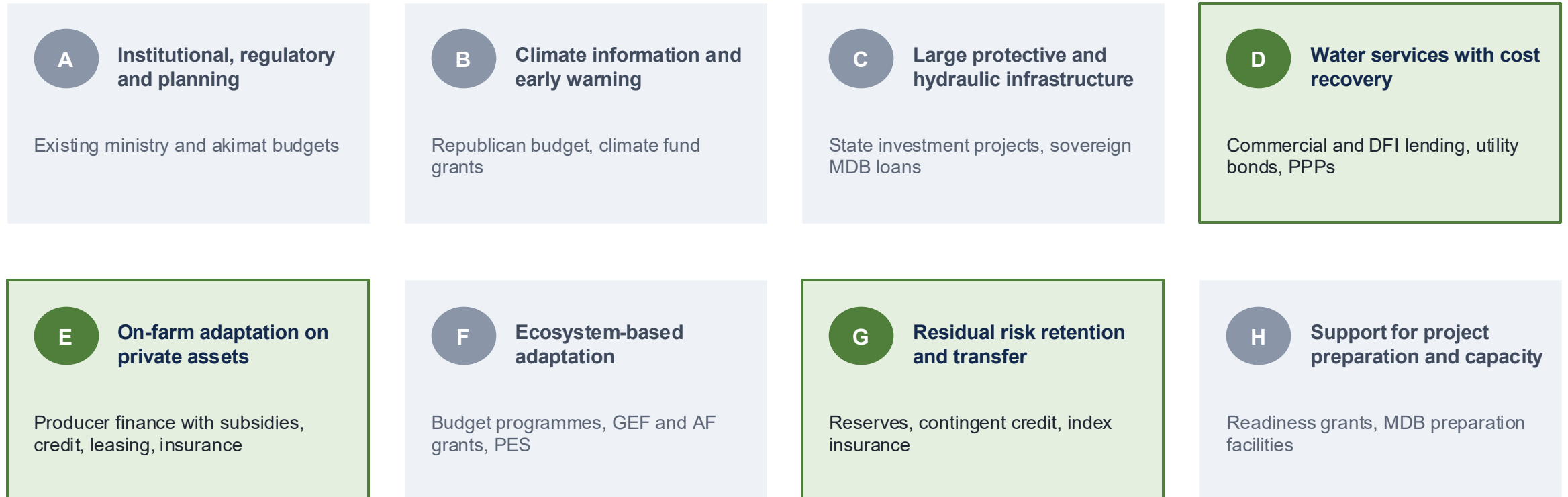
The private sector has a crucial role in climate resilient investments:

- Invest in its own resilience to cut crop & livestock losses from drought and water shortages
- Use and shape financial solutions existing in the market
- Developing bankable projects



Where can the private sector play an effective role in climate adaptation?

The NAP financing strategy categorises 113 NAP measures into 8 groups based on their economic characteristics



 Where private and commercial finance could be provided at scale



Entry point 1: On-farm adaptation



What the NAP prioritises

- Water-saving and drip irrigation
- Drought-resistant varieties and seed production
- No-till equipment and soil-moisture conservation
- Shelterbelts on arable land
- Pasture management, corral grazing with electric fencing



How it is financed today

- Reimbursement of up to 80% of eligible costs for water-saving irrigation and pasture watering
- Credit, leasing and guarantees via ACC, KazAgroFinance and Damu
- Green credit lines and sustainability-linked lending via DBK
- Index insurance with premium support



What is likely to change

- Support linked to measurable adaptation outcomes rather than new programmes
- Irrigated south: metering, water-use entitlements and basin water balances as eligibility conditions
- Rain-fed north: priority to drought-resilient varieties, diversification and Kazhydromet agroclimatic data



Entry point 2: match the financing model to who owns and benefits

Assets & measures	Main beneficiary	Suggested financing model
Individual farm measures: furrowing, snow retention, small water harvesting	Single producer	Producer finance, agricultural credit, existing investment subsidies
Shared irrigation and drainage	Group of landholders	Member fees of irrigation condominiums under the 2025 Water Code
Other shared assets: pasture, water storage	Co-operative members	Beneficiary contributions with akimat support and ACC or KazAgroFinance
Inter-farm canals, reservoirs, flood protections or similar infrastructure	Wider public	Public investment, potentially with MDB finance, PPP only if there is a reliable payment source, such as tariffs or service payments from the state



Where water revenues or savings exist

- Tariff in Exchange for Investment lets regulators recover loan service in approved tariffs: about KZT 99.3 billion (USD 206 million) invested in 2023 and 2024.
- Operator-level lending is possible: Vodnye Resursy Marketing in Shymkent borrowed directly from the EBRD without the state as borrower.
- Industrial water reuse and efficiency can rely on corporate balance sheets, DBK, second-tier banks or leasing.

Precondition: Metering and loss reduction come before repayable finance. Revenues are only as reliable as the water that reaches a billable point.



Entry point 3: agricultural insurance has a platform but low coverage

Example: oilseed crops

1.6%

of total sown area insured against drought in 2025

378 000 ha

grain and oilseed crops under 268 contracts

KZT 456.4 m

payouts on 80 400 affected hectares

80%

of eligible premiums subsidised by the state

Sources: ACC (2025)

Layered logic

1

Reduce physical risk first

varieties, soil moisture, pasture maintenance

2

Transfer residual risk

index-based insurance with private insurers and reinsurers

3

Publicly back the catastrophic layer

what markets cannot efficiently absorb

Directions for consideration

- Recalibrate indices with Kazhydromet AgroData, satellite data, historical yields and claims to reduce basis risk
- Targeted pilots for rain-fed cereals and livestock in high-risk regions, building on soil-moisture index products in place since 2018
- Assess the 80% premium subsidy for effectiveness and fiscal sustainability; test rewarding verified risk reduction
- Comparators: TARSİM in Türkiye; index-based livestock insurance in Mongolia



Entry point 4: Thematic debt (green, social, sustainability bonds) and equity

USD 2.5 bn

sustainable debt market in Kazakhstan by end 2025; adaptation share hard to identify

Building blocks in place

- Environmental Code Article 130 classifies adaptation projects as green projects; a national green taxonomy exists
- Sovereign green bond rules adopted in July 2025, with no sovereign issuance yet; DAMU issued the first green bond in 2020
- Draft National Blue Bond Issuance Guidelines (AIFC, UNEP) to inform a future Blue Taxonomy

19%

of global GSSS bonds issued in 2022 had some proceeds linked to adaptation and resilience

Bond: Pathway proposed for a first water blue bond with adaptation use of proceeds

2027

Eligible NAP water portfolio and issuer shortlist



2028 to 2029

Pilot transaction structured with issuer and verification



2030

Issuance, allocation and impact reporting

Equity: a targeted role for smart irrigation and water efficiency, climate-smart inputs and digital climate risk tools. AIX Green Equity Principles provide a basis, but no adaptation equity market exists at scale yet.



WATER-ENERGY-LAND USE LINKAGES

Nexus solutions for
a climate resilient Central Asia

THANK YOU

Furkan Kavuncu, furkan.kavuncu@oecd.org

Takayoshi Kato, takayoshi.kato@oecd.org

OECD Environment Directorate
Water, Energy, Land-use Nexus in Central Asia

EBRD/OECD Workshop Green Investments: Agrifood and
Climate Resilience in Central Asia
21 October 2026

Supported by:



based on a decision of
the German Bundestag

