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COP28
UAE

Climate-Food-Nature Nexus Series

Enhancing Resilience of Food Systems in Dryland Areas by
Increasing Natural Capital and Climate Finance

10 December
2023 (Sunday) •
11:00 a.m.–
12:30 p.m.
(GMT+4)
ADB Pavilion,
Expo City
Dubai, United
Arab Emirates

The Role of MDBs in Addressing Climate-Food-Nature Nexus

Qingfeng Zhang, Senior Sector Director
Agriculture, Food, Nature, and Rural Development Sector Office, Sector
Group, Asian Development Bank



Agenda



Why investments in climate-food-nature nexus matters?



ADB's approach to climate-food-nature nexus



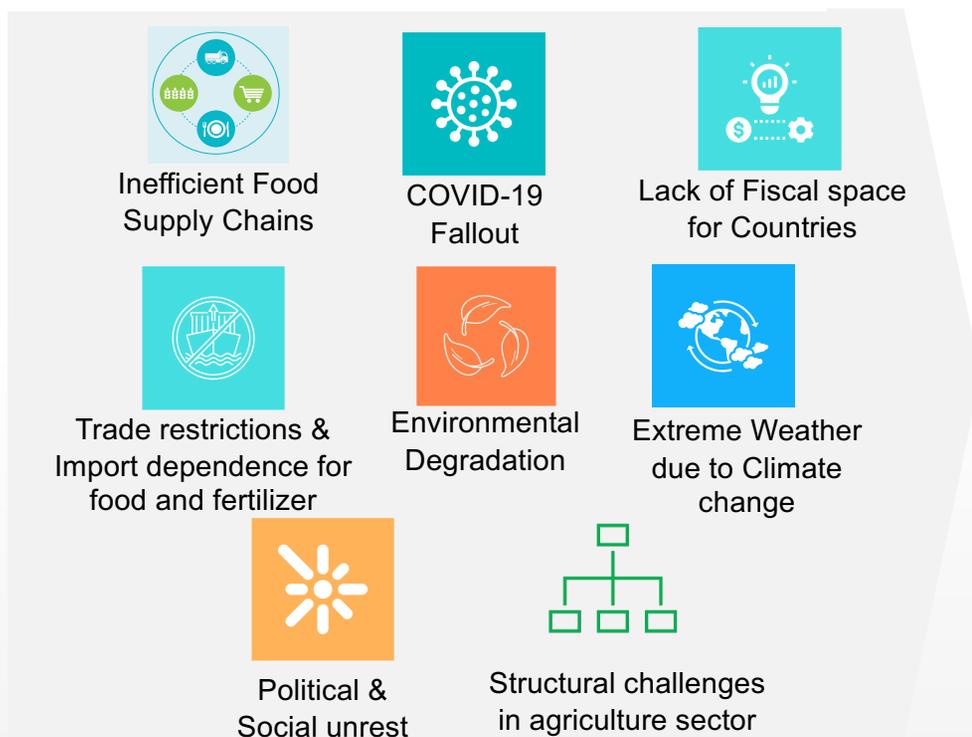
Way forward



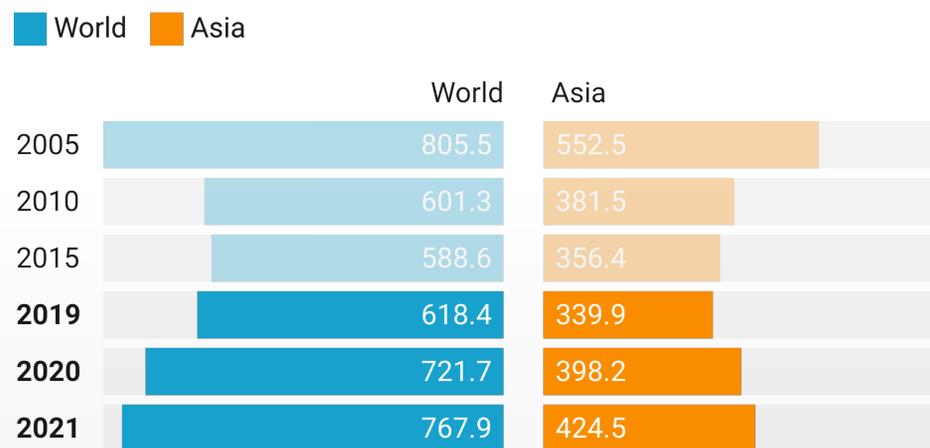
Case Studies

Food insecurity continues to increase across the world and Asia-Pacific in particular, reversing many years of progress

Causes



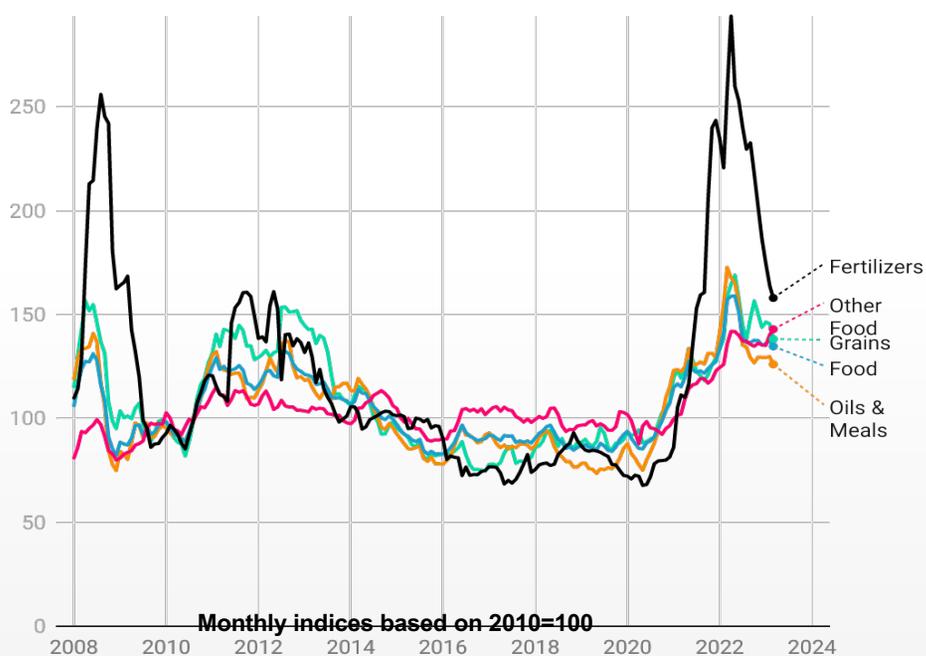
Number of undernourished (millions)



¹ FAO. 2022. The State of Food Security and Nutrition in the World 2022

Domestic food prices still at very high levels, compared to pre-COVID levels, despite fall in international prices

International prices of food and fertilizers

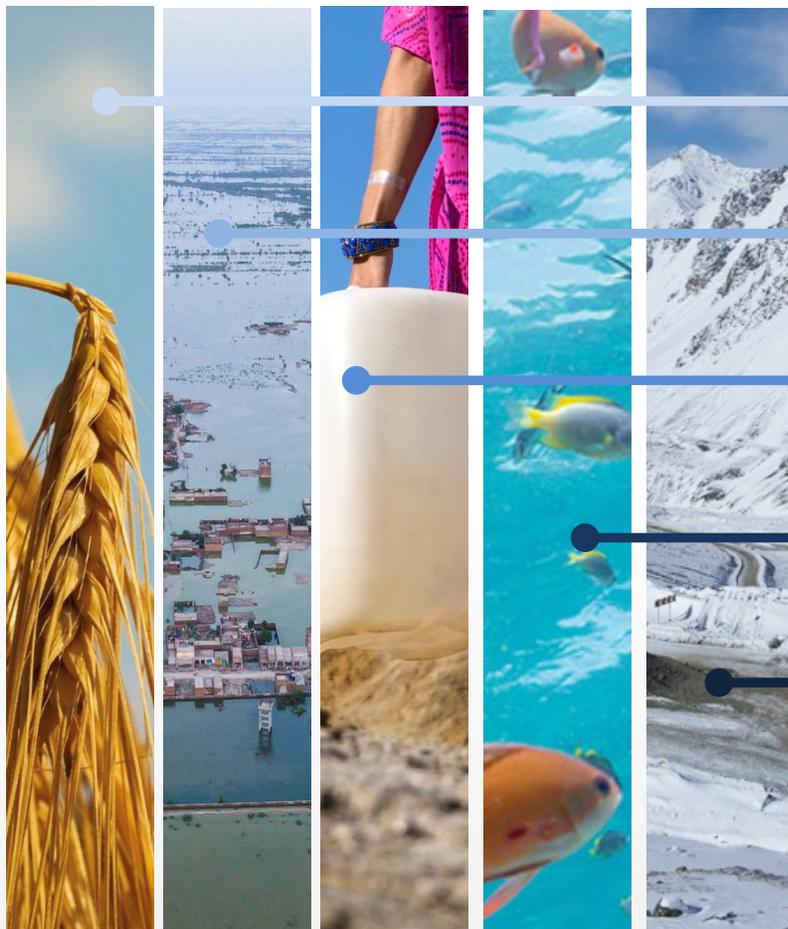


Trends in domestic food price Inflation (% YoY)

		2022												2023					
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
DMC																			
Central and West Asia	Afghanistan	20.0	21.9	21.5	23.8	23.2	26.0	24.9	23.2	17.6	12.3	10.8	5.2	3.2					
	Armenia	12.2	11.4	12.8	14.3	14.5	17.1	13.5	12.6	13.7	12.5	11.1	10.0	9.4	9.8	5.1	1.2	-2.1	-5.5
	Azerbaijan	17.1	17.2	17.0	17.4	17.9	18.4	18.7	18.9	19.3	19.4	19.5	19.5	17.5	17.3	17.1	16.6	15.8	
	Georgia	16.2	17.3	17.8	21.3	22.0	21.8	16.4	15.8	17.6	15.8	16.8	16.3	15.0	14.0	11.8	5.9	3.3	
	Kazakhstan	9.9	2.3	15.6	18.1	19.2	14.5	19.9	21.0	22.4	23.3	24.4	25.6	26.0	26.2	20.5	17.9	16.5	
	Kyrgyz Rep	12.5	12.1	15.8	17.9	17.1	14.8	16.0	18.9	18.7	17.2	17.2	15.8	16.8	18.3	12.7	8.9	8.4	
	Pakistan	12.8	14.7	15.3	17.0	17.3	25.9	28.8	29.5	31.7	36.2	31.2	35.5	42.9	45.1	47.2	48.1	48.7	39.5
Tajikistan	6.8	6.4	7.2	7.5	7.5	9.6	9.7	8.0	7.9	6.1	5.7	5.2	5.3	5.5	4.3	3.7	1.3		
East Asia	PRC	-3.8	-3.9	-1.5	1.9	2.3	2.9	6.3	6.1	8.8	7.0	3.7	4.8	6.2	2.6	2.4	0.4	1.0	
	Korea, Republic of	5.5	3.6	3.3	4.6	6.0	6.5	8.0	8.0	7.8	7.5	4.8	5.2	5.8	5.8	6.4	5.0	3.9	
	Mongolia	21.3	18.0	18.0	16.8	18.0	19.5	21.5	18.6	17.1	16.4	16.8	15.4	14.0	16.2	17.3	17.0		
South Asia	Fiji	5.2	3.3	8.0	7.1	3.6	3.3	4.7	6.9	6.0	9.1	9.6	7.1	7.0	3.2	5.3	4.8	8.1	
	Papua New Guinea			6.2			5.1		8.1										
	Solomon Islands	4.6	3.2	2.5	7.5	11.6					12.0	11.9	12.2	12.6	14.6	15.7			
South Asia	Bangladesh	5.6	6.2	6.3	6.2	8.3	8.4	8.2	9.9	9.1	8.5	8.1	7.9	7.8	8.1	9.1	8.8	9.2	9.7
	Bhutan	5.3	4.1	4.0	3.7	3.5	5.1	5.8	5.2	4.2	2.9	2.3	1.5	1.5	1.9	0.8	1.8	3.2	
	India	5.4	5.9	7.7	8.4	7.8	7.8	6.8	7.6	8.6	7.0	4.7	4.2	5.9	6.0	4.8	3.8	2.9	
	Maldives	1.9	1.7	2.9	3.7	4.7	5.2	6.0	6.2	6.6	5.9	5.7	6.6	7.8	7.6	8.0			
	Nepal	4.9	6.0	7.1	7.4	7.1	7.4	6.9	7.1	8.2	8.1	7.4	5.9	5.6	6.2	5.6	6.9	5.5	
	Sri Lanka	25.0	25.7	30.2	46.6	57.4	80.1	90.9	93.7	94.9	85.6	73.7	64.4	60.1	54.4	47.6	30.6	21.5	4.1
	Southeast Asia	Brunei Darussalam	2.5	2.6	3.4	4.7	5.4	5.8	6.8	7.0	6.7	6.1	5.8	5.1	4.8	4.5	3.9	2.8	
Cambodia		3.6	5.9	5.7	6.2	5.5	6.5	5.0	4.3	4.6	4.3	4.1	3.8	3.7	3.1	2.4	2.3		
Indonesia		3.5	2.5	3.6	5.2	5.6	6.2	9.4	7.7	7.9	6.8	5.9	5.8	5.8	7.2	6.1	4.6	4.3	2.8
Lao People's Democratic Republic		4.2	5.5	6.1	5.7	8.2		21.6	30.2	35.5	38.8	42.3	45.3	47.1	49.3	51.0	52.2	52.7	42.7
Malaysia		3.6	3.7	4.0	4.1	5.2	6.1	6.9	7.2	6.8	7.1	7.3	6.8	6.7	7.0	6.9	6.3	5.9	
Myanmar		12.8	12.4	15.4	15.8	16.1	17.1	18.4											
Philippines		1.7	1.2	2.6	3.8	4.9	6.0	6.9	6.3	7.4	9.4	10.0	10.2	10.7	10.8	9.3	7.9	7.4	6.7
Singapore		2.6	2.3	3.3	4.1	4.5	5.4	6.1	6.4	6.9	7.1	7.3	7.5	8.1	8.1	7.7	7.1	6.8	
Thailand		2.4	4.5	4.6	4.8	6.2	6.4	8.0	9.4	9.8	9.6	8.4	8.9	7.7	5.7	5.2	4.5	4.0	3.4
Timor-Leste		6.4	6.8	7.0	7.3	8.0	8.6	8.5	8.3	8.2	7.6	7.2			10.2	10.9			
Viet Nam		3.1	1.7	1.8	2.1	2.4	2.9	2.8	2.3	2.1	2.4	2.8	2.9	3.7	3.6	3.8	3.8	3.9	3.8



Climate change remains a dominant driver of food insecurity



Heatwaves in South Asia in the last few years has led to severe disruption to food production

Untimely floods, such as in Pakistan, and storms in Southeast Asia has led to severe damages

Continued drought in Central Asia, high costs of agricultural inputs and limited access to irrigation water, resulting in a below-average harvests.

Ocean warming and acidification. Ocean absorbs around 25% of the annual emissions of anthropogenic CO₂ to the atmosphere

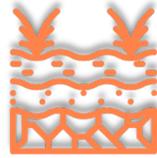
Glaciers in high mountains of Asia (the 'third pole') causing glacial lake outbursts and eventual loss of river systems

Natural capital in the region demands increased attention



Poor Water Management

Inefficient water use, especially for irrigation, results in withdrawals exceeding sustainable levels,



Land degradation and desertification

Unsustainable farming, land, and livestock management practices and loss of forest and vegetation cover



Saltwater intrusion and increased Salinization

Sea level rise and storm surges, land subsidence in coastal zones; saline soils that reduce crop yields.



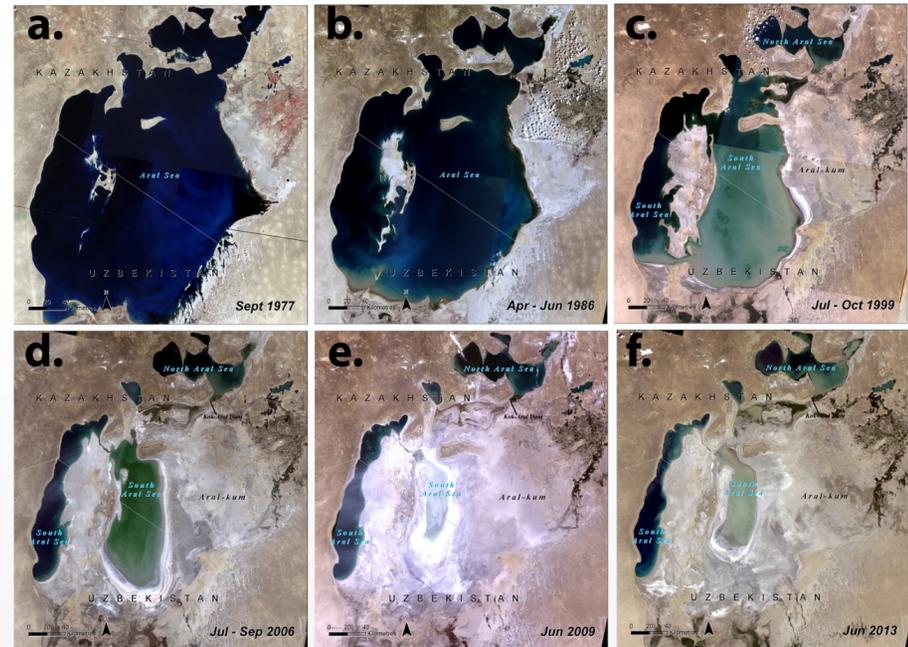
Pollution and resources depletion

Excessive use of fertilizers and other chemicals, contribute to resource depletion and environmental degradation, pollution and GHG emissions.



Biodiversity Loss

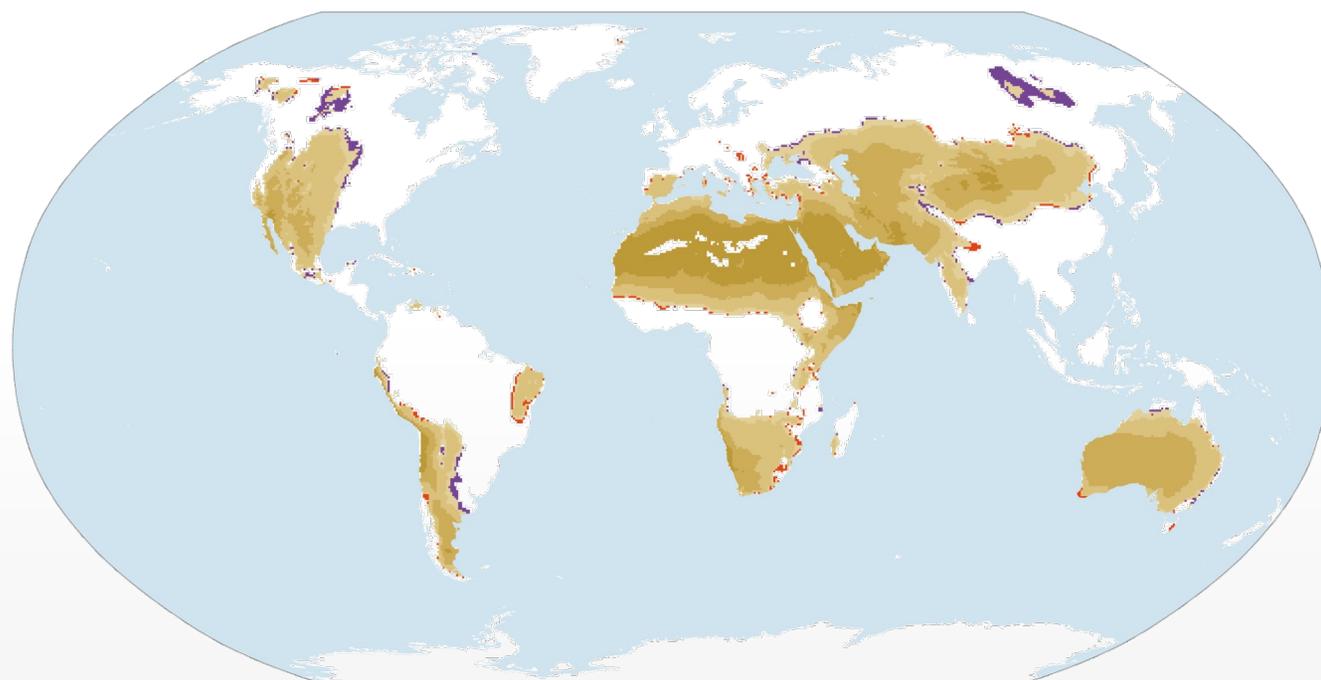
Biodiversity degradation due to expanding cropland and over-utilization of resources, which in turn affects both agriculture productivity and the environment.



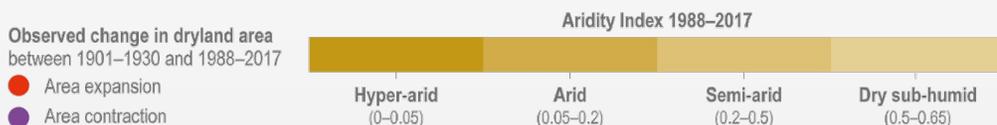
Source: NASA earth observatory, accessed 2023

Climate-food-nature nexus needs to be addressed in arid economies of Asia and the Pacific

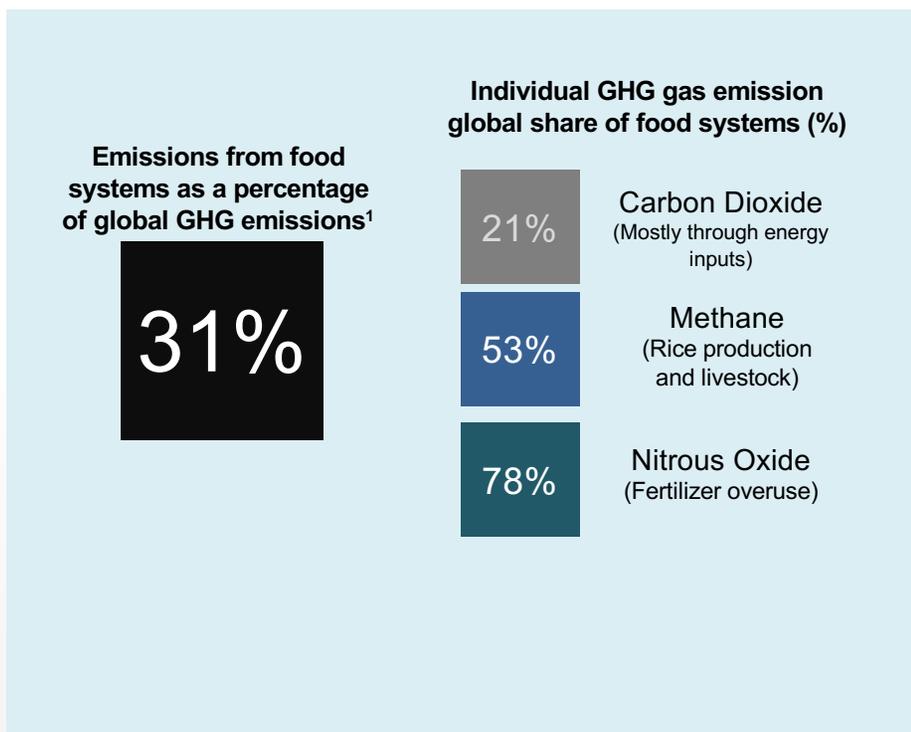
Aridity zone extent and observed changes in dryland areas as defined by the Aridity Index



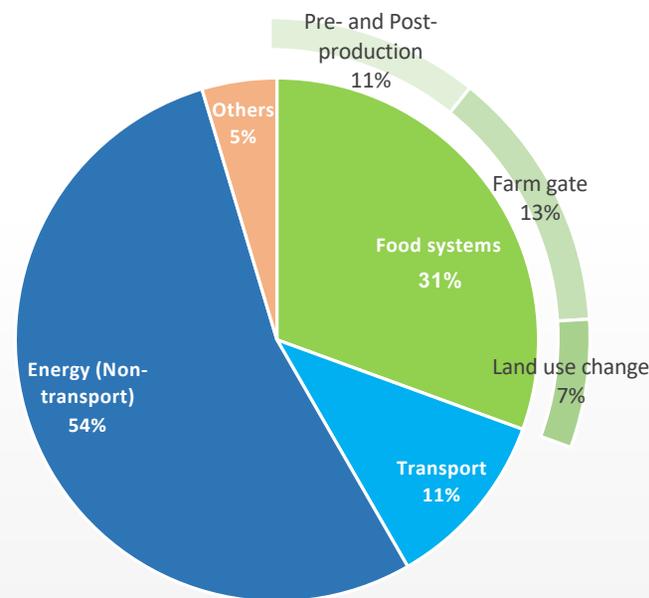
- Arid/ semi-arid/ hyper arid regions in Asia and the Pacific will continue to face agriculture productivity challenges in the near-future
- Regions prone to desertification/ arid conditions in the future (such as south Asia) is home to significant number of the world's undernourished.



Food systems contribute a quarter of global GHG emissions leading to climate change

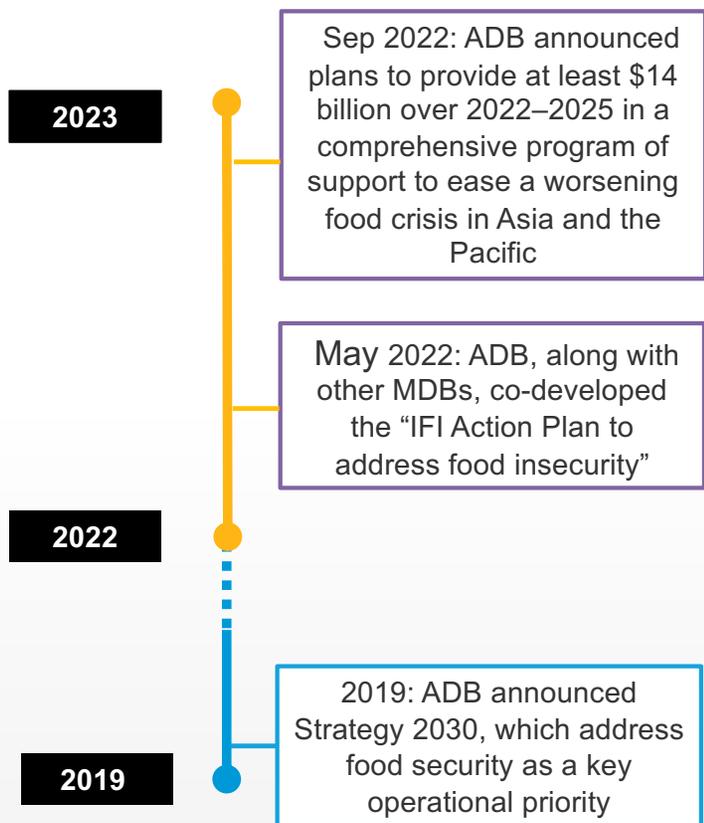


Emissions from food systems compared to other sectors



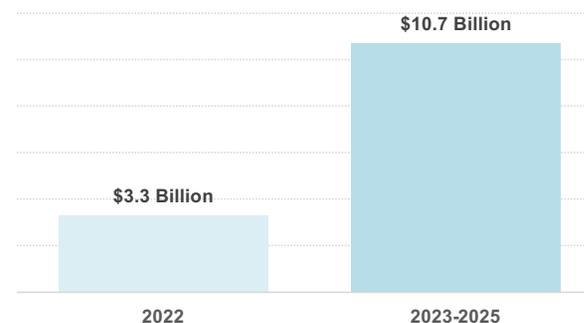
¹FAO. 2021. The share of agri-food systems in total greenhouse gas emissions Global, regional and country trends, 1990–2019

ADB Ambition for Food Security



ADB's ambition for food security 2022-2025

- In September 2022, ADB announced plans to provide **\$14 billion over 2022-2025** to address food insecurity
- Addressing climate-smart agriculture and the broader issue of climate change- food- nature nexus is a major priority
- Nearly half of all targeted investments are targeting climate-smart agriculture and broader climate adaptation and mitigation goals



ADB has identified key pathways to achieve the \$14 billion ambition..

..and investing in **Climate-Food-Nature Nexus** is the most important



Adapted from: Food and Land Coalition

Innovative Natural Capital Financing Facility (INCF)

- Natural capital (natural assets like land, forests, water, minerals, biodiversity and living things) accounts for over half of global GDP,
- 40% of the natural capital has eroded over the past 20 years with food systems as the primary driver.
- Asian Development Bank (ADB) recognizes the need for technical, financial, and institutional solutions to address these challenges.
- Investment in nature positive solutions is needed to scale solutions that preserve and promote natural capital and create climate-resilient food systems.

INCF is a catalytic green blended finance facility designed to support projects with natural capital components in Asia and the Pacific. It has three main pillars.



Natural Capital Fund

Co-finances projects with ADB and other partners, secured primarily against streams of future incremental income and eco-compensation rewards.



Natural Capital Lab

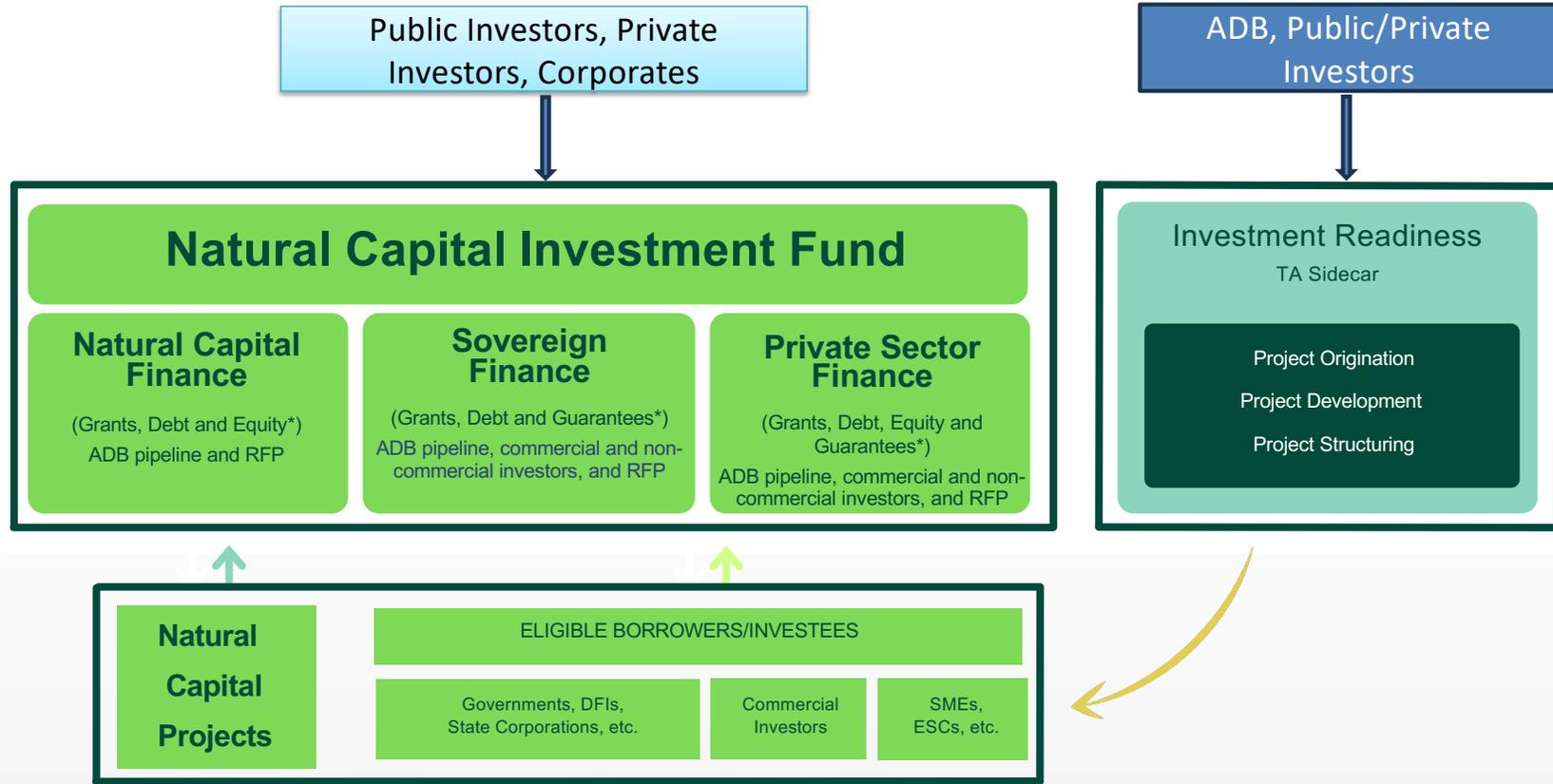
Promotes accounting and valuation methodologies, disseminates knowledge and best practices, designs eco-compensation schemes, and provides training.



Agribusiness Services Platform (ASP)

Digitalizes supply chains to assist project sponsors to improve value creation in financial management, marketing, procurement, and logistics efforts.

Natural Capital Fund



PRC-GEF Partnership to Combat Land Degradation

Overview

- World's first initiative to combat land degradation through a holistic approach, integrated ecosystem management (IEM)
- A 10-year Country Program Framework (CPF, 2002-2012) to address root causes of land degradation in the western region of the PRC
- ADB led the CPF development and coordinated donors' participation

Key Achievements

- IEM mainstreamed (including legal, regulatory, and policy framework) for each of 8 participating provinces
- Best practices documented and published Legal and Policy Framework for Dryland Ecosystem Management in the Western PRC published by IUCN



Case for Investments

- **Demonstration and scaling up of IEM:** sustainable land management, conservation agriculture (CA) water-saving irrigation, ecosystem protection and rehabilitation, sustainable rural livelihoods
- **Direct impacts:** water saving 60%; chemical fertilizer use reduced by 69.5%; GHG emissions reductions 10.5 tCO₂/ha per year; CA expanded from 530 ha in 2008 to 36,350 ha in 2016; wildlife conservation increased from 62,210 ha to 193,536 ha
- **Natural capital assessment** of two project sites using Toolkit for Ecosystem Service Site-Based Assessment (TESSA): CNY3.2 million to CNY4.2 million per ha

Possible Replications

- **Central Asian Countries Initiative for Land Management:** a partnership of Central Asian countries and development cooperation partners initiated and coordinated by ADB (UNCCD, GEF, IFAD, UNDP etc.)

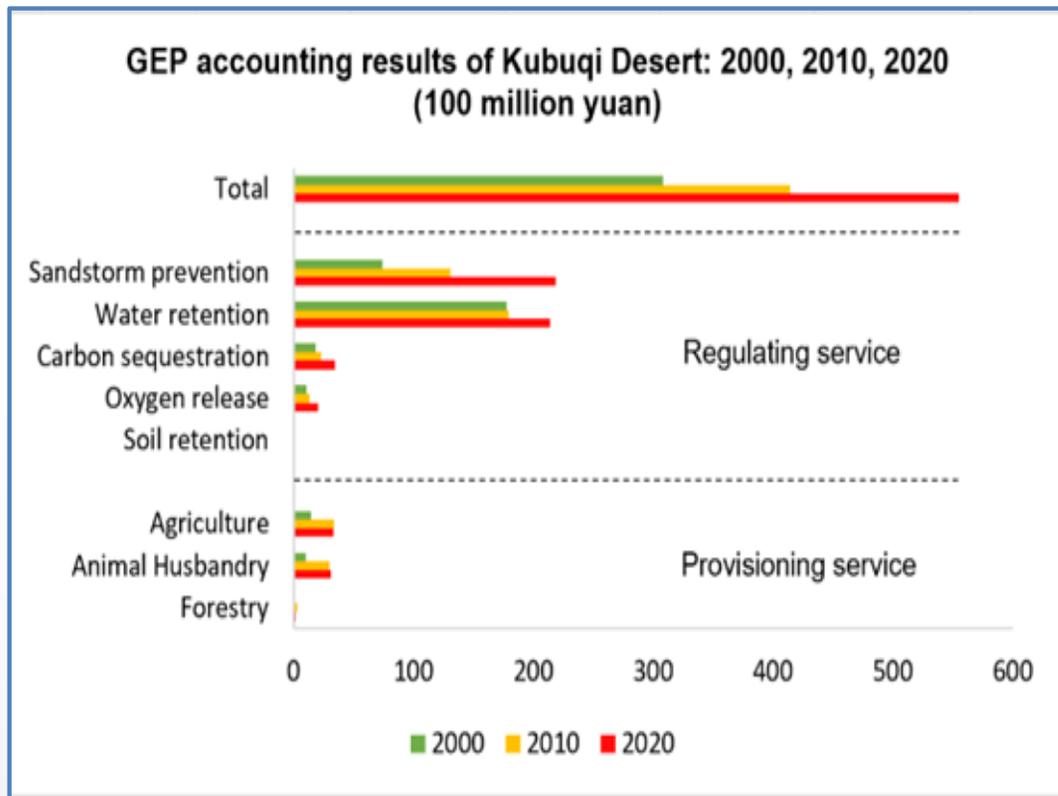
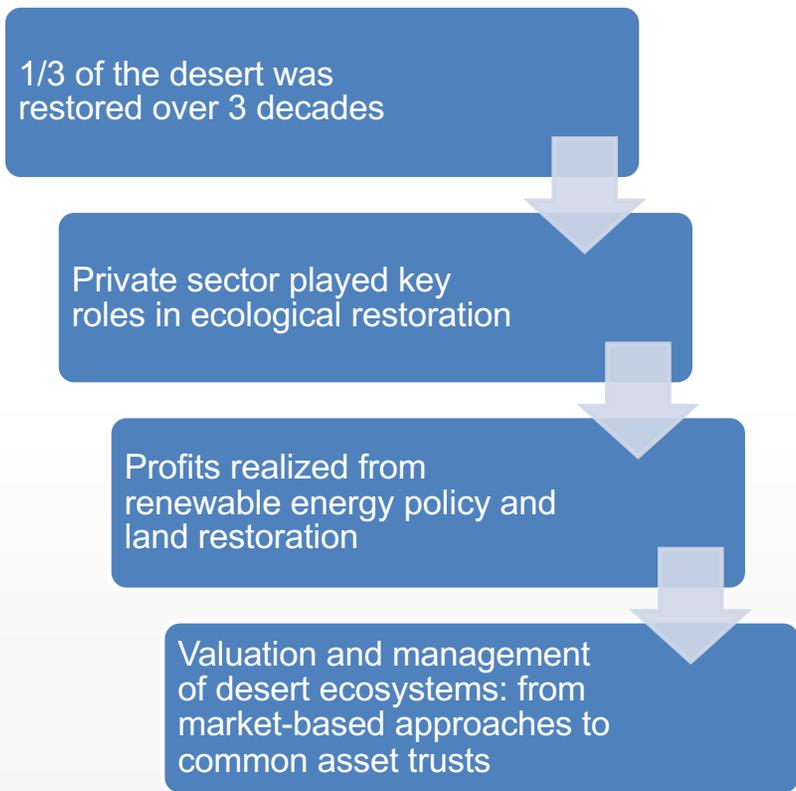
Silk Road Ecological Protection and Rehabilitation Project

Cooperation with Alibaba:

1. ANT forest:
 - Online “carbon account” for 500 million Alipay users to monitor daily activities to reduce carbon emissions (walking, pay online, shop online, etc.)
 - Collected “energy points” create virtual trees which can be converted into a real tree (NGO partnership).
 - Largest bottom-up platform for personal carbon accounts globally
 - Link with Rural Taobao Program and Poverty Rural Relief Fund
2. Rural Taobao Program: promoting rural e-commerce and inclusive business and connecting over 1 million buyers with farmers in >2000 village
3. Poverty Relief Fund: Investments into agriculture and ecological poverty reduction



Transformation of Kubuqi Desert in Inner Mongolia of PRC



Source: Consultation Report of ADB TA 6656-PRC: Ecological Services Valuation and Compensation Mechanism in the Kubuqi Desert

MON: Gobi Climate-Resilient Cashmere Value Chain

Key Features:

- Medium-term loan to Gobi for cashmere procurement and production to support Mongolian cashmere value chain TA to Mongolian herders for pasture management and herders' financial literacy to improve herders' climate resilience

ADB's Value Addition:

- Innovative Sustainability-Linked Loan (SLL) structure
- Gender action plan

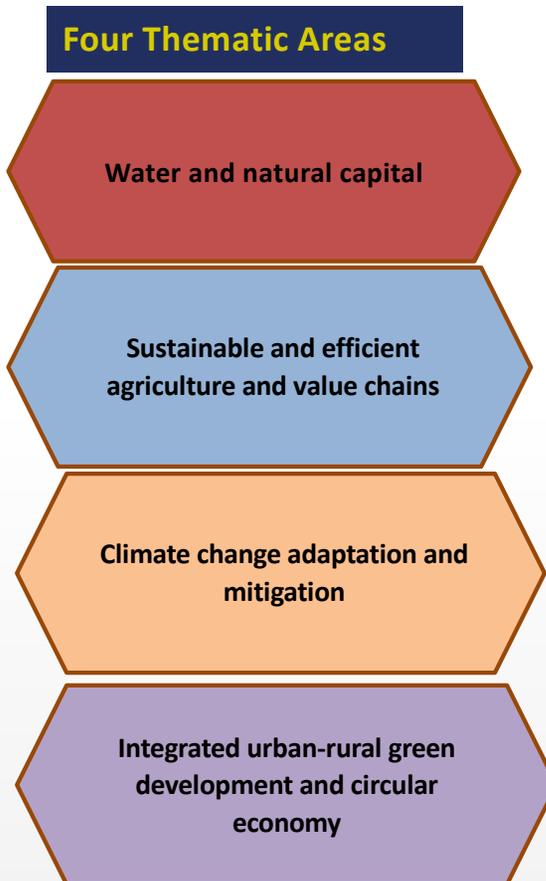
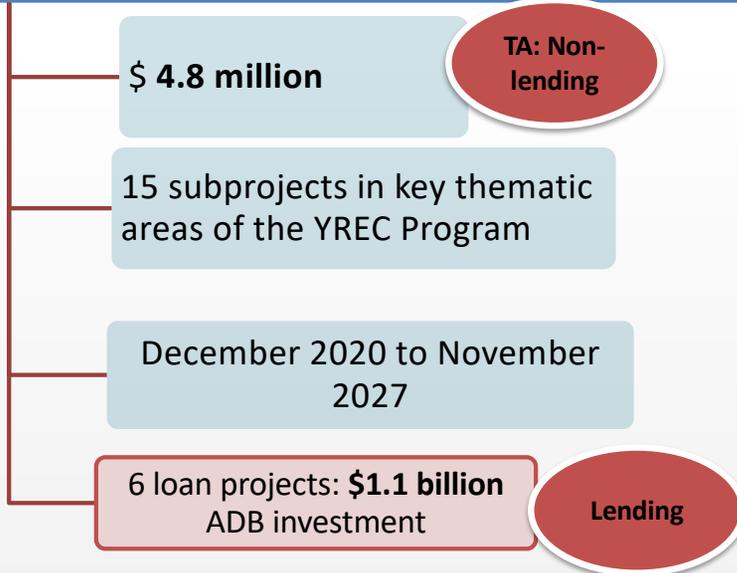
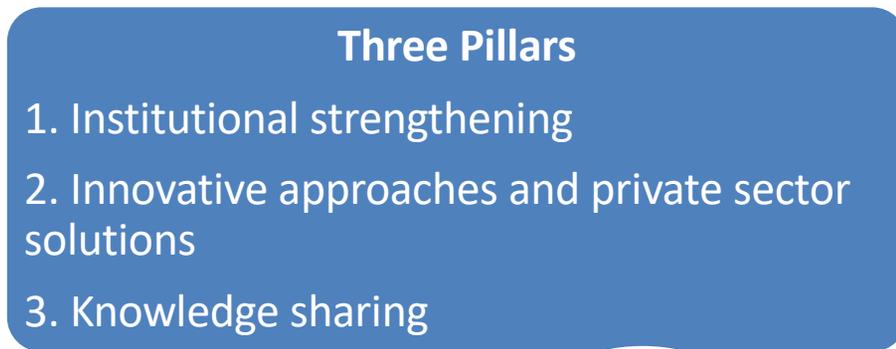


\$30 million loan, \$1 million TA

Approval Date : 26 Oct 2023

Target Signing Date : 16 Nov 2023

ADB Yellow River Ecological Program (YREC)





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Thank you!

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