Sustainable Herds, Thriving Steppes: Rethinking Livestock for Mongolia's Future

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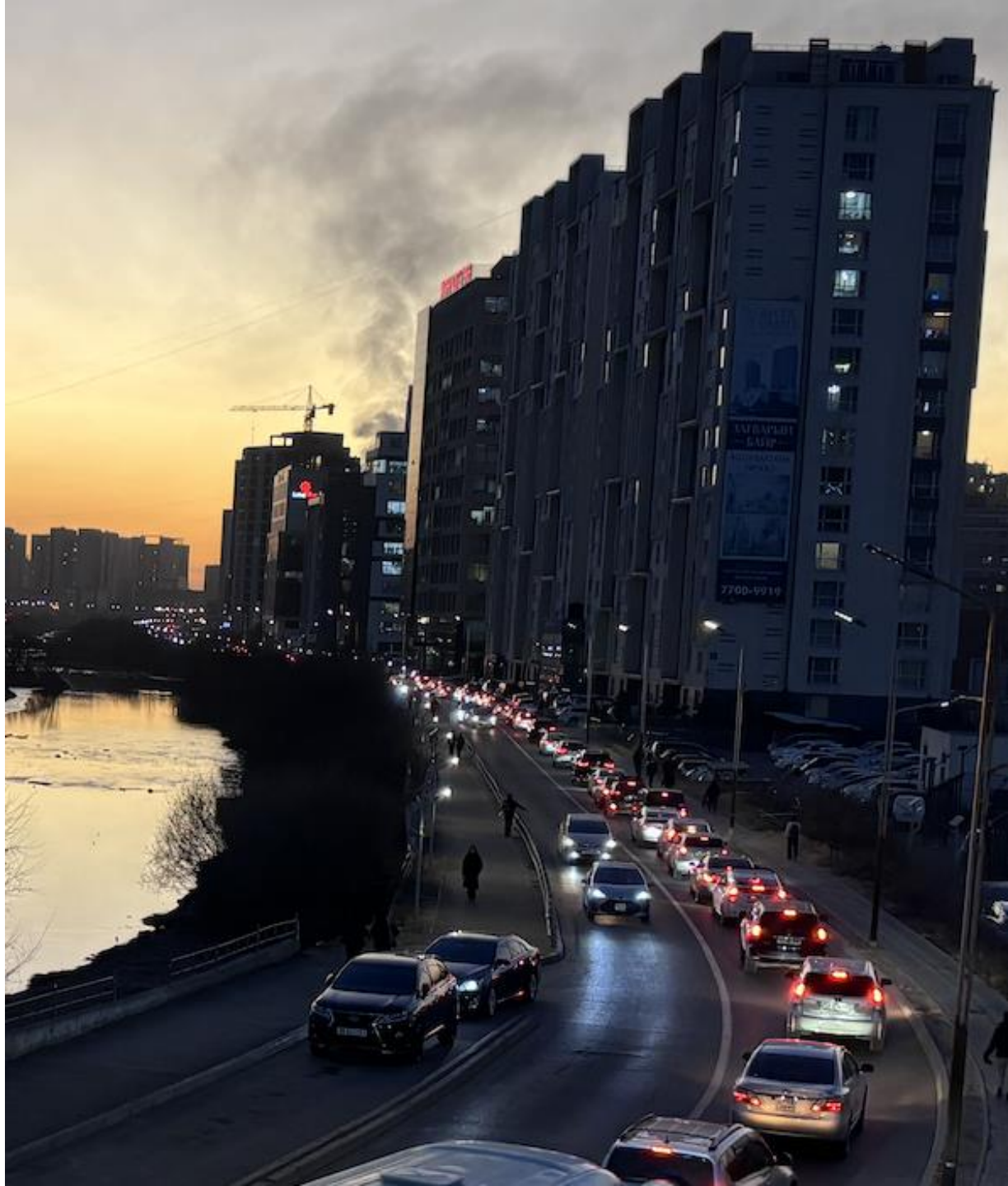
European Bank for Reconstruction and Development

Population Growth & Urban Demand



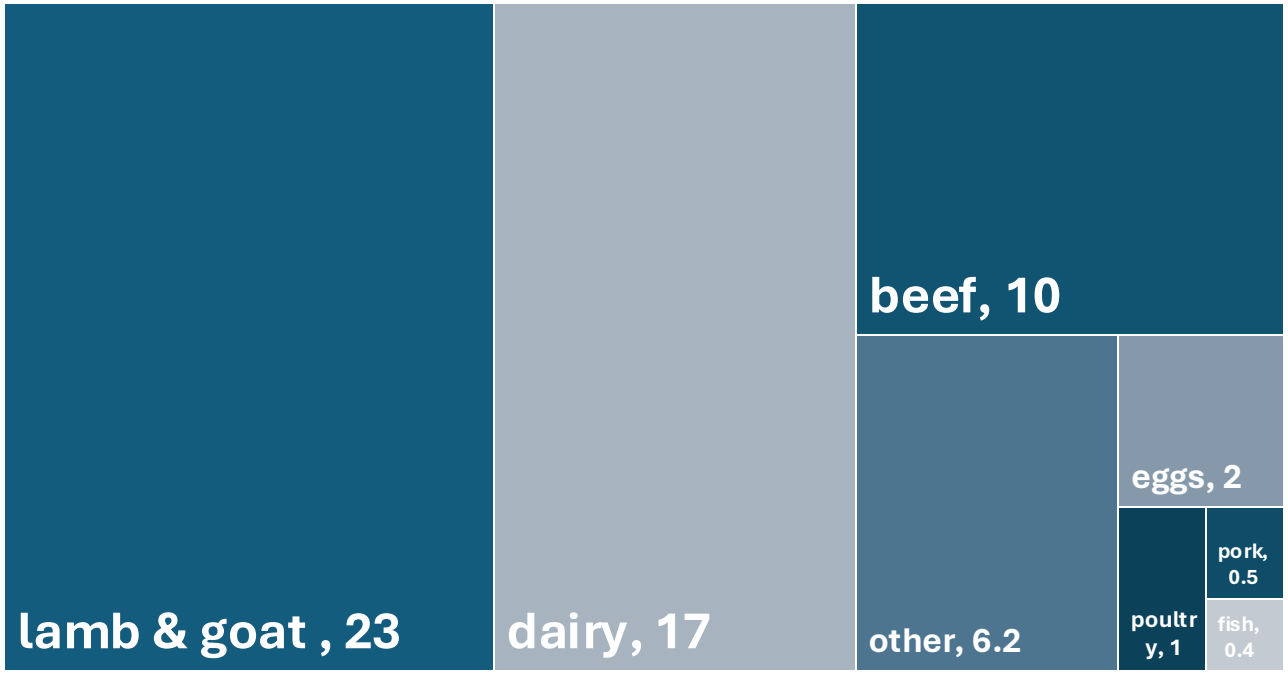
Ruminants: Mongolia's Protein Powerhouse - But at What Cost to Grasslands?

Daily Per Capita Animal Protein Supply

Global # 5: **60 g**

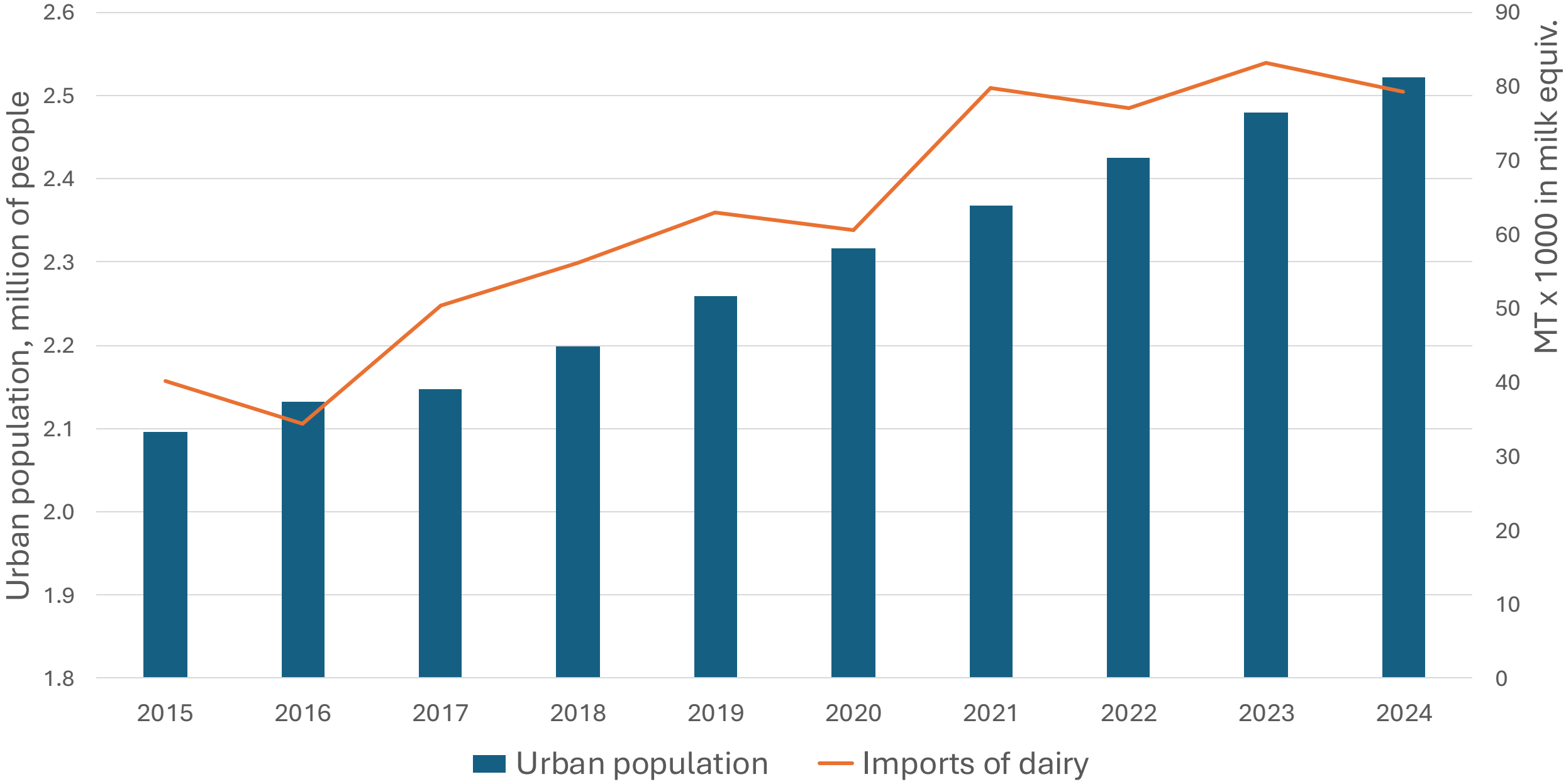
+40% people by 2050

77 > 110 k t. of protein



Source: FAO, 2020 data expressed in grams

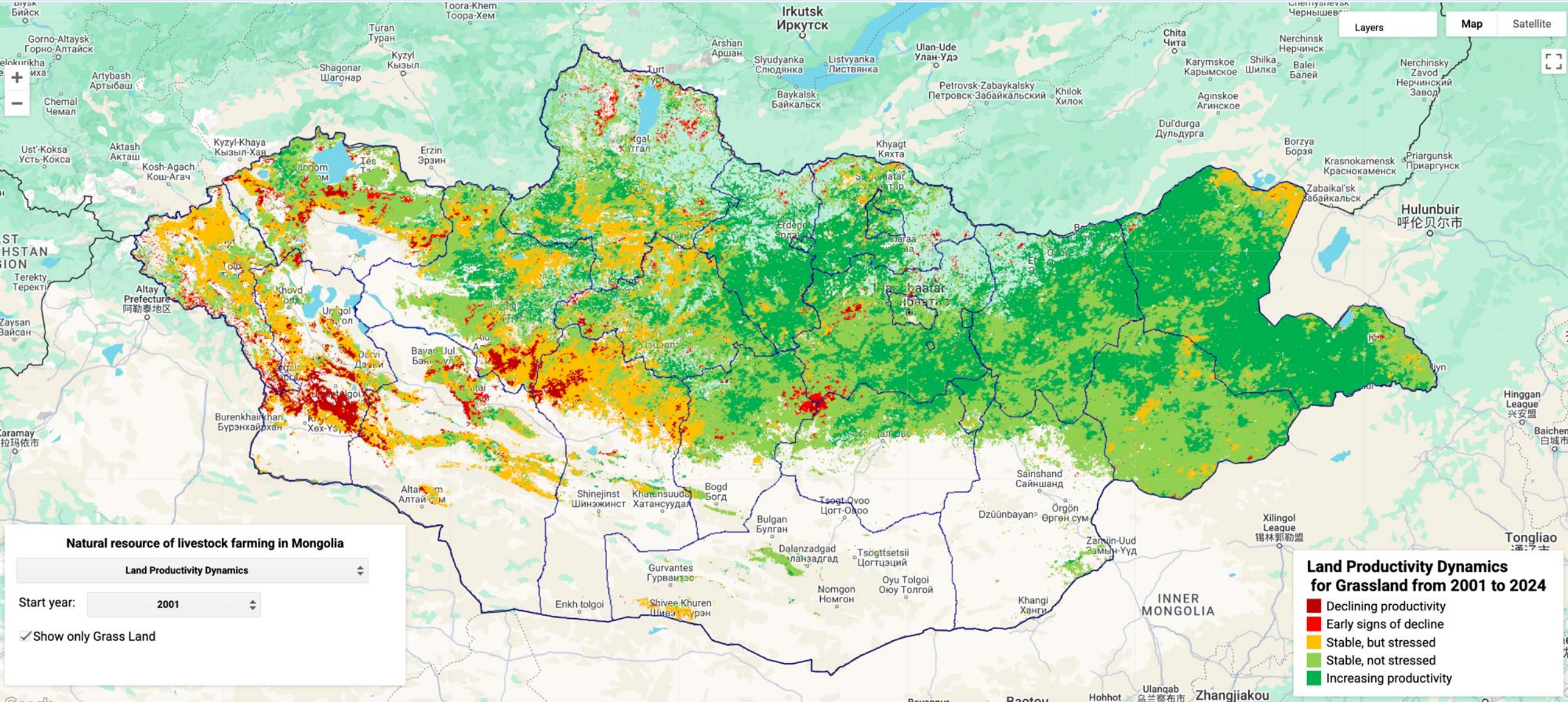
Example of Dairy: Urbanization Imports



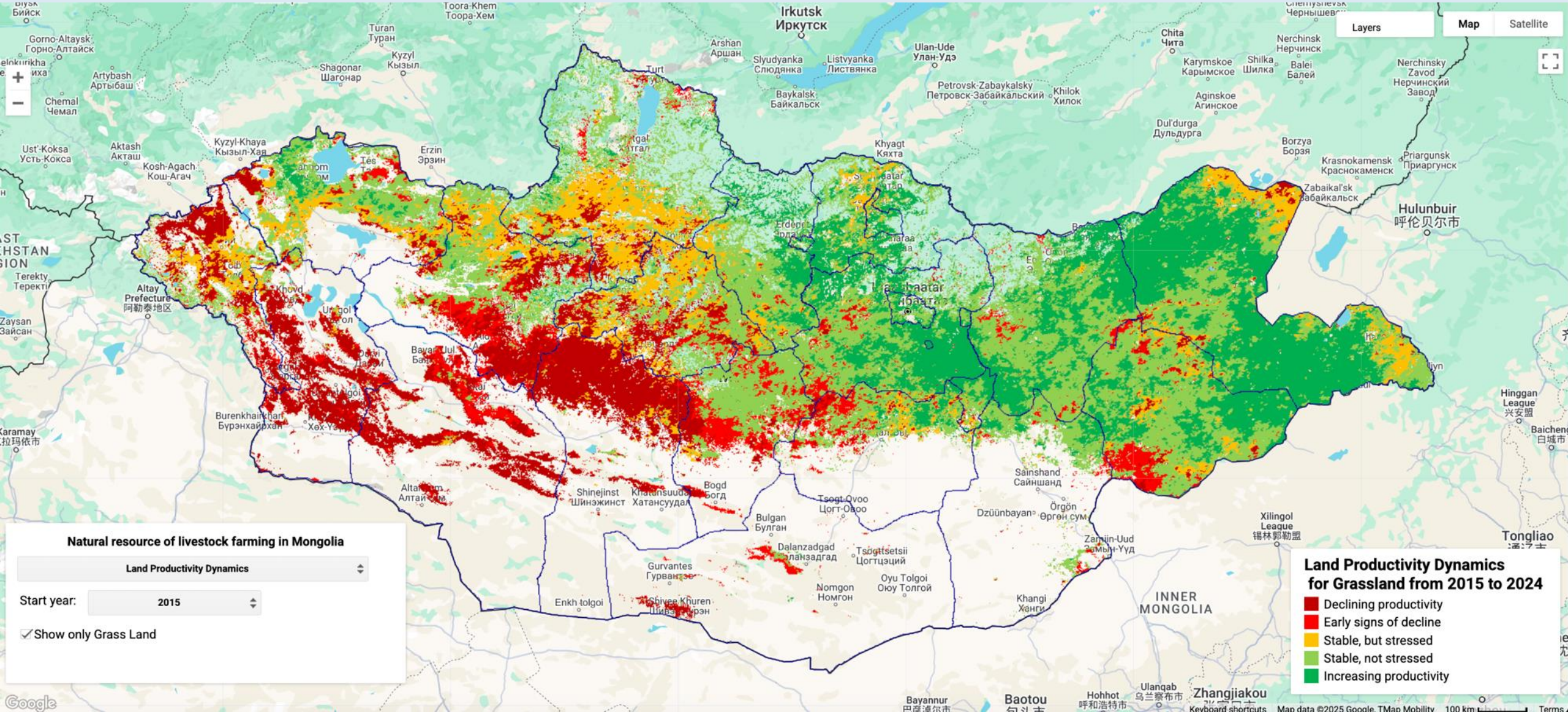
Regenerating the Steppe: A Win for Climate & Economy

Climate Resilience. Opportunities in the Livestock Sector in Mongolia

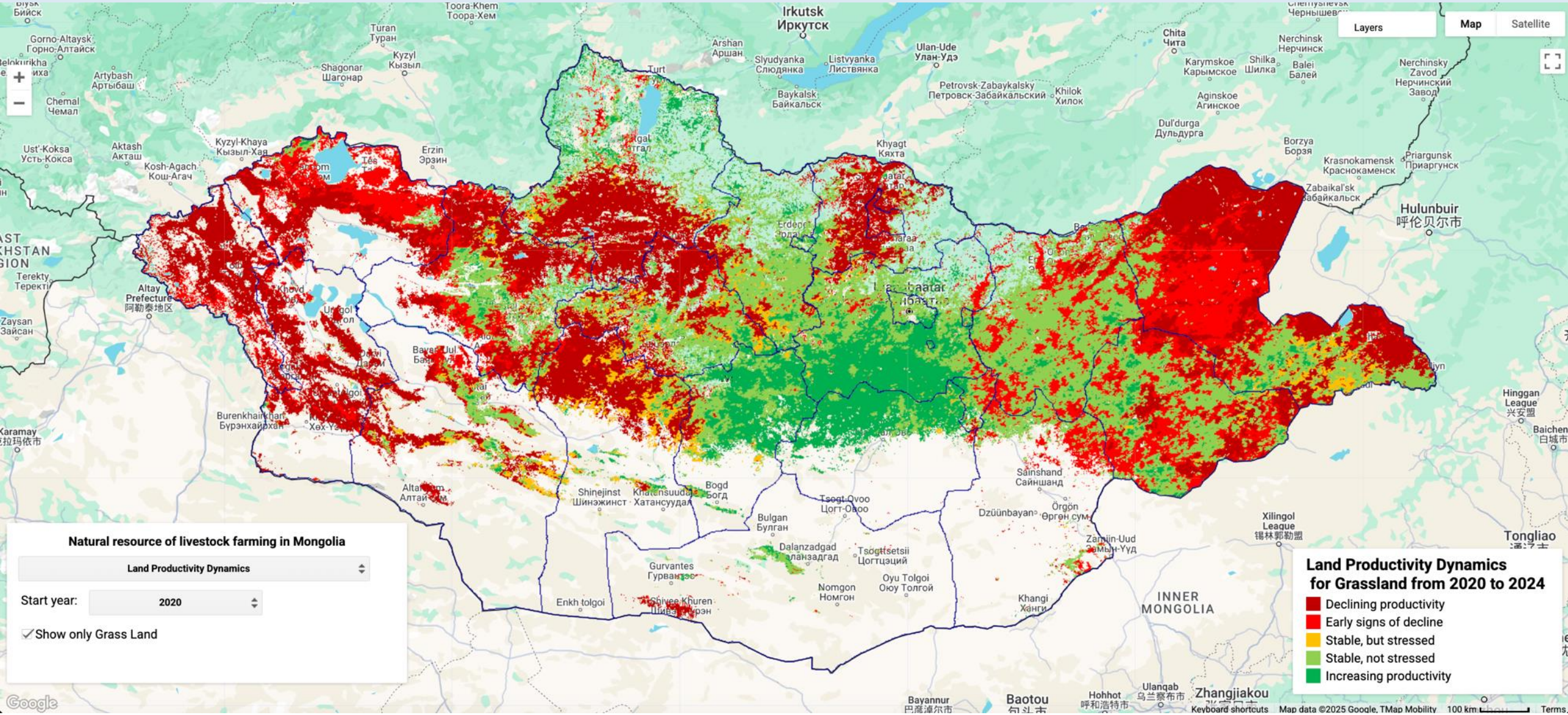
Grassland Productivity: since 2001



Grassland Productivity: since 2015



Grassland Productivity: since 2020



Regenerating the Steppe: A Win for Climate and Livestock Industry

SCALA Project (FAO/UNDP)
Promoting Dryland Sustainable Landscapes and Biodiversity Conservation in the Eastern Steppe of Mongolia (GEF-7)

Carbon Sink (CO_2eq./year)

- 1 ha of pasture = 0.2-2 t.
- 1 ha of forest = 5-20 t.

% of Feed in Production Cost

Raw milk example:

- Semi-intensive: 30-40%
- Intensive: 70-80%
- BUT: can be 0% (25 L)

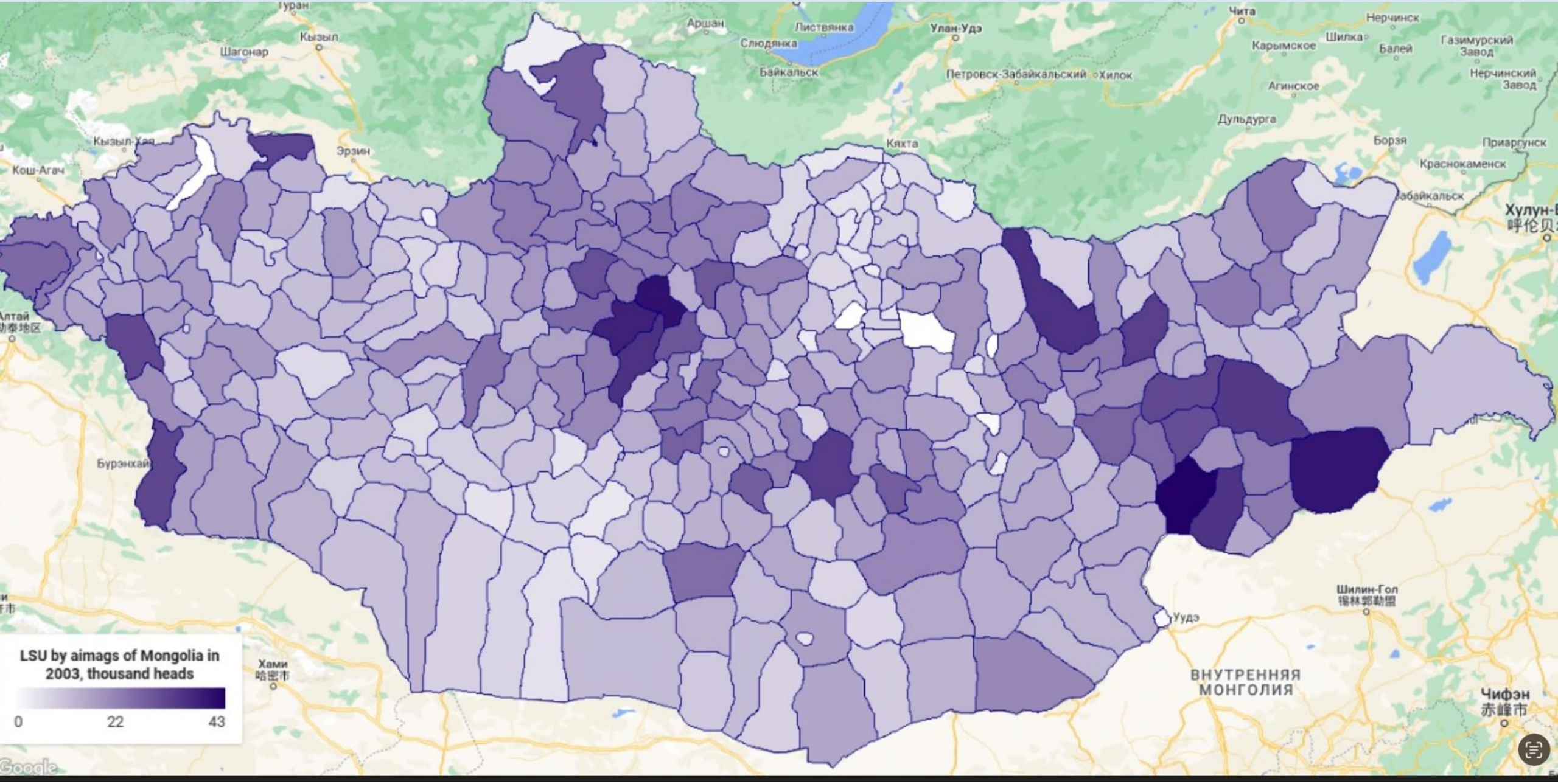
Welfare & Consumer Appel

Mongolia's Signature

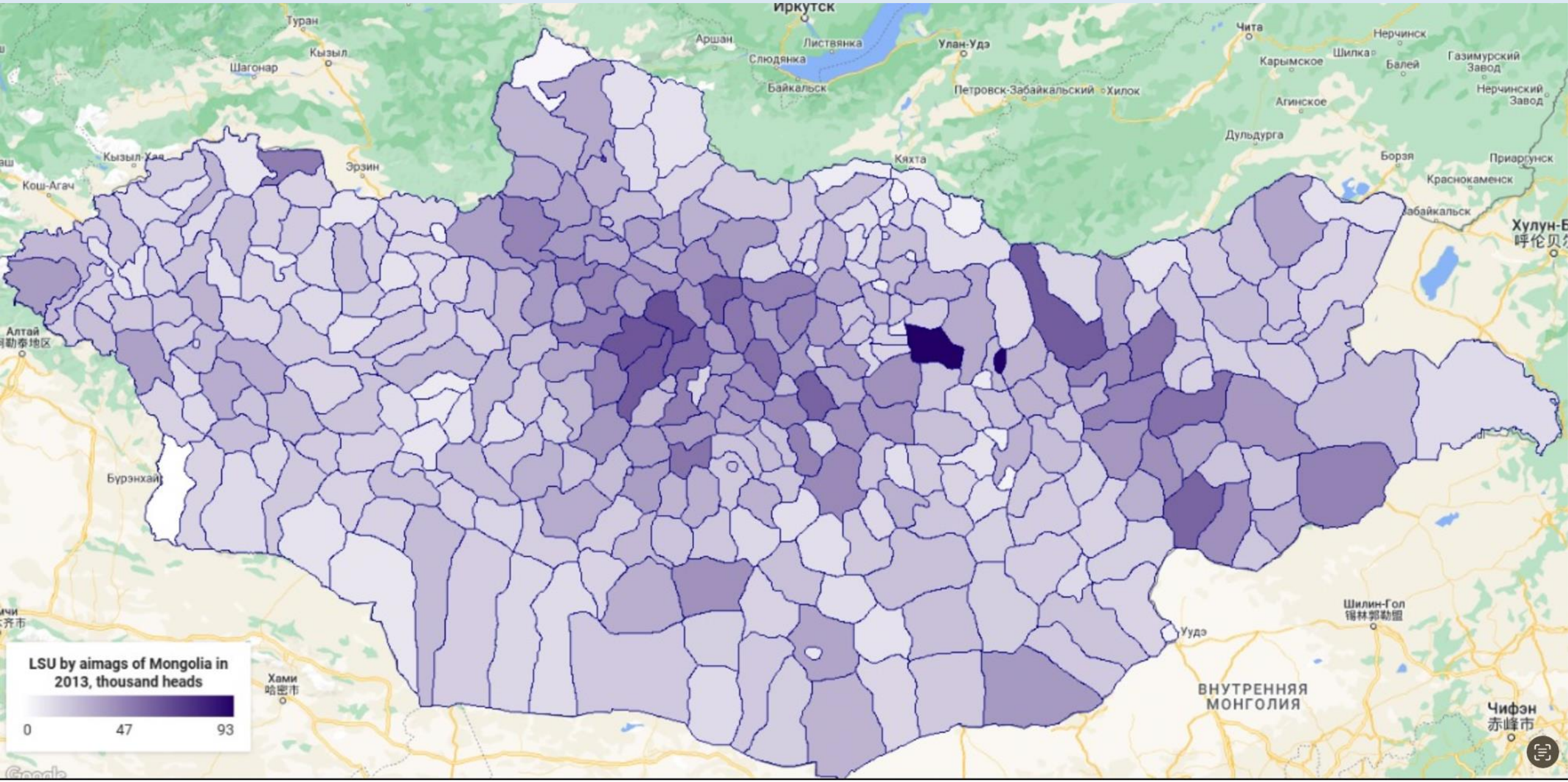
Measuring What Matters: Data for Smarter Livestock Policies and Investments

Livestock Inventories: A Trend, That We Need To Reverse

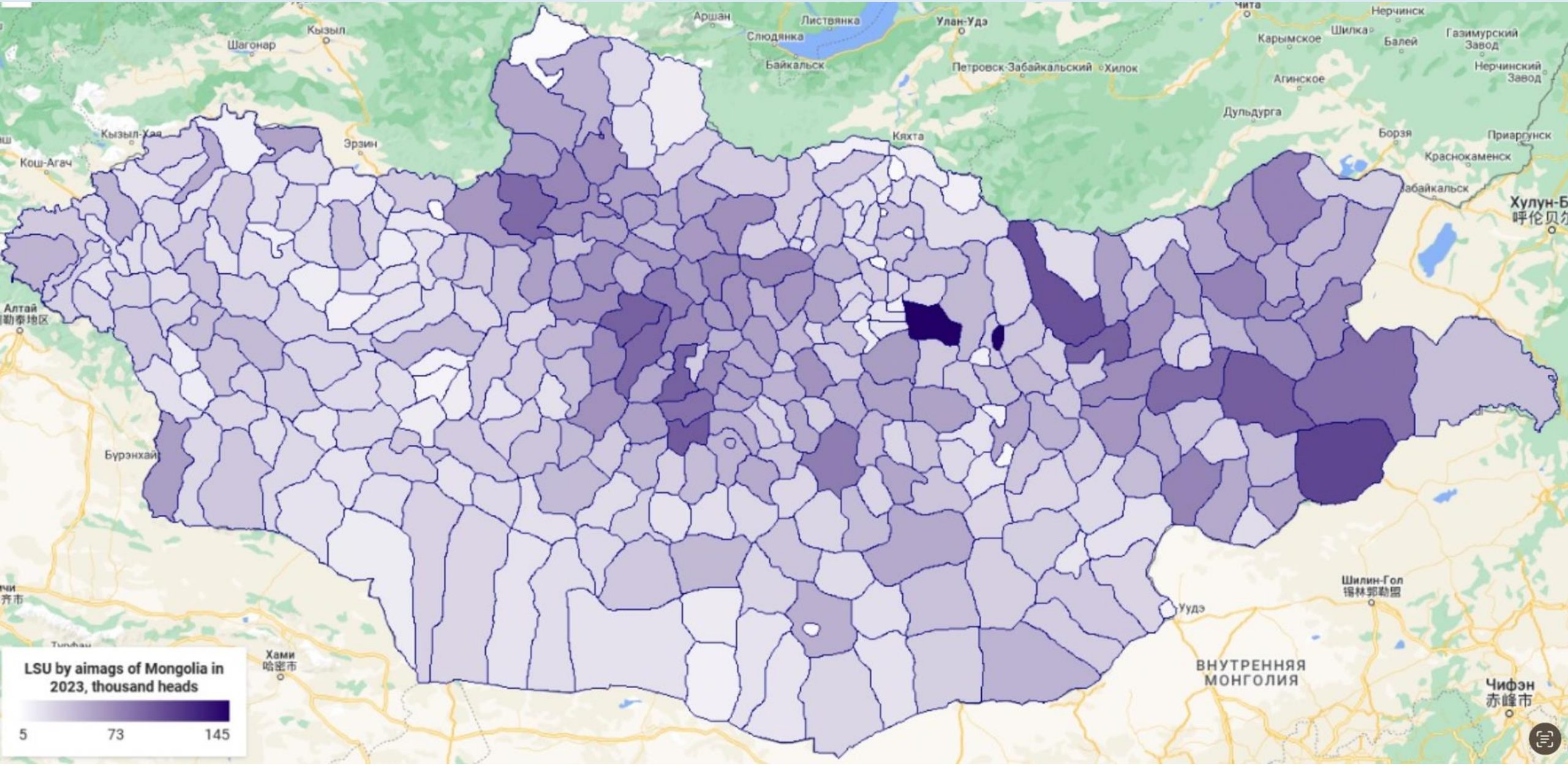
Distribution of animals in 2003 (in Livestock Units per Aimag)



Distribution of animals in 2013 (in Livestock Units per Aimag)



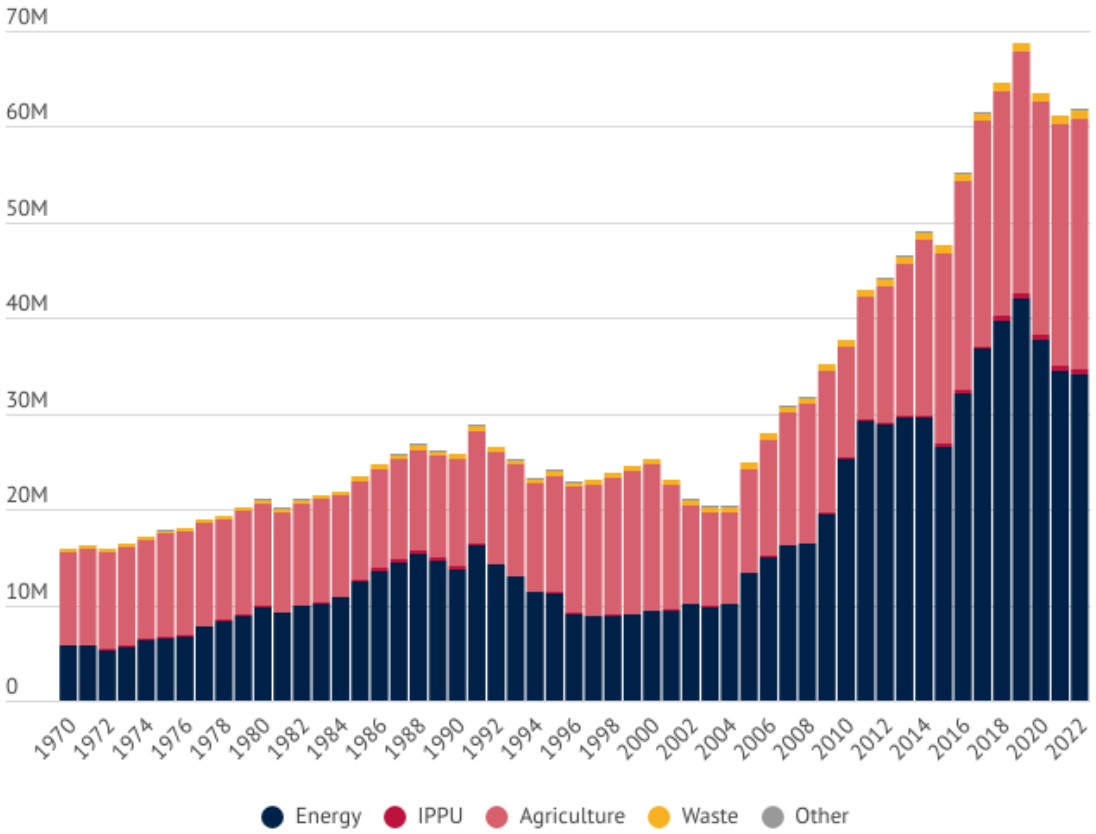
Distribution of animals in 2023 (in Livestock Units per Aimag)



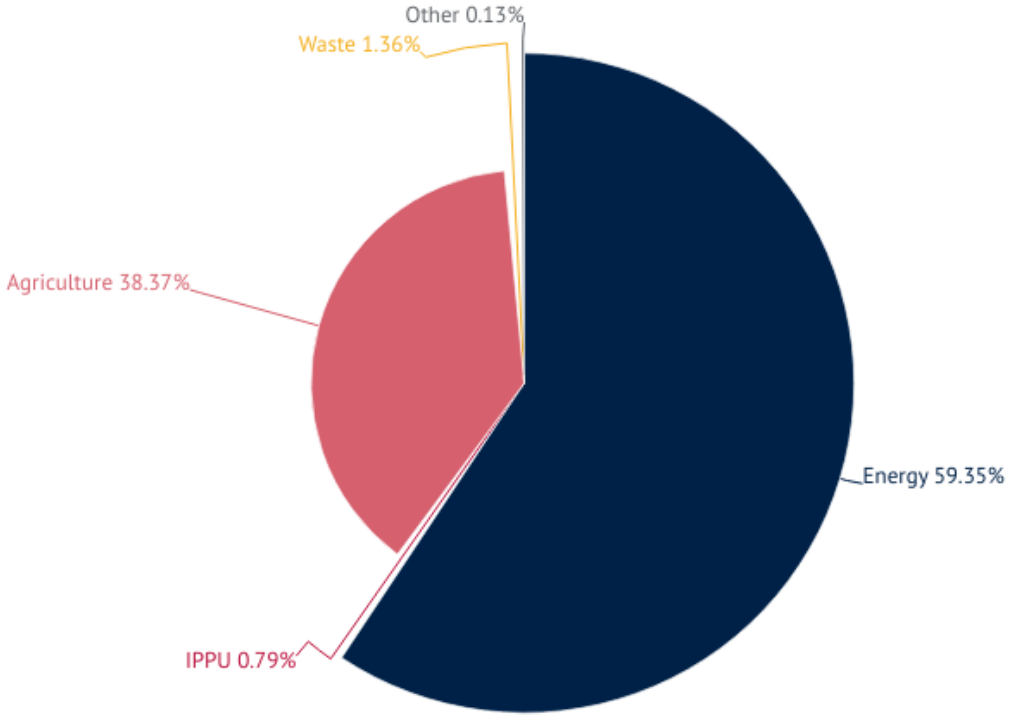
Livestock Carbon Footprint:
Big Room for Reduction

Mongolia's GHG Emissions: By Sectors. Ag – 38%

National greenhouse gas emissions by sector over time (1970–2022)



Distribution of emissions in 2020 by sector



Sectoral GHG emissions represent emissions within each IPCC sector, except to land use, land use change and forestry (LULUCF)

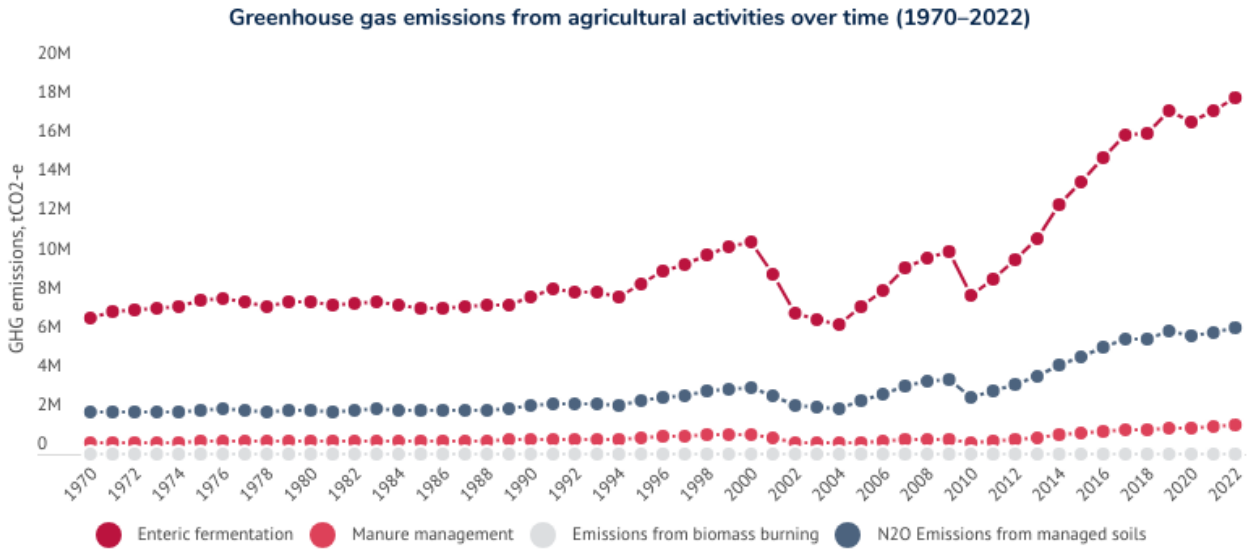
IPPU stands for Industrial Processes and Product Use

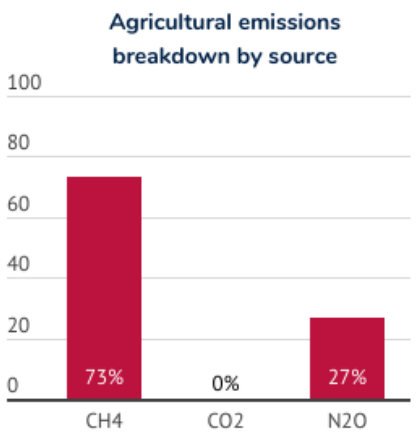
Other are indirect N2O emissions from the atmospheric deposition of nitrogen in NOx and NH3

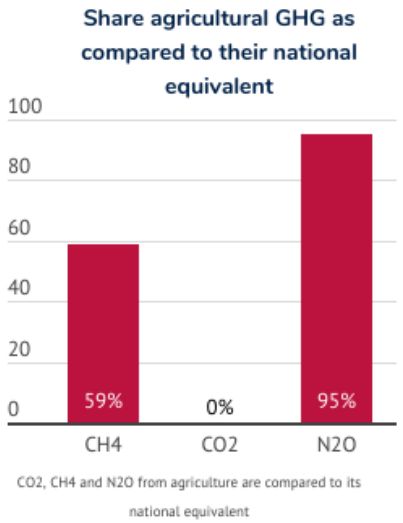
All emissions are in tCO_2-e estimated with the Global warming potential of the 5th Assessment Report from the IPCC without climate-carbon feedback

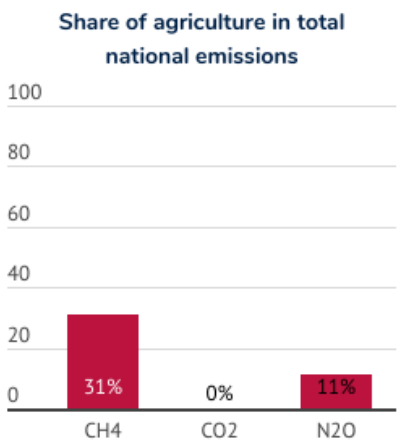
Source:
European Commission, 2023. https://edgar.jrc.ec.europa.eu/dataset_ghg80

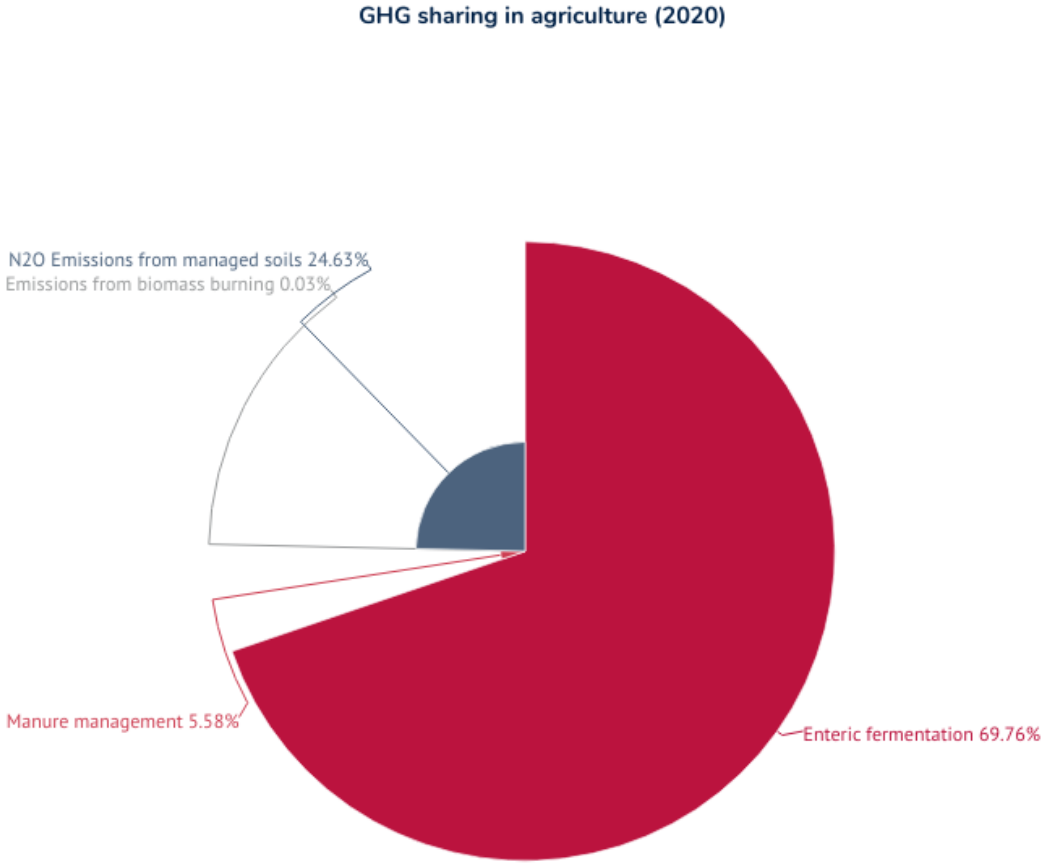
Mongolia's GHG Emissions: Zooming in on Agriculture







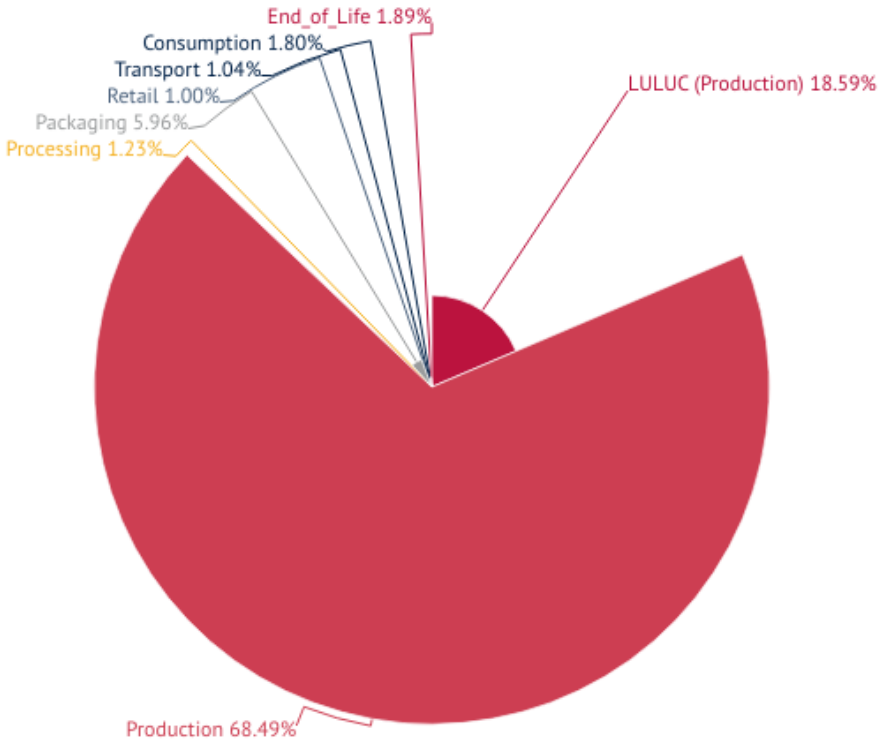




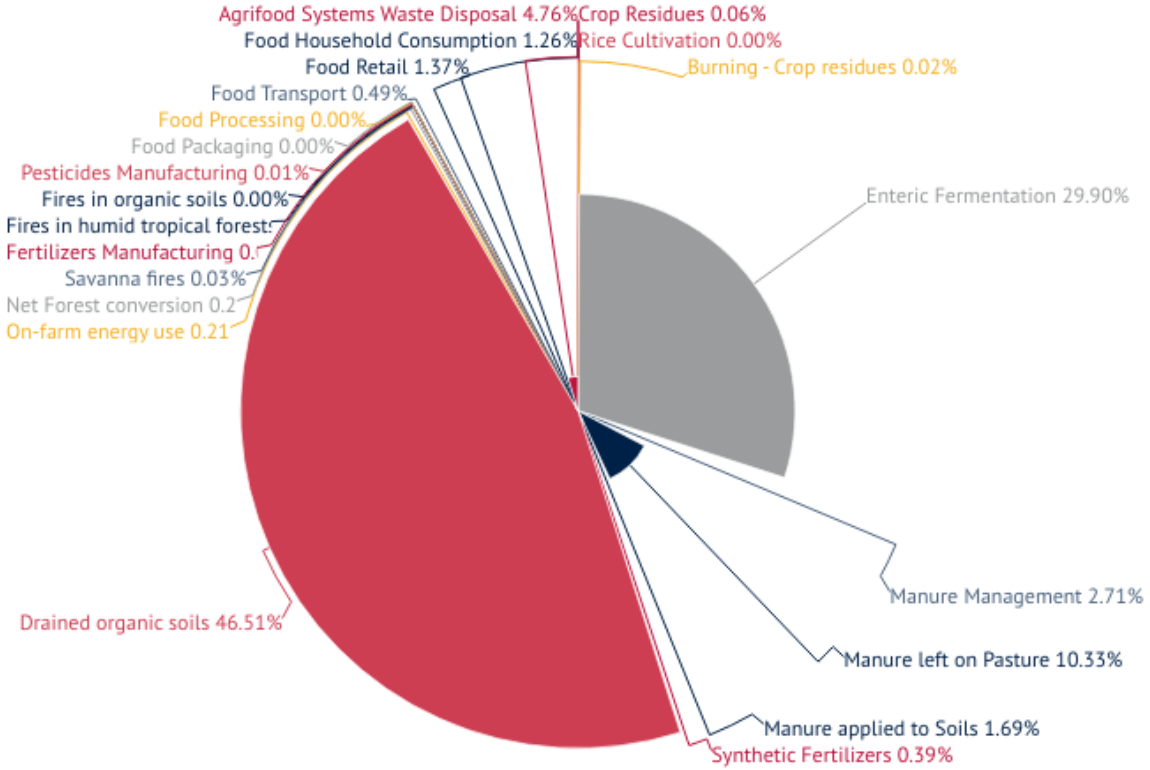
Source:
Left graph: European Commission, 2023. https://edgar.jrc.ec.europa.eu/dataset_ghg80

Mongolia's GHG Emissions: Zooming out – Agrifood System

GHG sharing per stages in agrifood systems (2018) - about 11 million tCO_2-e or 56% of the national GHG emissions



Distribution of emissions from agrifood system by stage in 2018



End of Life: Composting, solid waste incineation, domestic waste water and landfills

Source:
Left graph: EDGARfood, AGF year 2018
Right graph: FAOSTAT, AGF Year 2018

Low-Cost Solutions for Sufficient Raw Material Base

Example of Cow Milk Emission Intensity, kg CO_2-eq./ kg of protein

Extensive system
BAU

Semi-intensive system
BAU

(!)
Yields can be doubled

Balanced Feed Ration + Enough Drinking Water

FAO & EBRD’s Exit Strategy: Partnering with the Industry Associations

ҮНДЭСНИЙ ЗӨВЛӨЛ

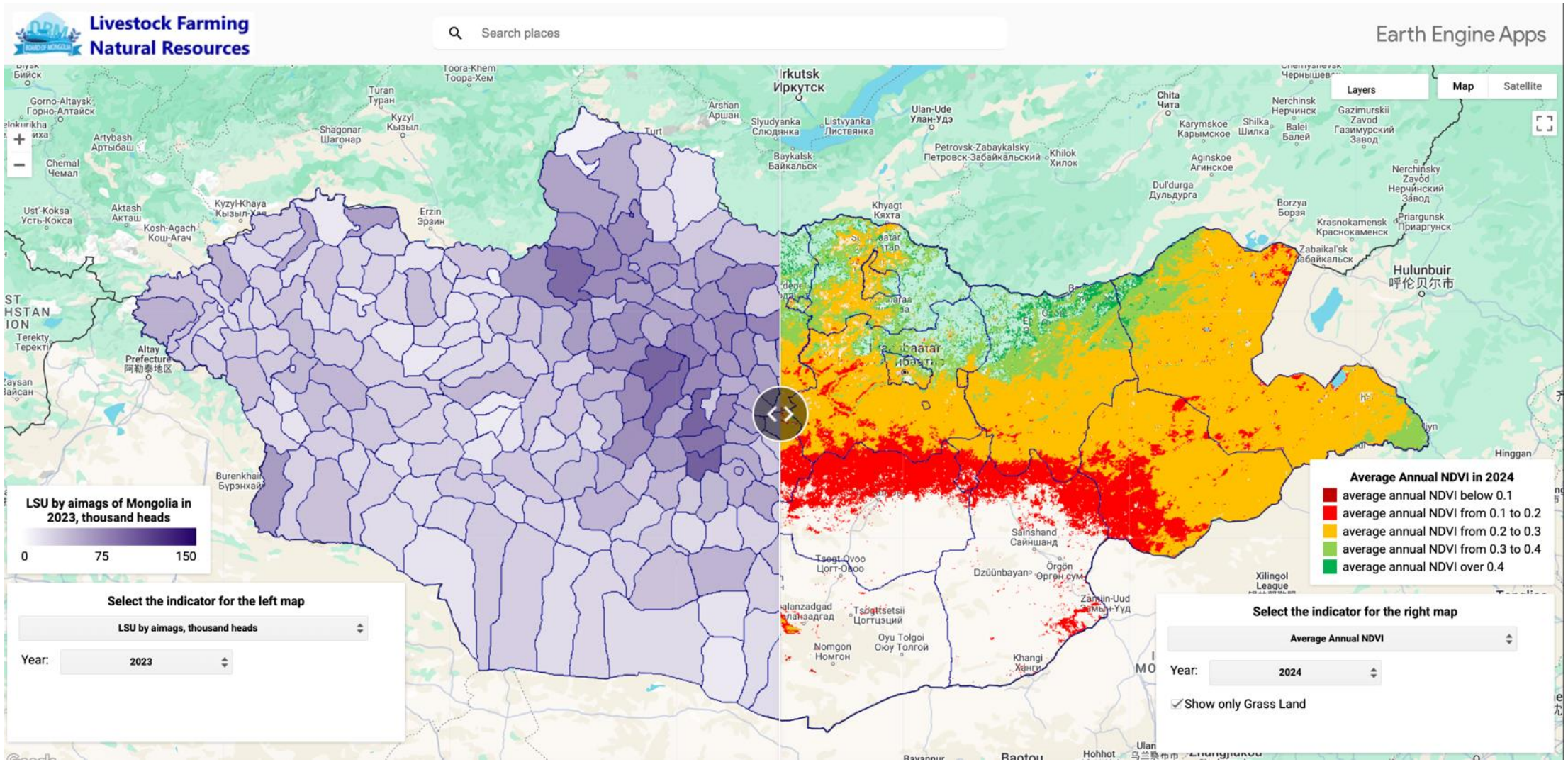
Kick-off meeting in November 2024

EBRD/FAO Technical assistance project “Mongolia: Strengthening Climate Resilience in Dairy Farming - Sustainable Strategies for Future of Food"

Climate Resilience. Opportunities in the Livestock Sector in Mongolia

FAO & EBRD's Exit Strategy: Partnering with the Industry Associations (2/4)

- **Decision-support Service for an informed policy dialogue**

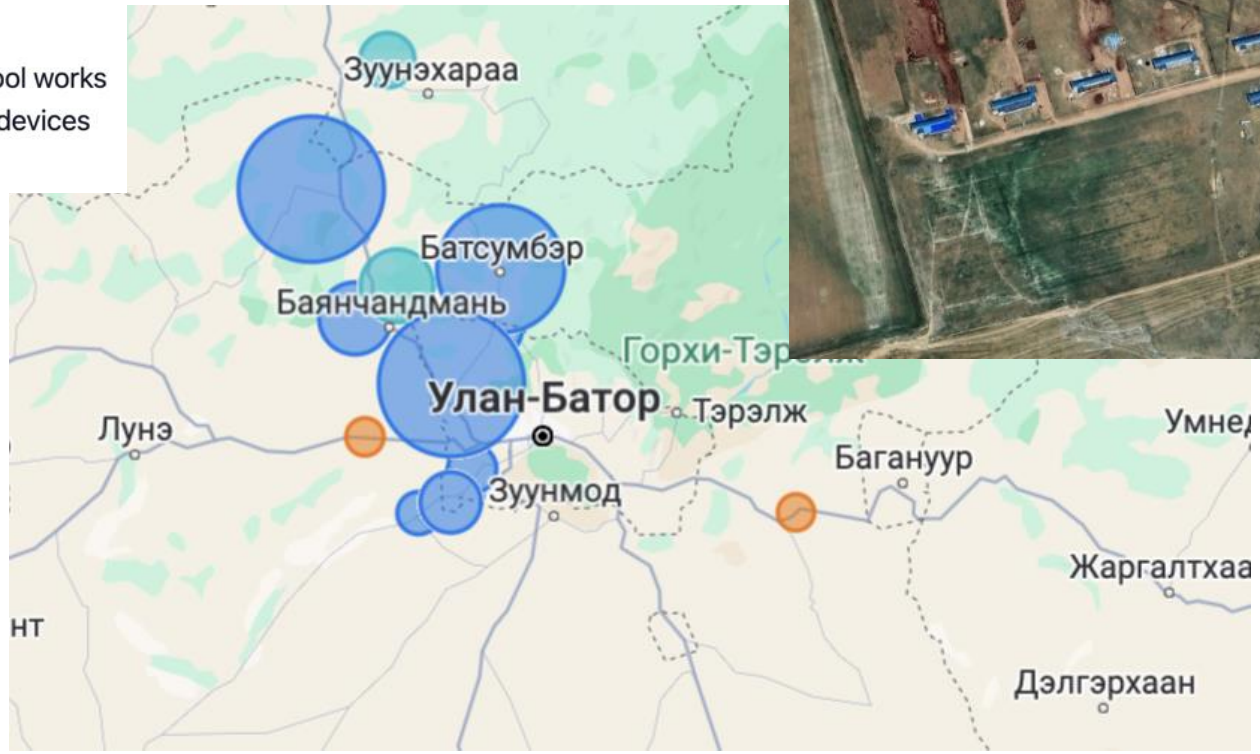


FAO & EBRD's Exit Strategy: Partnering with the Industry Associations (3/4)

- **Digital farm data collection, interactive visualization dashboards**

Arena Mobile

The fast, new generation data collection tool works with Arena and runs on Android and iOS devices



FAO & EBRD's Exit Strategy: Partnering with the Industry Associations (3/4)

- **Advisory Service to Farmers (e-extention app *AgriBagsh)***
- **FAO-trained Staff**
- **Visual materials**

Lead with Good Practices, Thrive with Biodiversity, Be the Change: Lesson of Iran

12% Arable Land: The Unseen Challenge Behind Iran’s Agricultural Plans

Family farms mastered local genetics

1930s - 70%

2010s - 5%

Saraby, Sistany, Golpaigany, Najdy >>

Booming Dairy Industry: Surging Demand for Raw Milk

1940s – industry boom

SME dairies: 5-15 t./day

Good profits

Pursuing Growth at Any Cost

Massive intensification of feed production in 2040s - 2070s

… And The Rise of Large-Scale Intensive Dairy Farms

Wastewater treatment

10%+ farms: 2-5 k cows

Yields: 10-11 t./cow

Bulk of farms: 400 cows

Genetics - from leading US companies

TMR, silage is transported 400-500 km

… But At a Very High Cost

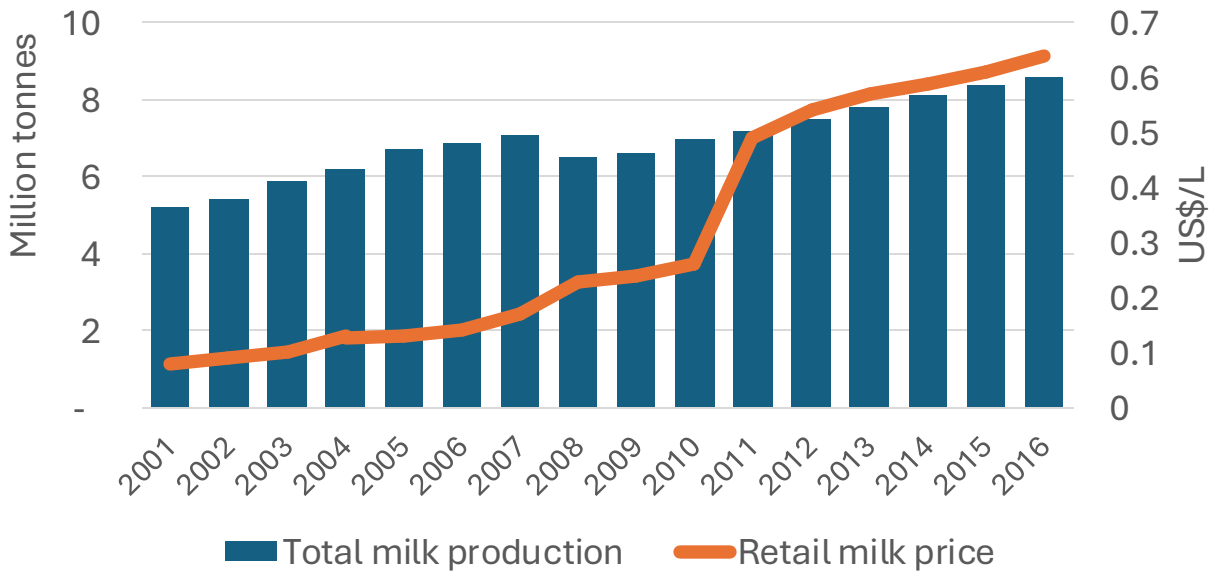
Greater irrigation water needs
More fields allocated to forages
Massive wells drilling

The Cost of Overexploited Wells Was High

Feeding Cows from Afar: The New Reality

Unplanned Results: For Land, Water.. And Consumer

- **Lost natural resource**
- **Spiked consumer prices > drop in consumption**
- **Farms face losses**



(Expensive) Way Forward

- New irrigation systems & water harvesting
- Removal of unauthorized wells
- Different forage production systems
- Focus on EFFICIENCY

Evidence-based planning yielded results:

- Since 2015, Iran is self-sufficient in wheat
- Farms generated more profits, while farmgate price didn't change
- Genuine public-private dialogue made a difference


Greener Livestock >> More Profits > > More Jobs
Анхааралтай сонсож, тунгаан бодсонд баярлалаа