ASIA AND PACIFIC DEPARTMENT

Mongolia's Climate Change Challenges

Mongolia 2022 Article IV

September 26, 2022

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Outline

- Climate Change Vulnerabilities
- Coal-intensive Growth Model and Global Mitigation Scenario
- GHG Emissions and Air Pollution
- Mongolia Climate Commitments and Policy Response
- Climate Change Policy Options

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Climate Change Vulnerabilities

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Climate Change Vulnerabilities

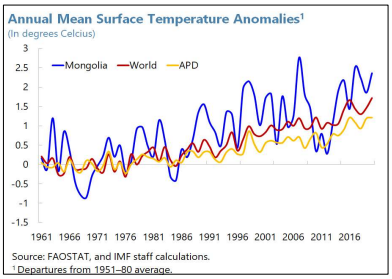
Fast changing climate

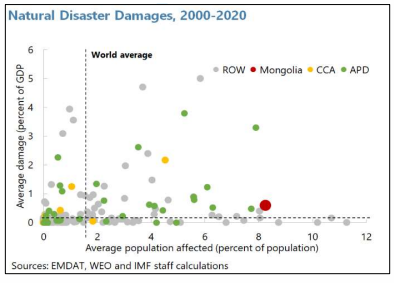
- rising temperatures
- dryer climate
- more frequent and intense weather shocks
- intensifying desertification and land degradation

Climate risks projected to intensify

- rising temperature [2 ; 6]°C by 2100
- more frequent and intense weather shocks
- intensifying desertification

Additional pressure on human health, livelihoods, agricultural yields and ecosystems.





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Climate Change Vulnerabilities

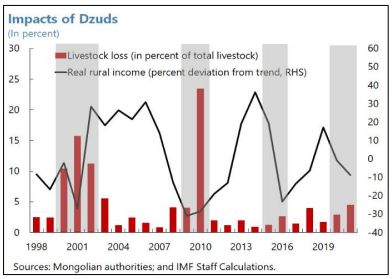
Agricultural sector is extremely vulnerable

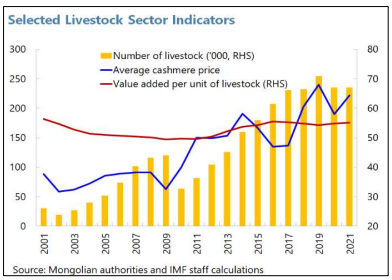
- major economic pillar
- strongly impacted by weather shocks (i.e. dzuds, droughts)
- impact on rural income, inequality and poverty
- risk on food security

Vulnerabilities exacerbated by overgrazing

- rural income driven by the enlargement of herd sizes and rising cashmere price
- livestock doubled in 2 decades – way over sustainable levels
- overgrazing intensifies desertification and land degradation

Need for strong adaptation reform plan





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Coal-intensive Growth Model and Global Mitigation Scenario

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Coal-intensive Growth Model and Global Mitigation Scenario

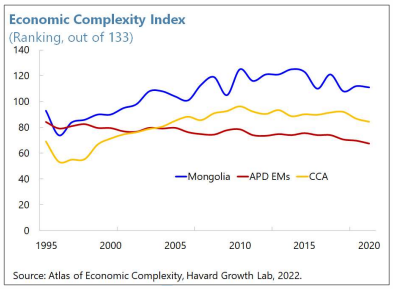
Narrow economic base and commodity exports reliance

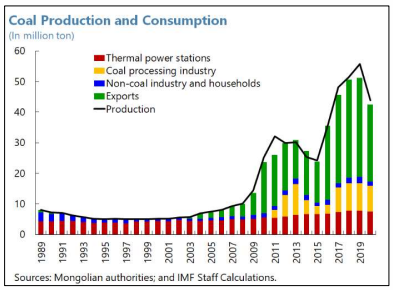
- concentrated in few sectors (agriculture, mining)
- low economic complexity and diversity
- mineral exports account for 55% of GDP (70% of which is coal and copper)

Coal dependance

- production: +750 percent over 2 decades (50 million tons/ year)
- major role in the economy (electricity/heating, FX inflows, fiscal revenue, infrastructure projects financing)

High vulnerability to external shocks



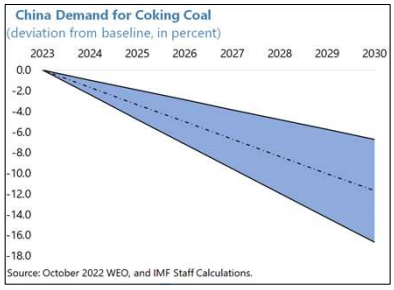


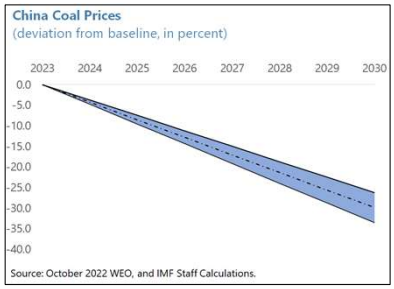
Coal-intensive Growth Model and Global Mitigation Scenario

A shift to a low-carbon global economy could have severe a macroeconomic impact

October 2022 WEO scenario: global economy reduces GHG emissions by 25% compared to today's level by 2030

- Estimates the decline in coal prices and demand international and in China



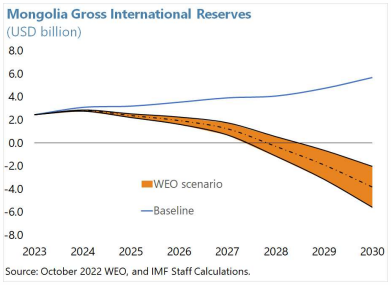


Coal-intensive Growth Model and Global Mitigation Scenario

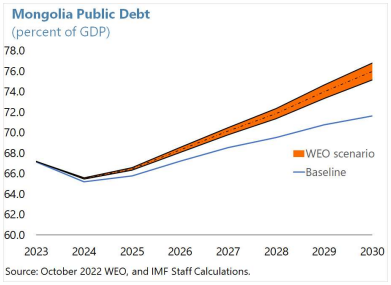
Large direct economic impacts
by 2030:

- Coal exports reduction by [30 ; 45] percent, or [2.5 ; 4] billion USD below baseline;
- CA deficit widening by [2 ; 3] billion USD
- GIR would turn negative by 2028
- Mining revenue reduced by [0.5 ; 0.8] percent of GDP
- Public debt increased by [3.5 ; 5.2] percent of GDP

Need to preemptively diversify its economy and reduce its reliance to coal exports



Source: October 2022 WEO, and IMF Staff Calculations.



Source: October 2022 WEO, and IMF Staff Calculations.

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GHG Emissions and Air Pollution

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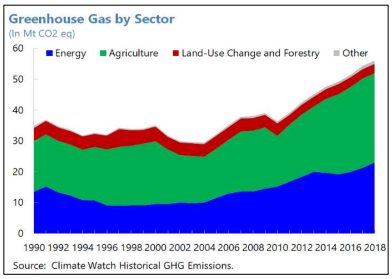
GHG Emissions and Air Pollution

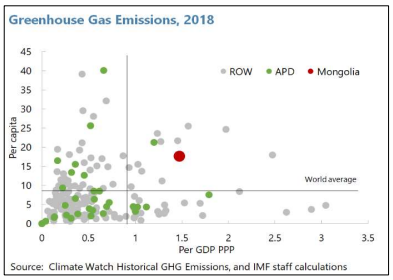
High GHG emissions growth

- 65 percent GHG emissions growth over 2 decades
- concentrated energy and agriculture
- coal-based power, mining sector developments and livestock headcount



Carbon-intensive economy

- small GHG emissions in absolute terms
- very high GHG emissions per capita and per GDP unit compared to peers



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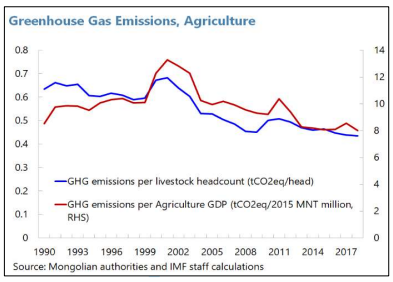
GHG Emissions and Air Pollution

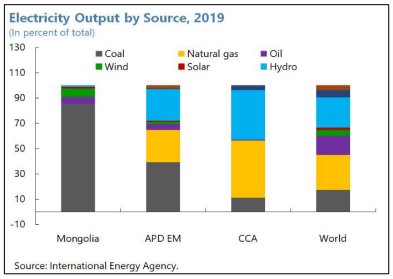
Agricultural sector

- 50 percent of total GHG emissions
- +78 percent since 1990
- mainly methane and nitrogen oxide
- some reduction in carbon intensity



Coal combustion

- wide use: CHPs, boilers, stoves
- 85% of domestic electricity production
- largely used in heat production
- 40% of GHG emissions and 80% of CO_2 emissions



Air pollution has become a public health issue

- 12 times the WHO guideline value for PM2.5 (27 times in UB)

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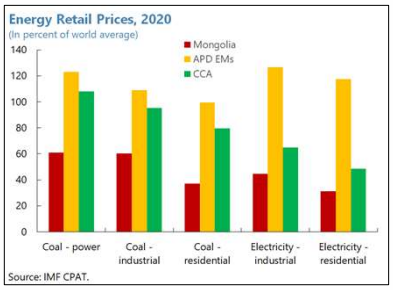
GHG Emissions and Air Pollution

Very low price of carbon emissions

- energy tariffs are much lower than peers
- large implicit subsidies
  - electricity generation companies pay for coal at below-market prices
  - electricity tariffs 28% below costs, not adjusted since 2019
  - heat prices also way below costs
  - ▶ large losses for electricity generation companies
  - ▶ electricity losses



Need for a comprehensive emission reduction strategy

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Mongolia Climate Commitments and Policies

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Mongolia Climate Commitments and Policies

Commitments

- **2019 NDC:** reduce GHG emissions reduction of 22.7% by 2030 compared to BAU
- **SDGs:** climate change related targets by 2030

Long term strategies

- Sustainable Vision 2030 and 2050

Legal framework

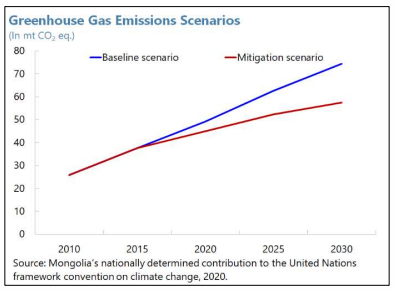
- development policy law
- climate change law
- renewable energy law

Government plans

- NDC action plan for 2020-2025
- national adaptation plan (phase 2 ended in 2020)

Green Financing and donors' support

- Nearly $1 billion funded by GCF
- Support from UNEP, JCM, ADB, WB
- Xac Bank and TDB accredited to provide green financing



Source: Mongolia's nationally determined contribution to the United Nations framework convention on climate change, 2020.

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Mongolia Climate Commitments and Policies

Some progress

- increased renewables capacity (battery storage unit, pump storage hydro plant)
- raw coal combustion ban in Ulaanbaatar and coal briquettes subsidy
- *1 billion trees* initiative
- livestock heads tax implemented since January 2021
- energy losses reduction
- Agricultural sector adaptation: livestock insurance, disasters risk assessment, regulated food exports, ground water wells construction

But more is needed: implementation is lagging, and financing needs to be identified

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Climate Change Policy Options

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Climate Change Policy Options

Mitigation policy design in Mongolia is challenging

- energy and agriculture are critical sectors
- important social and economic considerations
- low private participation in energy, not a lot of alternatives
- vested interests in the coal sector
- carbon pricing policies are widely unpopular throughout the world
- timing is not ideal

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Climate Change Policy Options

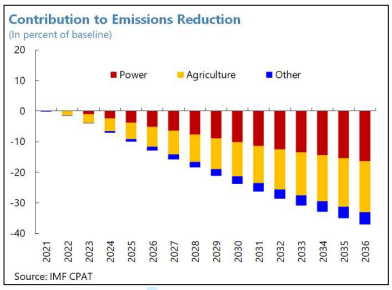
Mitigation scenario (CPAT)

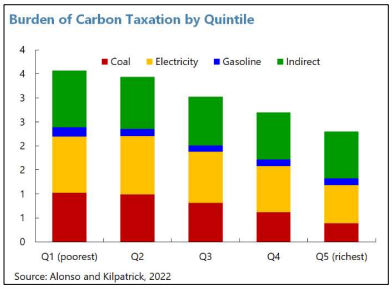
- livestock headcount gradually reduced to 50 million by 2030
- a carbon tax gradually implemented to $10 per ton of CO_2 by 2030

GHG emissions reduction: 24 percent by 2030

Mitigation policy would be regressive

- without productivity gains, livestock headcount reduction would lower herders' income
- a $10 carbon tax would increase coal prices by 66 percent in average and electricity prices by 63 percent





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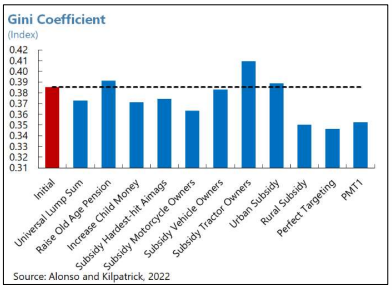
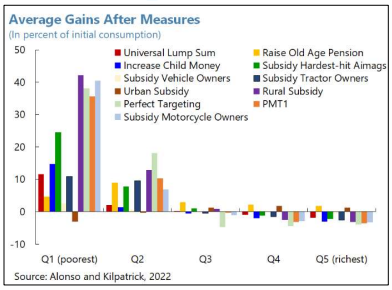
Climate Change Policy Options

Well-designed compensatory measures could reduce inequality

- a $10 carbon tax would raise public revenue by 2.2 percent of GDP by 2030
- transfers to compensate households hit the hardest
- well-targeted programs could significantly reduce GINI coefficient
  - rural subsidy
  - PMT
- limited impact on the richest quintiles





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Preliminary conclusions

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Preliminary conclusions

Livestock headcount should be reduced to sustainable levels

- livestock heads tax
- local governments to focus on sustainable indicators

Energy prices should be raised

- reduce/remove energy subsidies
- gradually implement a carbon/coal tax

Complement mitigation policies with compensatory measures

- revenues from livestock and carbon tax should be used to compensate the most impacted
- measures to increase agricultural sector productivity

Mitigation measures should be part of a broader climate change policy agenda

- adaptation measures: reduce economic and social vulnerability to weather shocks
- diversification away from coal: structural reforms to improve business climate and attract private domestic and foreign investments

The more we wait, the stronger the adjustment

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баярлалаа!
Thank you!

- **How to accelerate the implementation of the Government Climate Change agenda?**
- **How are IFI's supporting the effort? What will be the role of the CCDR?**
- **What is the potential for the renewable sector? (domestic production, exports)**
- **What are the policy options to reduce livestock headcount, other than the livestock tax?**
- **What measures are being considered to reduce energy sector's emissions?**