GEO activities in Mongolia

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GEO ACTIVITIES IN MONGOLIA

- On 3 May 2016, Mongolia became a Member of the Intergovernmental Group on Earth Observations (GEO).
- GEO membership of Mongolia will strengthen not only bilateral and multilateral cooperation activities with other GEO member countries and organizations, but also strengthen cooperation among different Governmental organizations within Mongolia.

GEO ACTIVITIES IN MONGOLIA

- The Government of Mongolia recognizes the Resolution of the Third Earth Observation Summit, which established GEO and affirms its intention to take the necessary steps to implement the Global Earth Observation system of Systems (GEOSS). Mongolia recognizes the importance of GEO and will do every effort to execute the GEO Strategic Plan 2016-2025.

GEO Mongolia National team

Ministry of Nature, Environment and Tourism

Ministry of Agriculture and Food

Ministry of Foreign Affairs

Ministry of Finance

National Agency for Meteorology and Environmental Monitoring of Mongolia

Information and Research Institute of Meteorology, Hydrology and Environment

Information Technology, Post and Telecommunication Authority

Administration of Land Affairs, Geodesy and Cartography

Mongolian National Statistical office

State Inspection Agency

National Development Agency

GEO ACTIVITIES IN MONGOLIA

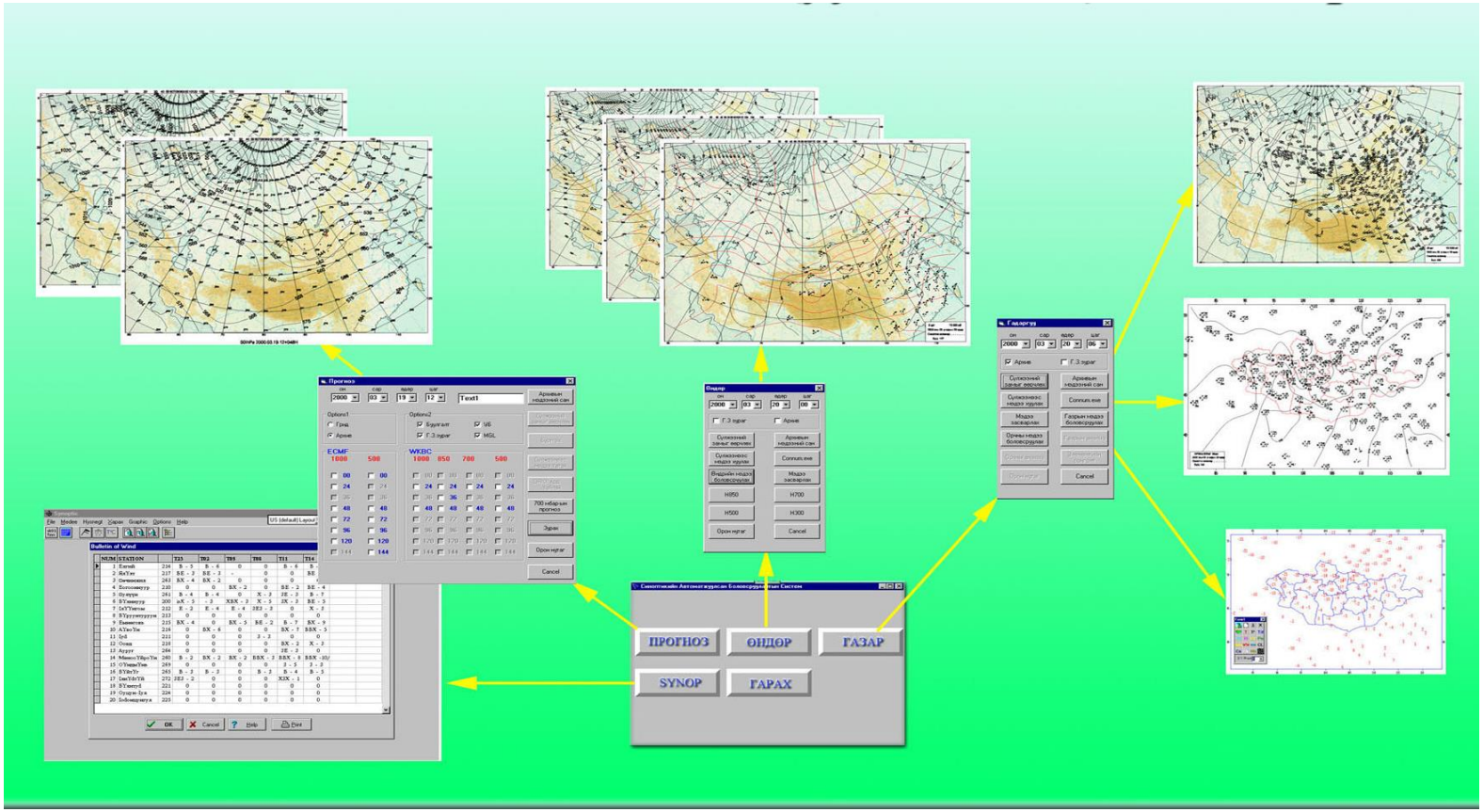
- Mongolia is interested to cooperate in many fields that GEO focuses and mainly in the area, namely climate change, drought and desertification, land degradation, water resource management, natural disaster risk management, biodiversity and ecosystems, environmental monitoring, agriculture etc.

Development program of NAMEM

- “Meteorology and Environment monitoring development program - 2025 has been developed and very soon will be submitted to the Government of Mongolia for an approval. This program will be implemented in two stages 2016-2020, 2021-2025.

Weather forecasting

- **Short-range weather forecast**: 6 hours, 12-hours and 1 day forecasts.
- **Medium-range weather forecast**: 5-days forecast and weekly forecast
- **Long-range weather forecast:** Monthly and seasonal outlooks
- Early warning for severe and hazardous weather and natural disasters



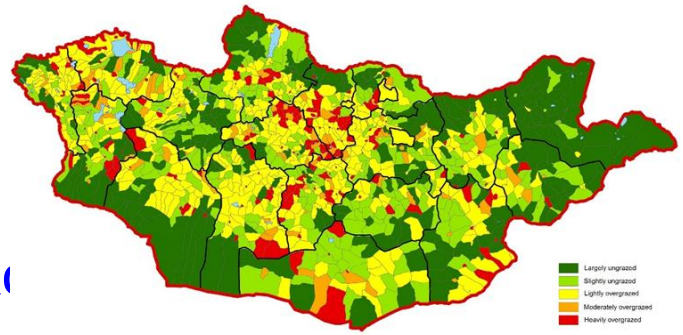
Agricultural meteorology

- Decadal, monthly and seasonal review
- Drought map, every 10 days
- *Dzud* risk map,
- Soil moisture estimation, every 10 days
- Winter-spring season pasture carrying capa
- Rangeland health annual report
- Yield harvesting recommendation

Agrometeorological forecasts

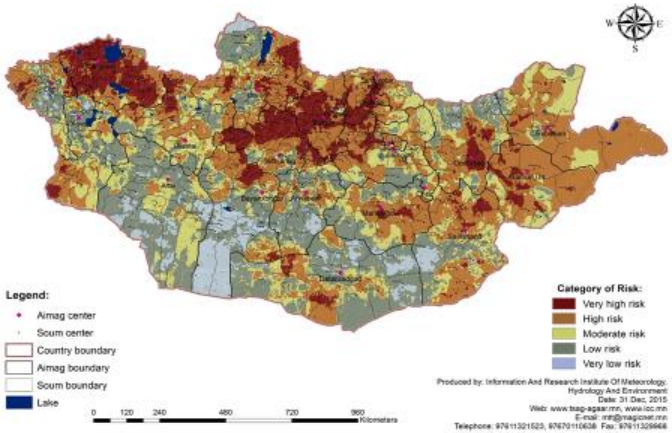
- Soil thawing and freezing date
- Crop yield, and pasture biomass

Pasture carrying capacity, 2015-2016



Source: Information and Research Institute of Meteorology, Hydrology and Environment, 2015

Dzud risk map, 2015



Remote Sensing

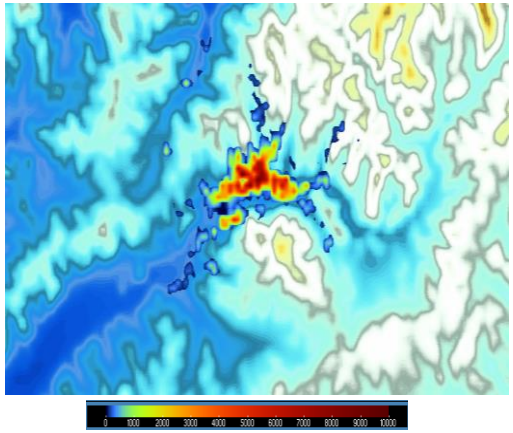
NAMEM receives and analysis real-time data and images from Polar Orbiting Satellites such as the MODIS and NOAA series, Geostationary Meteorological satellite FY2C. The satellite data and Geographical Information System are used to diagnose and determine the actual status of cloud and precipitation, snow and vegetation cover, and wildfires. Satellite data play an important role in weather forecasting and research activities.

Environmental Monitoring

Environmental monitoring laboratories and posts are making regular measurements of air, acid deposition, water, soil quality and radiation dose.

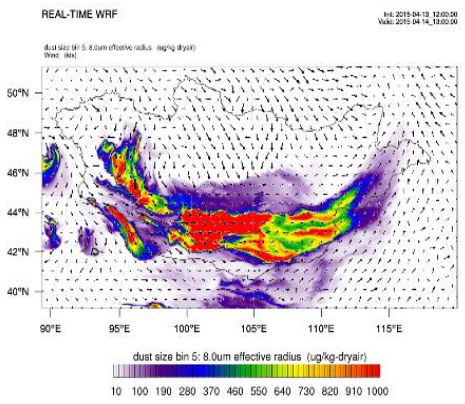
Observation of Air Pollution

Prediction of air pollution

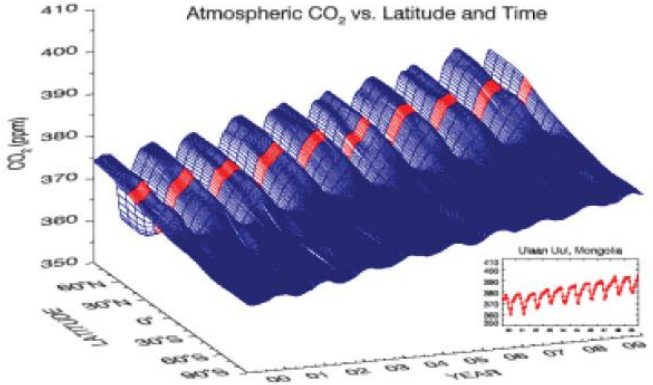


Observation of Dust Storm

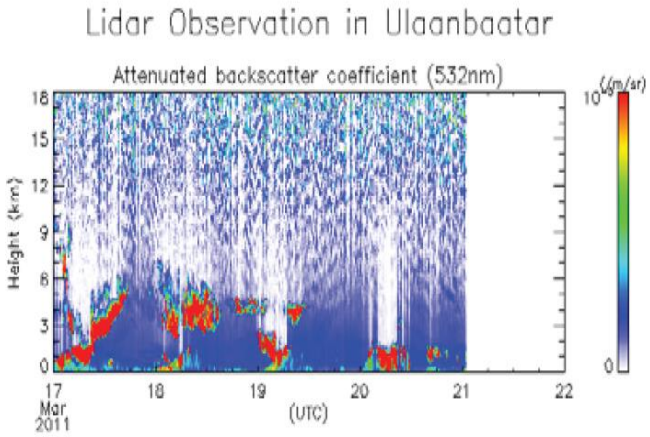
Prediction of Dust Storm



Green house gas trends



Aerosols distribution in Ulaanbaatar measured by Lidar



Air quality

- Hourly air quality index of Ulaanbaatar is publicized through www.agaar.mn, LED display
- Daily air quality level of center of provinces is available on www.tsag-agaar.mn
- Weekly status of air quality in Ulaanbaatar is summarized on every Monday and distributed to Ministry of Environment and Tourism, Ministry of Health, General Inspection Agency, Municipal Inspection Department, Air Pollution Reduction Department, www.agaar.mn, www.tsag-agaar.mn
- Status of air quality during cold season in Ulaanbaatar is defined every month from November to May of following year and distributed to Ministry of Environment and Tourism, Ministry of Health, General Inspection Agency, Municipal Inspection Department, Air Pollution Reduction Department, www.agaar.mn, www.tsag-agaar.mn
- Yearly review of air quality is summarized in second quarter of following year send to Ministry of Environment and Tourism and publicized through www.agaar.mn
- Daily air quality data is archived to www.eic.mn within 15th of each quarter.
- Monthly review of criteria air pollutants in Ulaanbaatar, Erdenet, Darkhan is available on 3rd of every month through National Statistics Organization and www.1212.mn
- Yearly review of registration of air pollution emission sources including home stoves, heat-only boiler, thermal power plants and number of vehicles available 15 February of every month and send to Ministry of Environment and Tourism.

Hydrology

Products

•**Reviews**

• Decade, month and annual reviews on hydrological regime and state of water resources

•Forecasts

• Forecast of complete ice cover and annual ice break (March and October)

• Monthly flow forecast

• Short range forecast for daily water level of rivers, (Flood and droughts) (April to September)

• Forecast of ice depth and phenomena /October to April/

•**Database**

• Hydrological year book

• Hydrological database /since 1940th/

Water quality

- Monthly review of water quality and pollution sources of TUUL River and provinces publicized through www.tsag-agaar.mn
- Monthly review of water quality of rivers, lakes and waste water send to committee of river basin
- Yearly status of surface water quality of Mongolia summarized every 2-year and available on www.tsag-agaar.mn, send to Ministry of Environment and Tourism.
- Yearly review of surface water quality of Mongolia summarized every 2-year and send to Ministry of Environment and Tourism
- Water quality data of rivers and lakes is archived to www.water.local.mn by 15th of each month.
- Statistics of water quality and pollution sources of Tuul River defined every month and sent to Municipal Statistics Department.
- Yearly statistics of water quality data of rivers and lakes are archived to www.eic.mn within 10th of March every year.

Soil quality

- Status of soil quality of Mongolia /Ulaanbaatar and provinces/ is reviewed every December and publicized through www.tsag-agaar.mn
- Yearly review of soil quality is summarized 1st quarter of following year and publicized through www.tsag-agaar.mn
- Soil quality monitoring for assessment of desertification over year and archived to www.eic.mn

Radiation

- Dose capacity of outdoor radiation is available on 10 of every month and distributed to Commission of Radiation Energy, General Inspection Agency, Municipal Inspection Department and www.nea.gov.mn, www.eic.mn
- Total betta activity of precipitation and particles is available on 10 of every month and distributed to Commission of Radiation Energy, General Inspection Agency, Municipal Inspection Department and www.eic.mn

Conclusions

- Increase meteorological and environmental monitoring networks and renovation of technique and technology.
- Establishment of Radar network, installation of AWS in all observational stations and posts.
- Capacity building

Thank you for your attention