Geospatial Information and Services for Disasters (GIS4D)

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ICT and Disaster Risk Reduction Division (IDD)
UNESCAP

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About ESCAP

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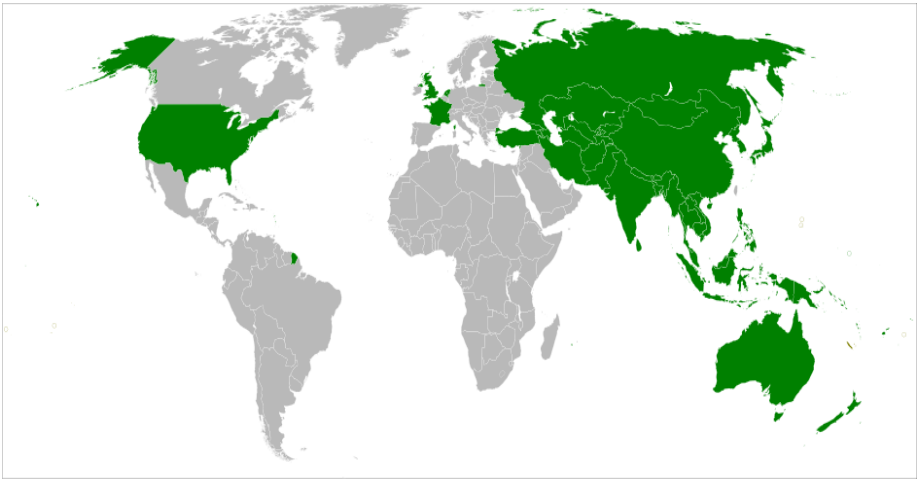

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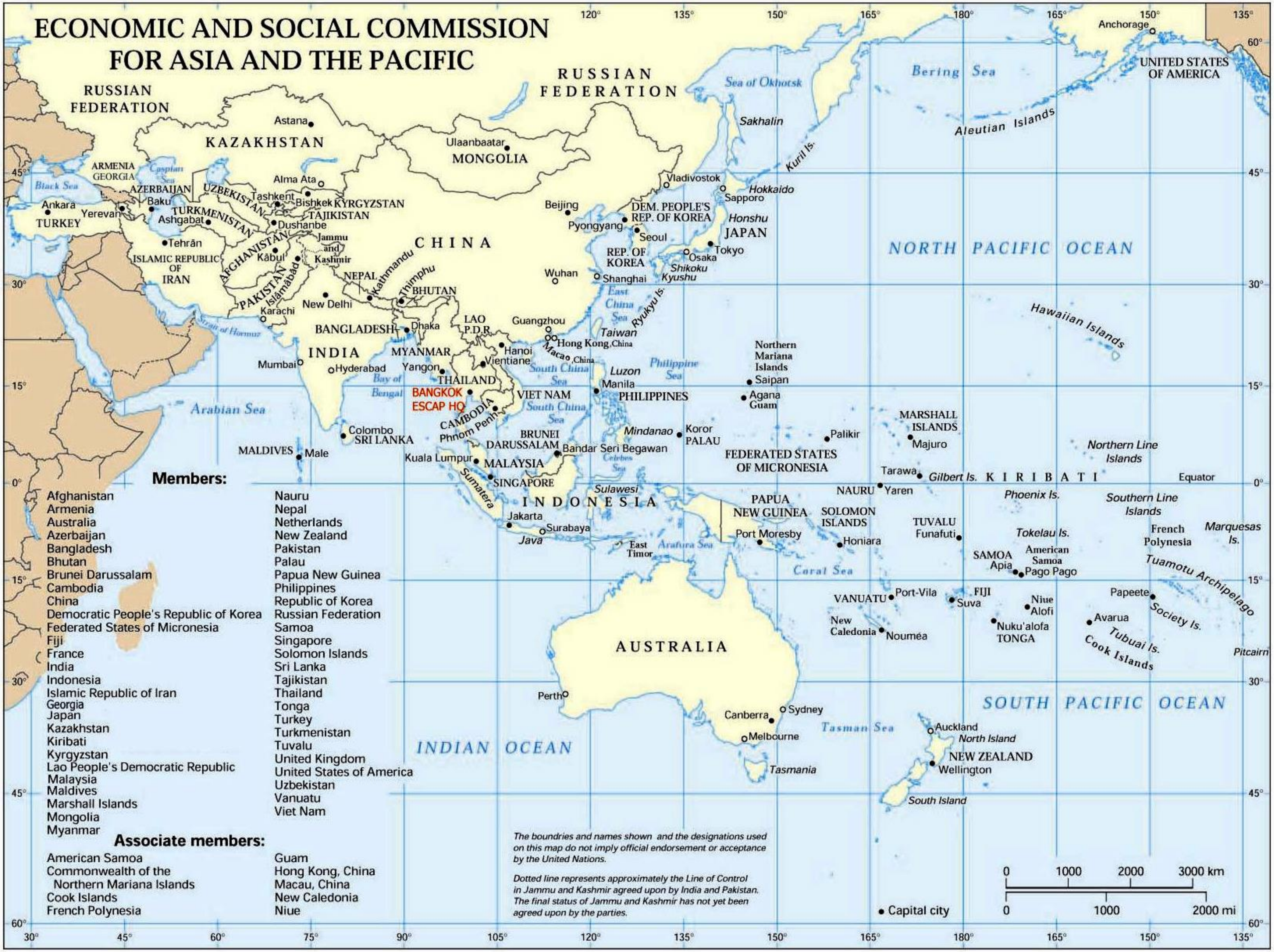
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Macau, China
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The boundries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.
• Capital city
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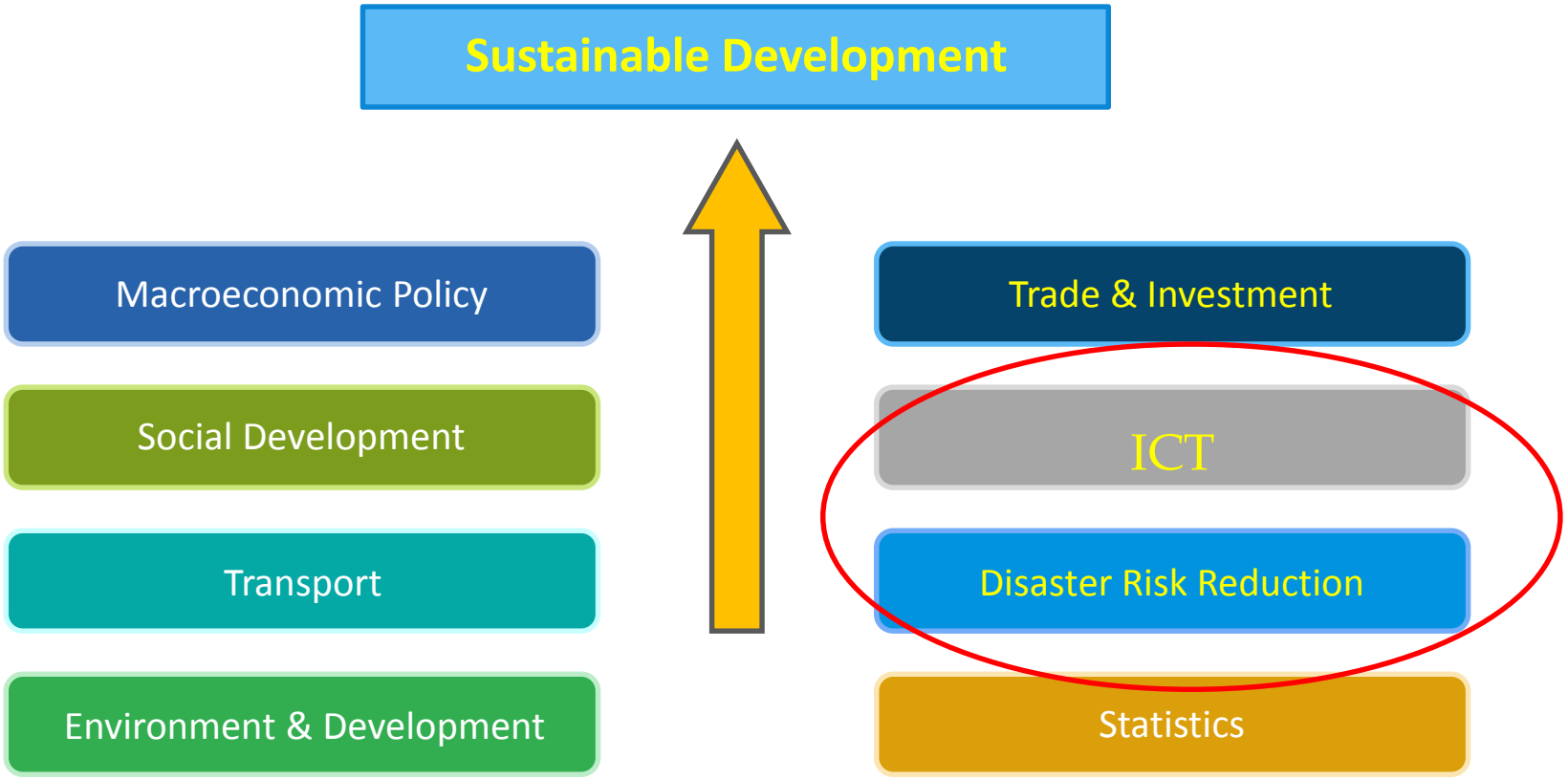
ESCAP Areas of Work



What is ESCAP Doing?

1. Regional intergovernmental platform for sustainable development (Resolutions)

2. Policy and norm setting to address sustainable development challenges (disaster, climate change)

3. Regional knowledge hub for sharing know-how, experience and practices

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What IDD Doing?

1. Asia Pacific Plan of Action for Space Technology Applications for Sustainable Development 2018-2030
2. Policy and analytical research
3. Geospatial technology applications and data
4. Disasters including Drought
5. Support to disaster-affected countries
6. Secretariat of RESAP

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Asia Pacific Plan of Action 2018-2030

1. Developing the Asia Pacific Plan of Action for Space Technology Applications for Sustainable Development 2018-2030
2. Review at RESAP meeting on 9-10 October 2017
3. Present the draft to the Committee on DRR on 11 October
4. Present to the Ministerial Conference in 2018 (tentative)

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Draft Key Framework of AP Plan of Action 2018-2030

1. Spatial data infrastructure development
2. Geospatial technology applications and data for sustainable Development Goals (SDGs)
   - City, Disasters, Natural Resource, Climate Change….
3. Agriculture and Drought
4. Linkage with global framework and regional integration
   - Strategic Framework on Geospatial Information and Services for Disasters 2016-2030

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Policy and Analytical Research

1. Gaps and needs on early warning systems, geo portal and geo database in the Pacific region
2. Support mid-term work plan
3. Regional guidelines on rapid assessment of damage and losses (with SAARC)
4. SOPs for utilizing space based data during disasters (with ASEAN)
5. Handbook for rapid impact assessment

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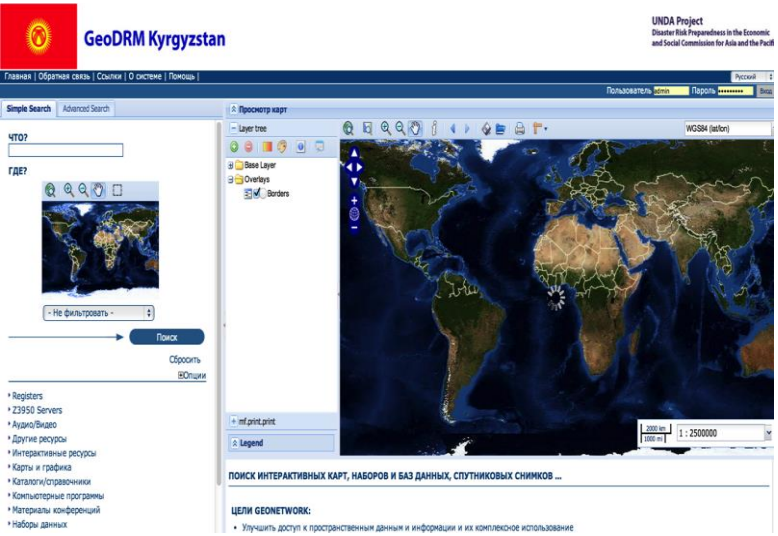
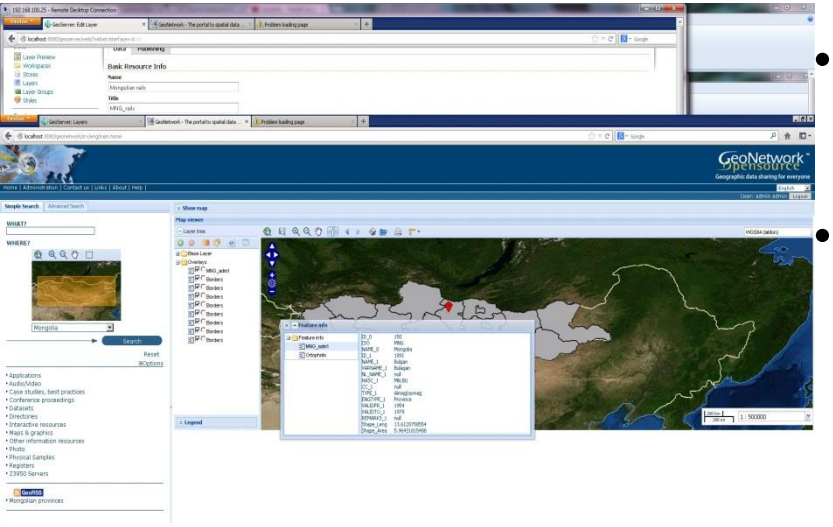
Geospatial Technology and Data





Geospatial Portals and Database

- Open sourced geo-referenced information systems for disaster risk reduction(Geo-DRM)
- Space-derived data + ground socio-economic data = monitoring and early warning
- Evidence-based approaches for right decision making
- Pacific island countries, Mongolia, Philippines…

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Regional Drought Mechanism

- **Data** from multiple earth observation satellites
- **Products** – Agricultural drought indices
- **Services** – Immediate: seasonal forecasts, *in-season* crop/vegetation monitoring and early warning;
- next step: crop forecasting, agricultural land use/land cover changes for sustainable agriculture and efficient water management and water accounting

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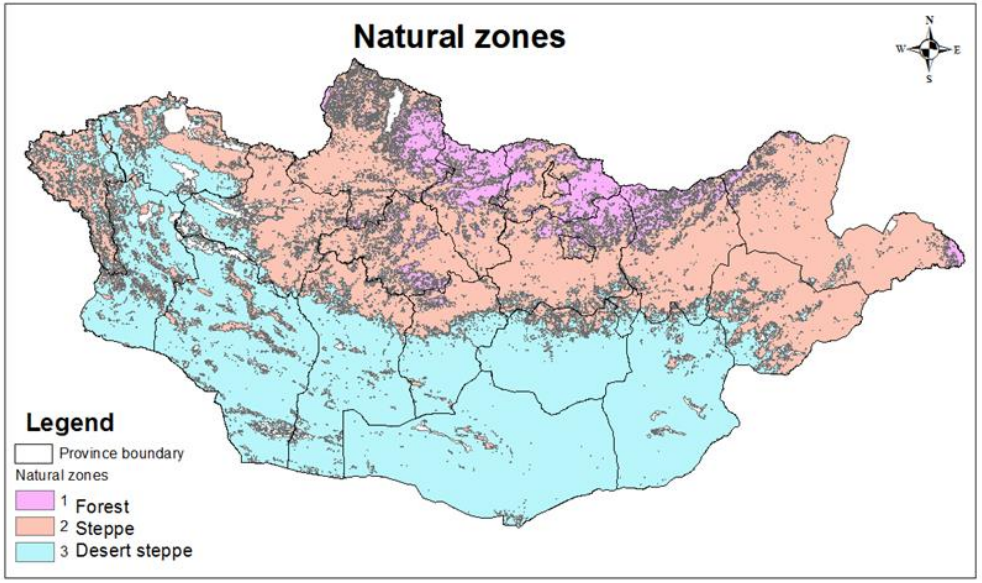
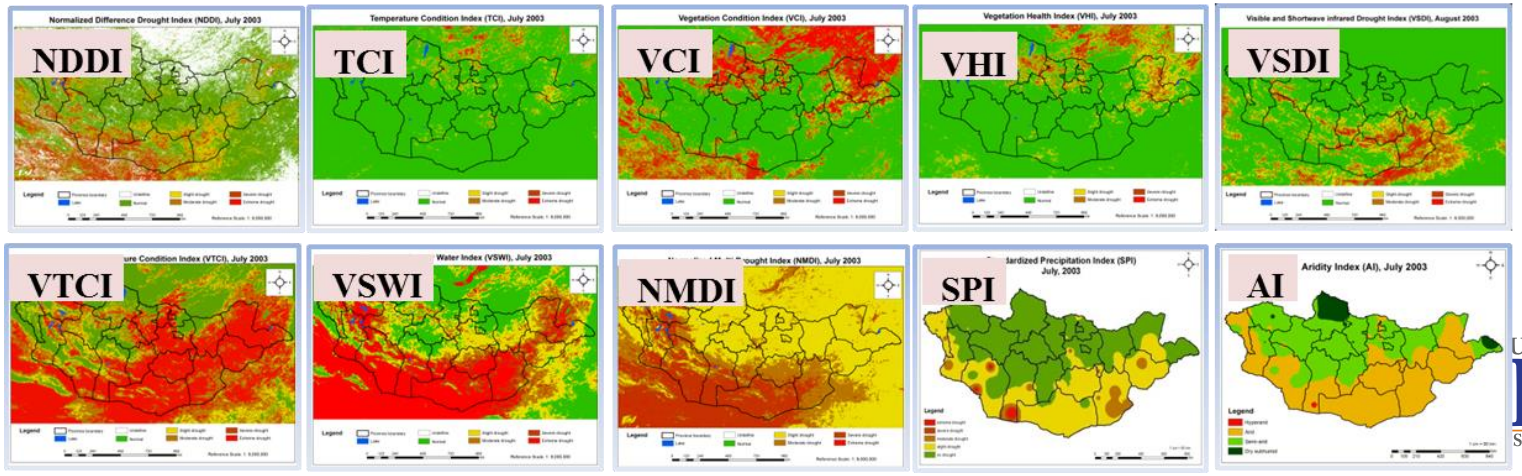
Drought: Mongolia Case

Drought mapping was made by combining 3 agro-ecological regions which has more than 50% correlation including forest, steppe, desert steppe. The correlations between RS index and Drought index calculated by meteorological parameter were different in various natural zones separately.





A number of indices were tested for each region

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Drought: Mongolia Case

- Capacity building:
  - Training
  - Work with Chinese Academy of Sciences (RADI)
- DroughtWatch system built by RADI for Mongolia:
  - Data management
  - Data preprocessing
  - Indices calculation
  - Drought monitoring
  - Statistics and analysis
  - Automation
- Field verification of tool

A number of pilot countries: Afghanistan, Bangladesh, Cambodia, Kyrgyzstan, Mongolia, Myanmar, Nepal, Sri Lanka

Supporting Regional Service Nodes: China, India, Thailand (possibly Australia)

Support to Disaster-affected Countries

Provision of satellite imagery

- Provide near real time satellite images to disaster affected country, region and communities
- In collaboration with UN Charter, UNOSAT, UNITAR

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RESAP Secretariat

- Regional Space Applications for Sustainable Development (RESAP) since 1994
- 21th intergovernmental consultative Committee (ICC) of RESAP, 9-11 October, Thailand
- 5th Session of the Committee on Disaster Risk Reduction, 10-12 October, Thailand

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Capacity Building

Project in Implementation

Early Warning Systems and Geospatial Data in the Pacific

Development of geospatial indicators to measure the progress of disaster-related SDGs implementation in Central Asia

Project on drought

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Project for EWS in Pacific

Project on Early Warning Systems and Geospatial Data in the Pacific

Key Components

1. Gaps and needs analysis
2. Two intensive training programmes in Thailand and Indonesia
3. Pilot projects in countries
4. Pacific strategy on knowledge hugs for early warning systems
5. E-learning platform

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Project for Geo indicator in Central Asia

To develop geospatial indicators to measure the progress of disaster-related SDGs implementation

Focusing on;

1. Mitigation, rather adaptation
2. Highlight governments' efforts to reduce disaster risks, rather than results such as death toll and economic loss
3. Sending out positive messages that we are not forgetting government's efforts to reduce risks, despite big disaster damages
4. Measure progress, rather than static situations

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Project for Geo indicator in Central Asia

1. First expert meeting: 10 October 2017, Bangkok
   - Feeding draft presented by three expert agencies
   - Three partners institutions in Italia, Japan and Korea

2. Second expert meeting: 8-9 November 2017, Kazakhstan

3. Third expert meeting: early 2018 in Central Asia

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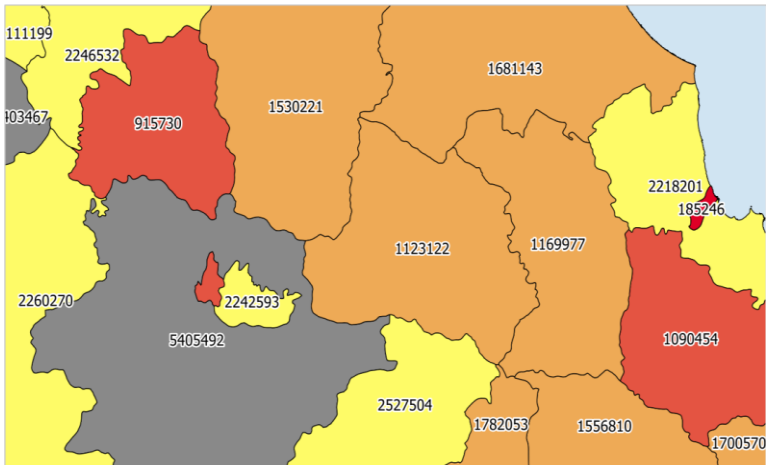
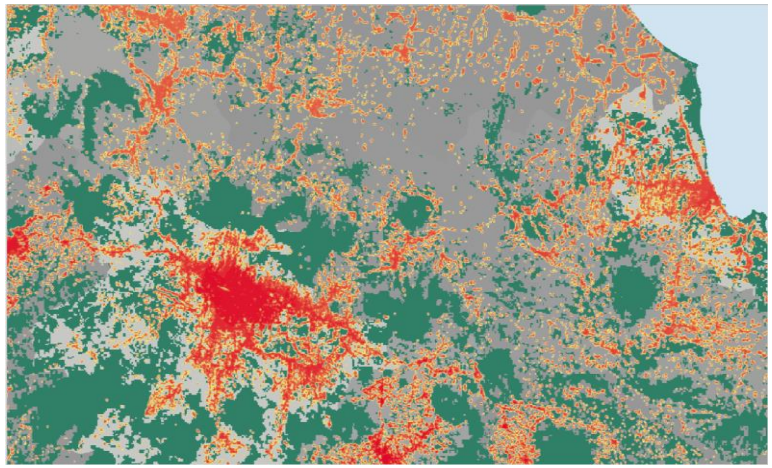
Research: Population Census

- Applying census at available geographic scale (e.g municipalities) for gridded mapping
- In several countries (and more and more): data are available by PSU (Primary Sampling Units)





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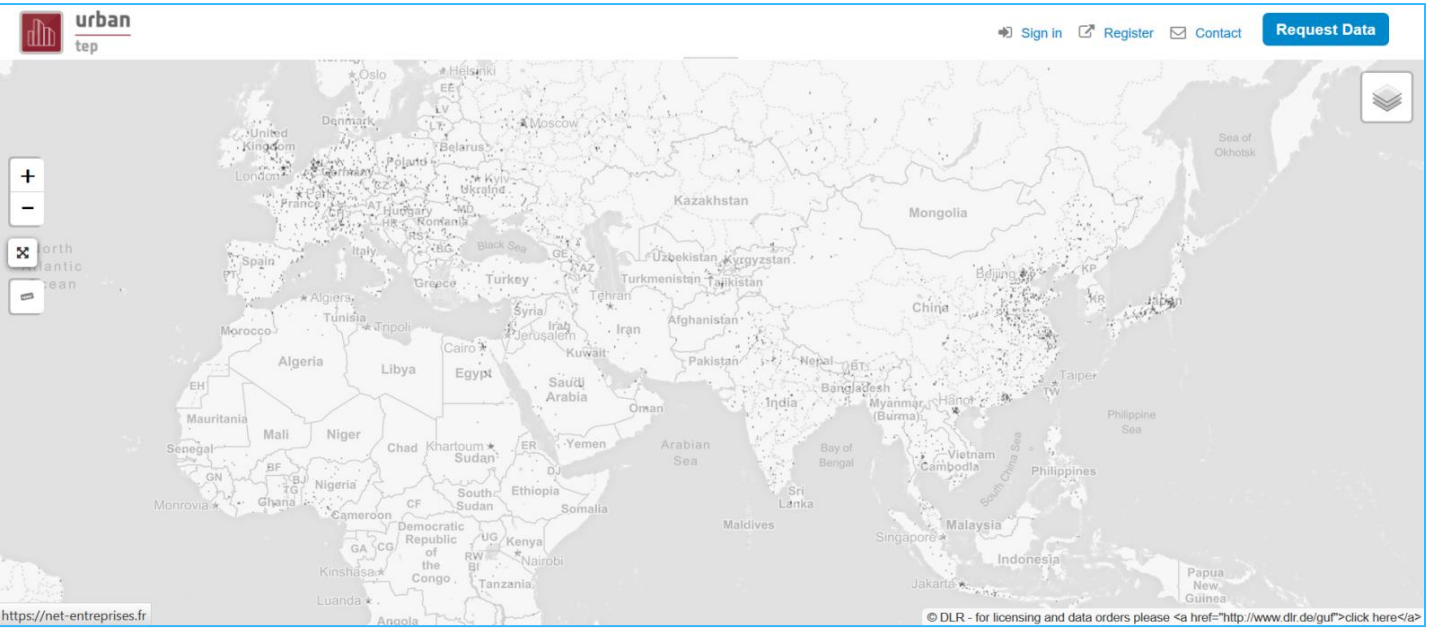
A new data source: Global Urban Footprint (GUF)

- GUF by the German Aerospace Agency
- DLR from radar satellite images of 2012, using the European Space Agency TEP cloud computing system.
- Data are sensed by TerraSAR-X and TanDEM-X radar satellites and images, acquired at 3m ground resolution. Built-up areas pixels are derived at 12 m resolution and generalized at ~80m and now 30 m).



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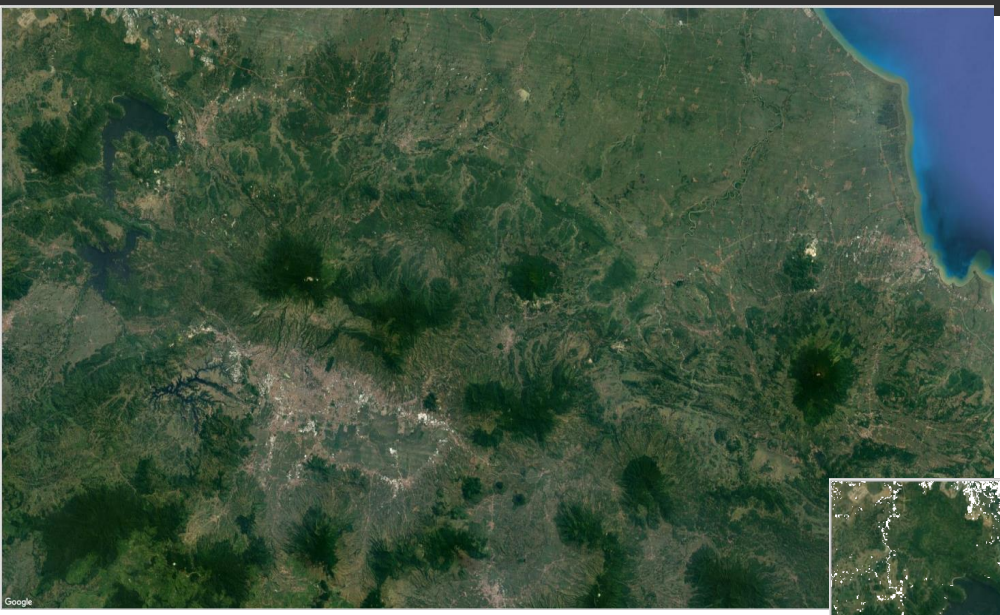
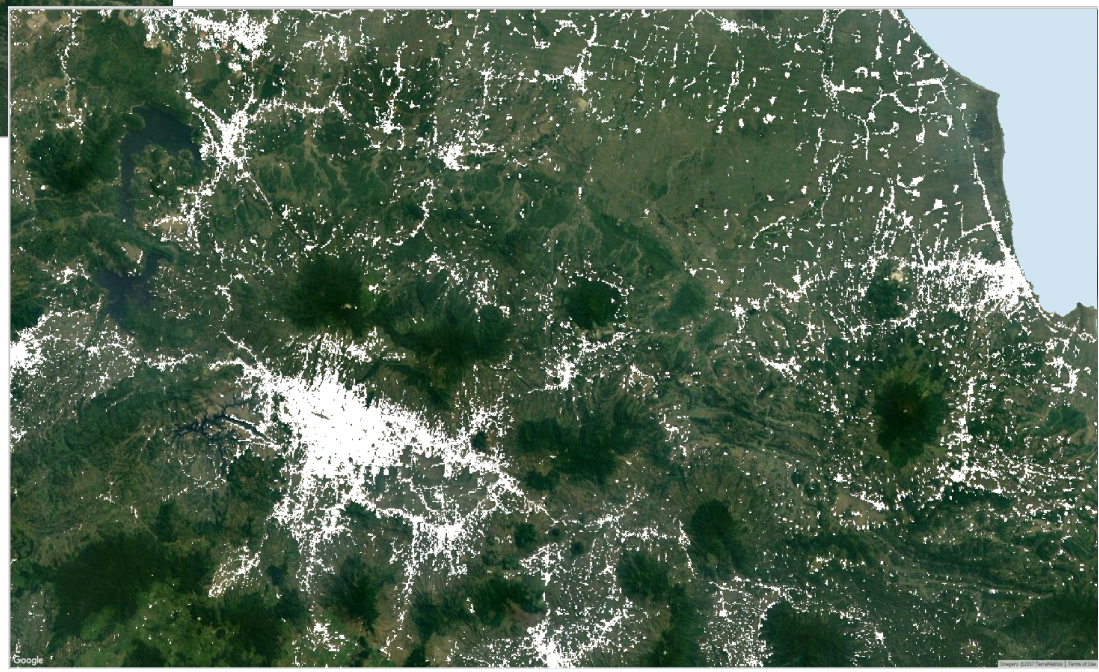
Google vs GUF





Call for Partners and Partnerships

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Thank you very much!

Tae Hyung KIM

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