



20th UNRCC-AP and UN-GGIM-AP



Addressing Land Sector Opportunities with geospatial information

5-10 October 2015
Jeju Island, Republic of Korea

GANKHUYAG Radnaabazar,
Head of Cadastre Division



UN-GGIM-AP

Regional Committee of United Nations
Global Geospatial Information Management
for Asia and the Pacific

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CONTENT

- BRIEF INFORMATION of LAND USE
- UNDERSTANDING of LAND SECTOR
 - Engineering research data
 - Assessment
 - Land use planning
 - Cadastre
 - Monitoring
- OUTCOMES





BRIEF INFORMATION OF LAND USE

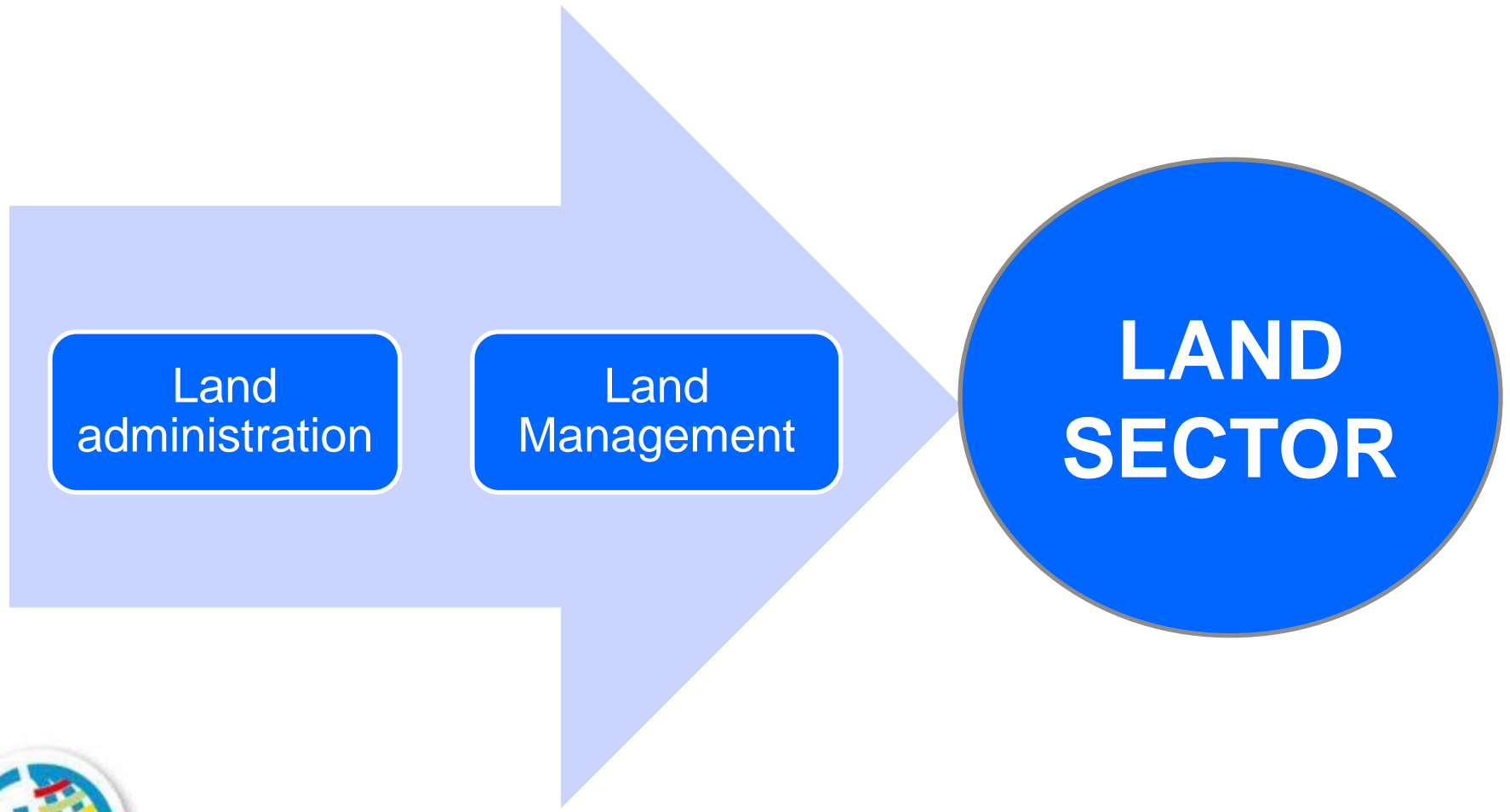
- Land locked country
- Between Russia and China
- Territory: 156 ml hectare
- Low Population Density,
- 3 million people.
- Land use:
 - Pasture/Nomadic culture
 - Mining sector /cool, gold, etc /

| No | Land use classification | Area, thousand hectar | % |
|----|-------------------------------|-----------------------|--------|
| 1 | Agricultural | 115008.6 | 73.53 |
| 2 | Urban and settled | 712.1 | 0.46 |
| 3 | Road, infrastucture | 454.8 | 0.29 |
| 4 | Forest | 14320.5 | 9.16 |
| 5 | Water | 686.7 | 0.44 |
| 6 | Land under state special need | 25228.9 | 16.13 |
| | Total | 156411.5 | 100.00 |



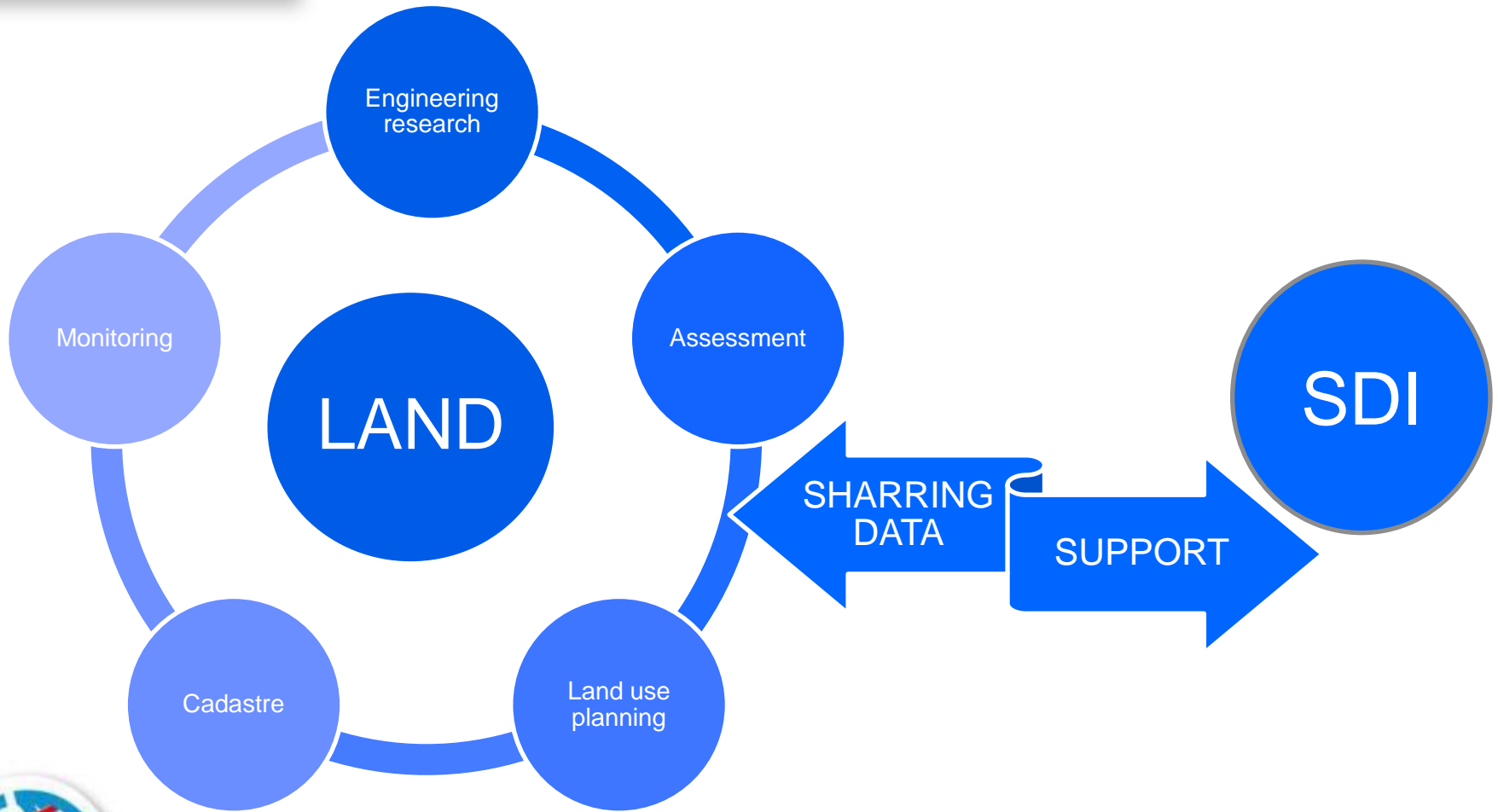


Land Sector: Concept





Land Sector: Concept





Engineering research data

Selected area

/large scale/

Province level

/medium scale/

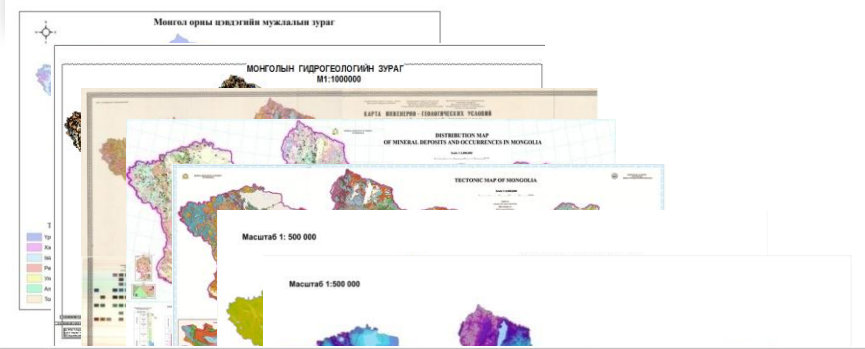
Country level

/small and medium scale/





Engineering research data



| | |
|----------------------------------|-------------|
| Land Use map | 1:100 000 |
| Vegetation map | 1:100 000 |
| Forest map | 1:100 000 |
| Soil map | 1:100 000 |
| Annual air temperature map | |
| Precipitation map | |
| Air humidity map | |
| Total sun ray map | |
| Hydrological map | 1:500 000 |
| Hydrogeological map | |
| Geomorphological map | |
| Geological map | |
| Mineral resources map | 1:1 000 000 |
| Engineering geological map | 1:1 500 000 |
| Geocryology map | |
| Quaternary geological map | |
| Tectonic and Neo Tectonic | |
| Seismological map | |
| Historical and Archeological map | |





Assessment

SUITABLE for CROPLAND

SUITABLE for
URBANIZATION

SUITABLE for PASTURE etc.
1500 LAND USE TYPE

CURRENT LAND USE ASSESSMENT FOR
FUTURE DEVELOPMENT

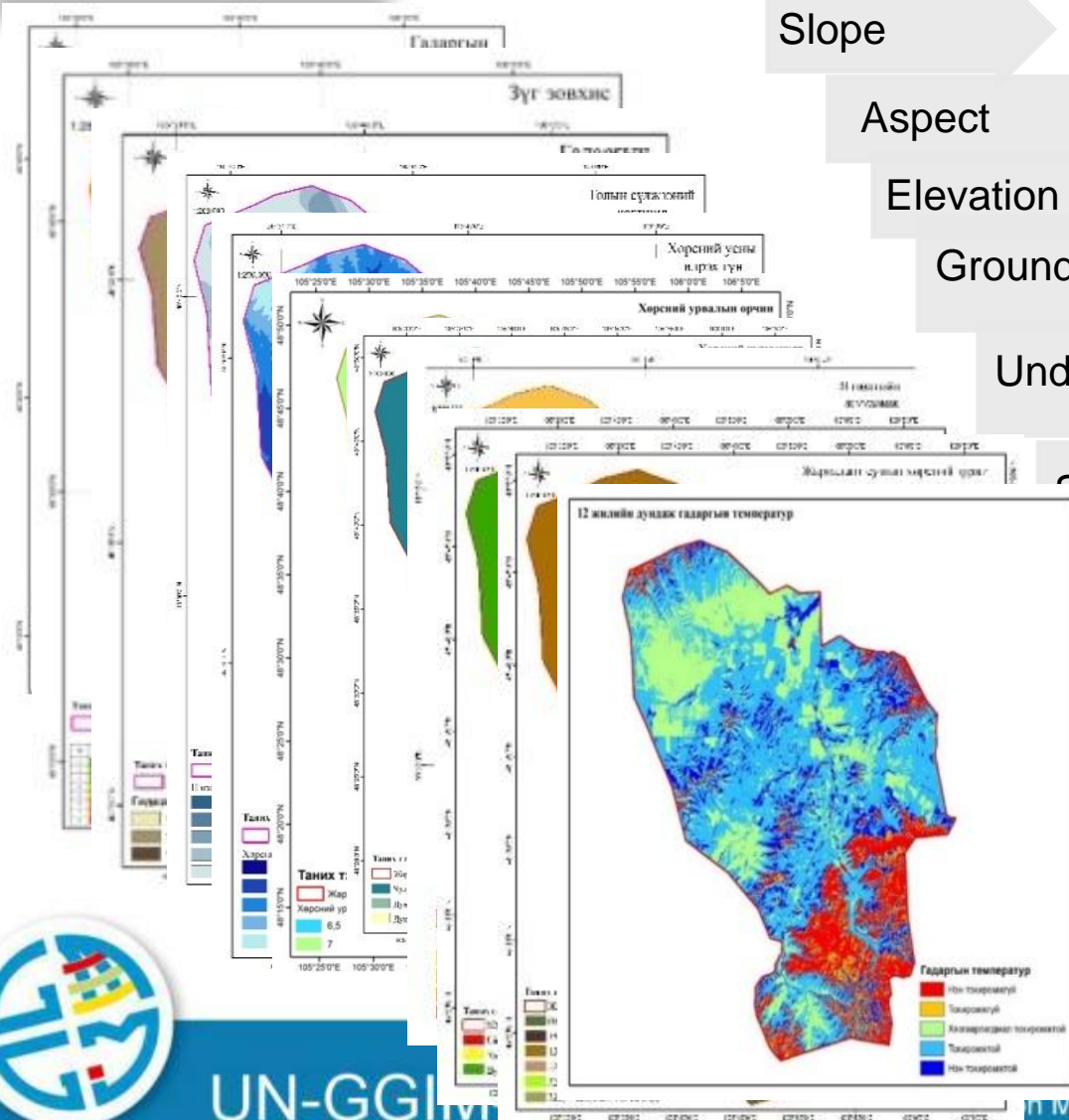
NEEDS ASSESSMENT USING SOCIAL AND
ECONOMIC DATA

LAND SUITABILITY ASSESSMENT BY EACH
LAND USE TYPE

Engineering research data



LAND SUITABILITY ASSESSMENT /In case Jargalant municipality-For CROPLAND/



Slope

Aspect

Elevation

Ground Water network

Underground Water

Soil range

Rock type

Soil Fertility

Soil mechanical content

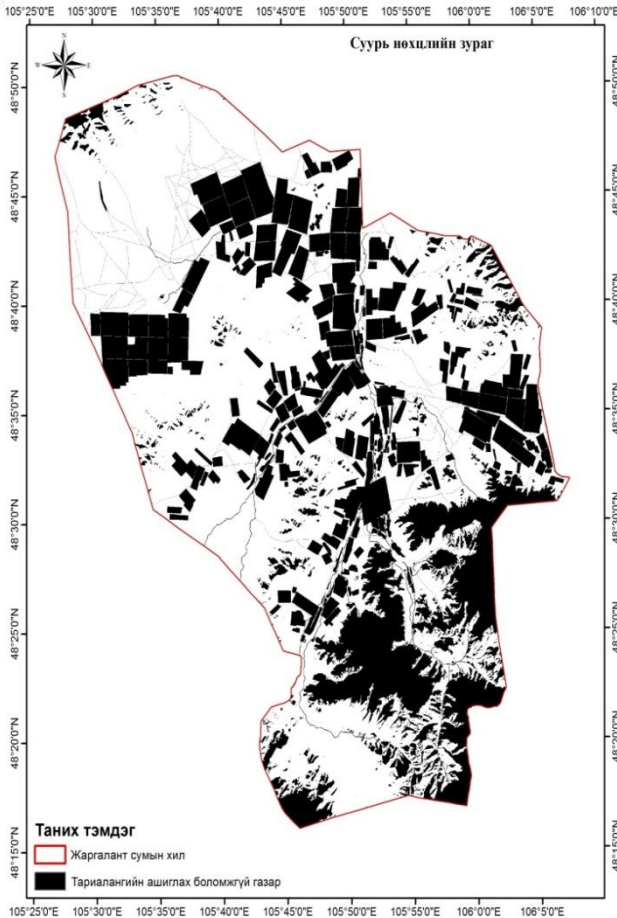
Soil type

Climate condition





LAND SUITABILITY ASSESSMENT /In case Jargalant municipality-For CROPLAND

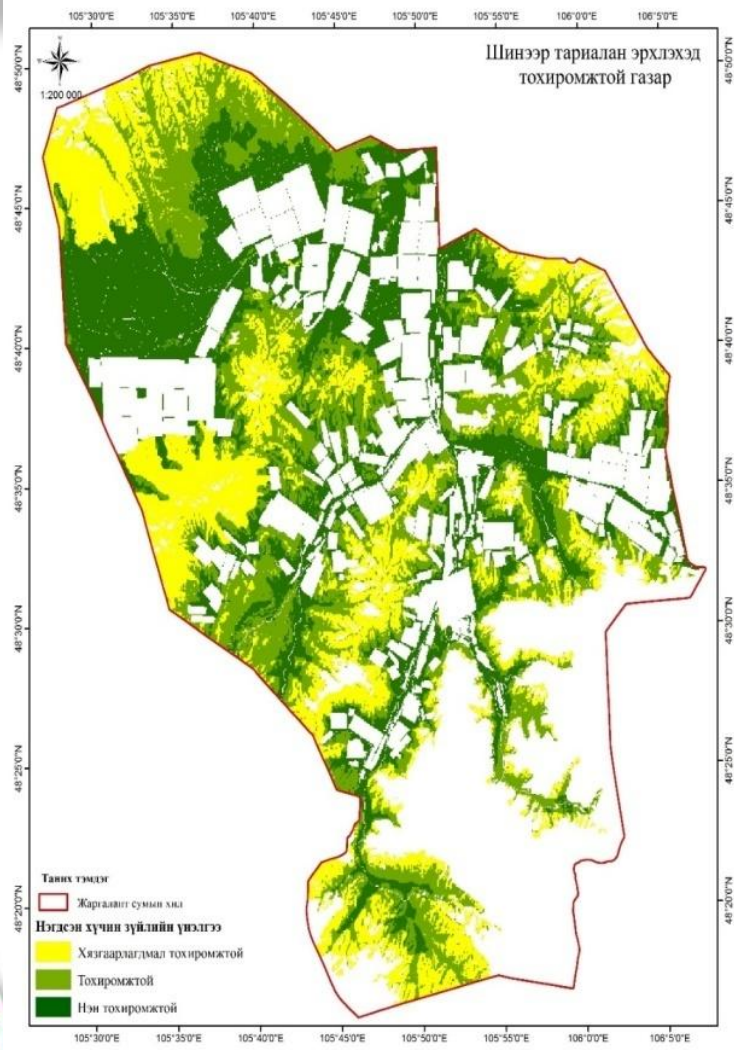


Constraint map

- Forest
- Urban area
- Land under Infrastructure
- Cropland
- Mining area



LAND SUITABILITY ASSESSMENT /In case Jargalant municipality-For CROPLAND



Result:
Suitable for
cultivation-59.4 %

- 20,1% High suitable
- 20,5% suitable
- 18,8% limited suitable



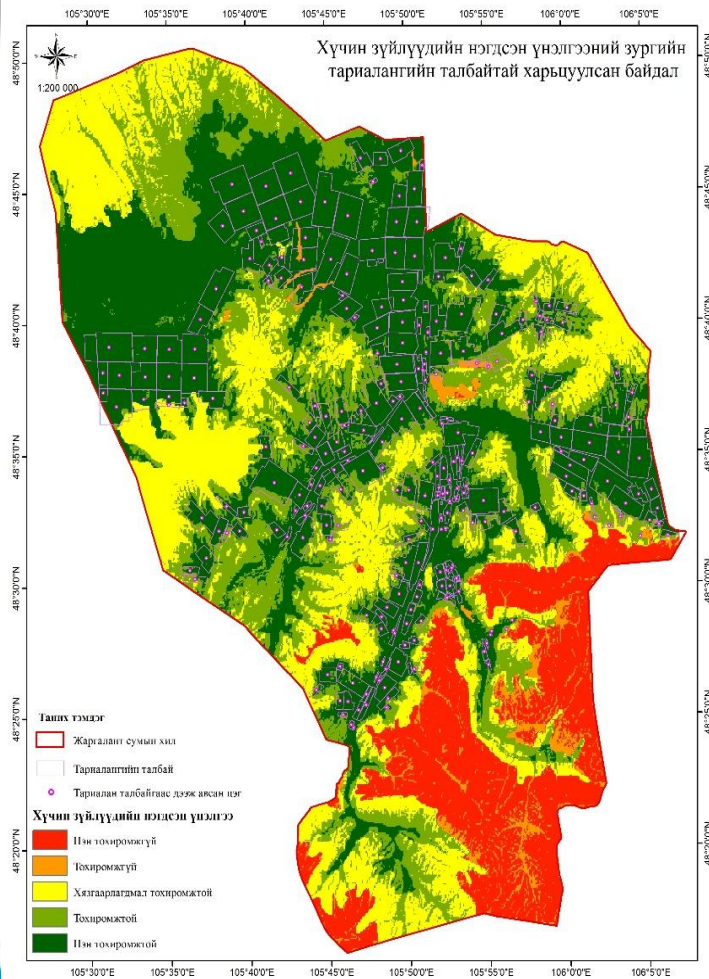


LAND SUITABILITY ASSESSMENT

/In case Jargalant municipality-For CROPLAND

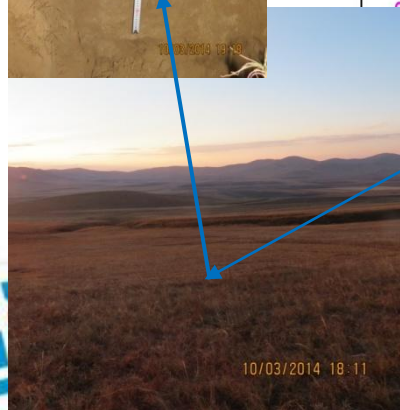
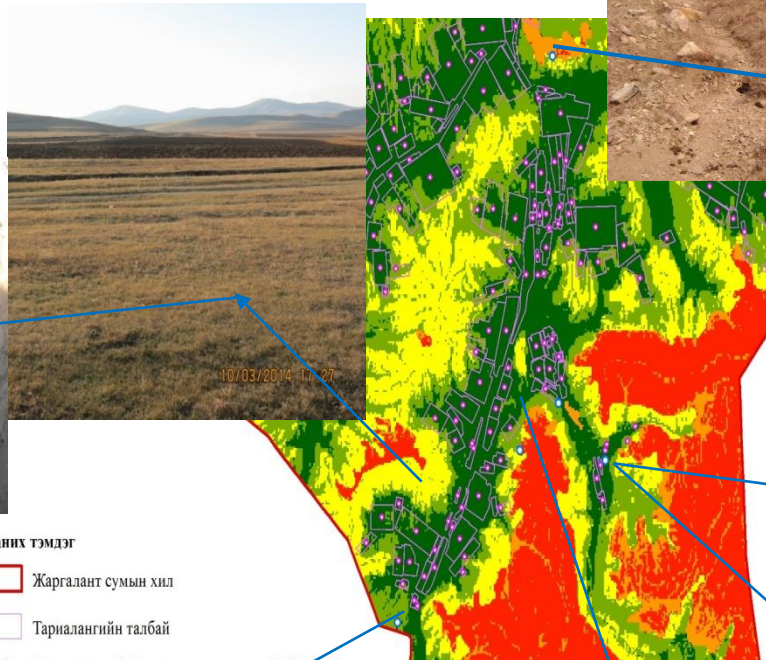
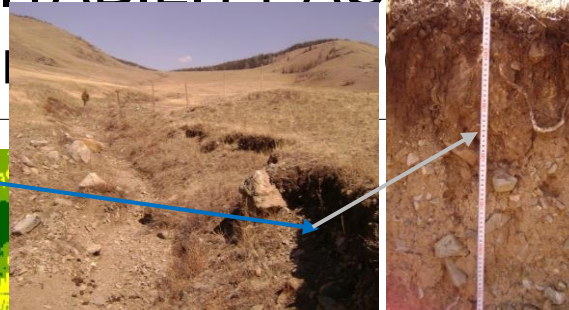
Assessment existing cropland

| № | Criteria | Total number existing cropland | % |
|--|------------------|--------------------------------|------|
| 1 | More suitable | 245 | 91,1 |
| 2 | Suitable | 21 | 7,8 |
| 3 | Limited suitable | 1 | 0,4 |
| 4 | Non suitable | 2 | 0,7 |
| Total number existing cropland: | | 269 | |





LAND SUITABILITY ASSESSMENT /In case Jargalant municipality



Таних тэмдэг

- Жаргалант сумын хил
- Тариалангийн талбай

Тариалан талбайгаас дээж авсан цэг (1980-1990 онд хийж, 2014 онд хөрсний зүсэлт хийж, дээж авсан)

Хөрсний зүйлүүдийн нэгдсэн үнэлгээ

- Нэн тохиромжгүй
- Тохиромжгүй
- Хязгаарлагдмал тохиромжтой
- Тохиромжтой
- Нэн тохиромжтой



Land Use Planning

Crop land

Livestock sector

Industry and mining etc.

GENERAL and Current year land use plan at all level

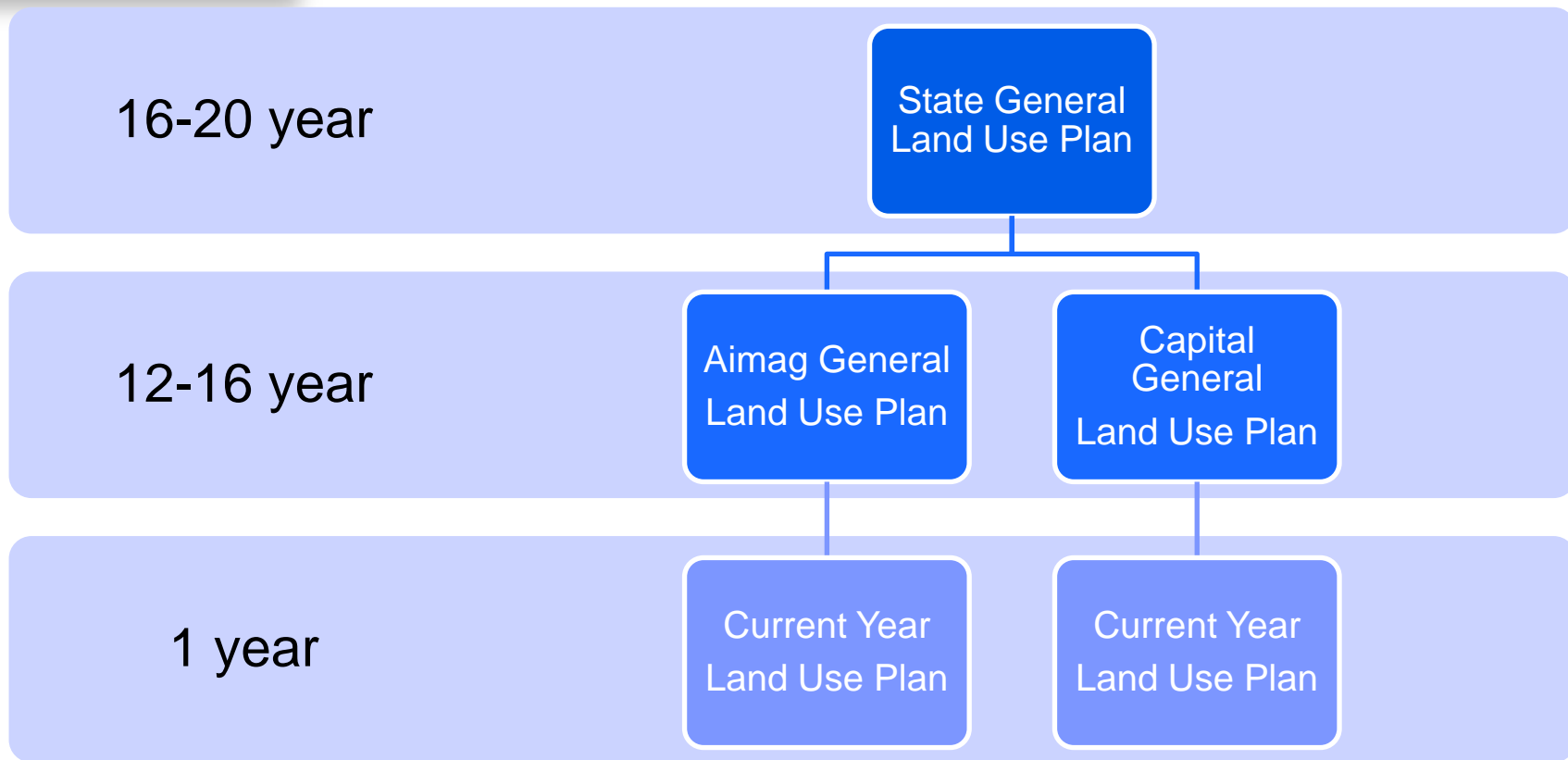
NEEDS ASSESSMENT USING SOCIAL AND ECONOMIC DATA

LAND SUITABILITY ASSESSMENT BY EACH LAND USE TYPE

Engineering research data



Land Use Planning

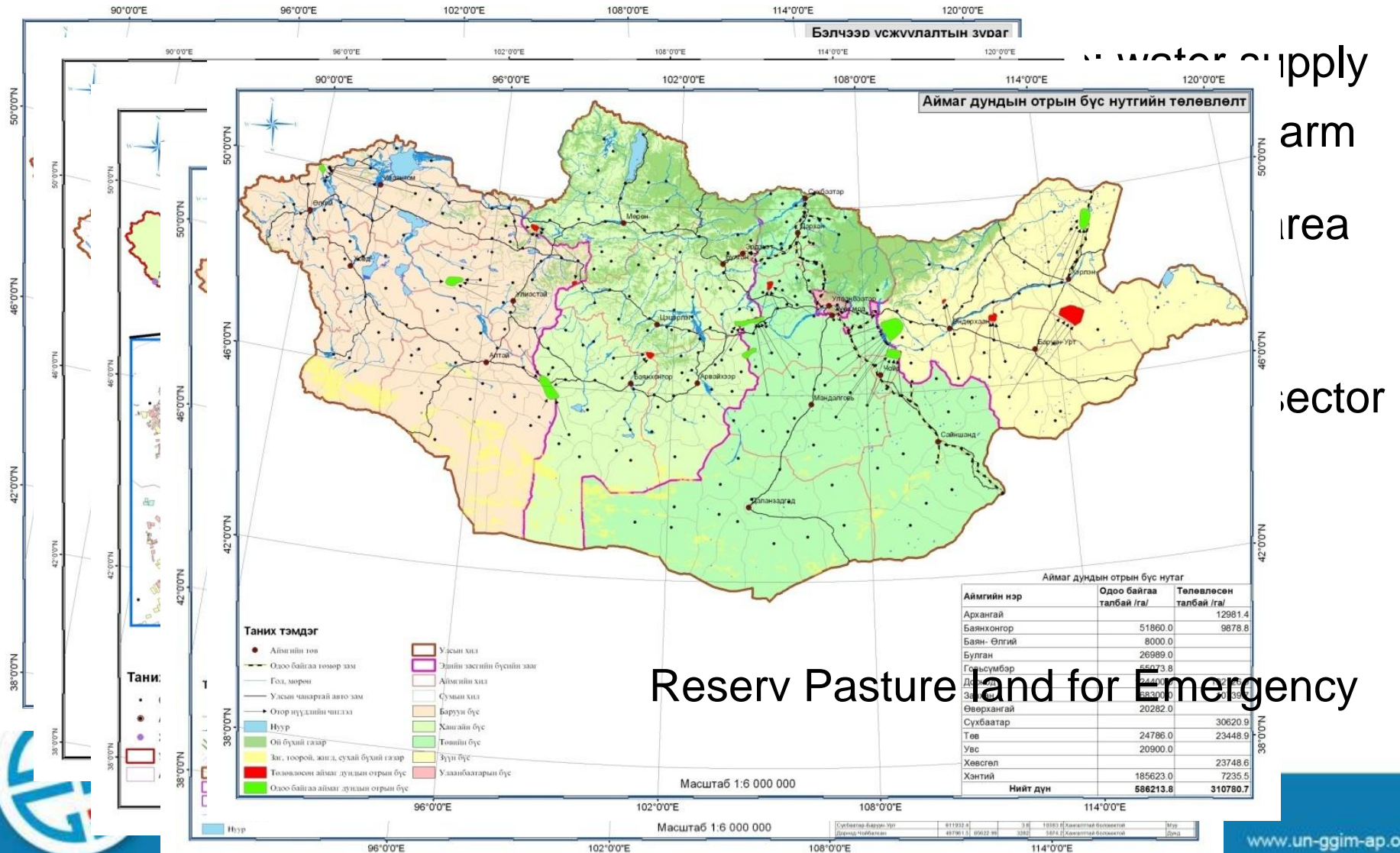


- SGLUP-in 2003 Central Government adopted6
- Updating using new Land Sector Development Concept: 2013-2016





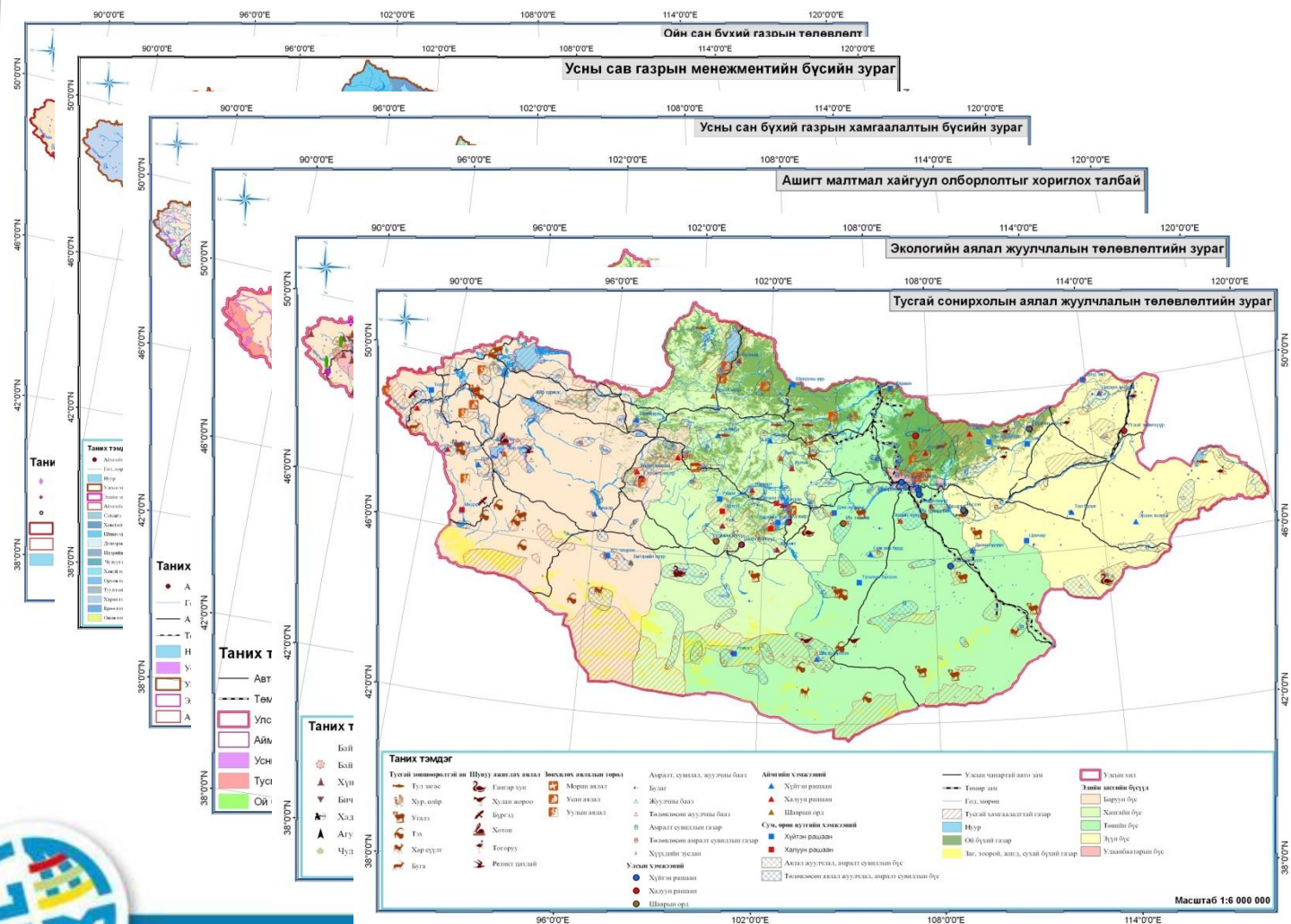
STATE GENERAL LAND USE PLAN /draft/





STATE GENERAL LAND USE PLAN

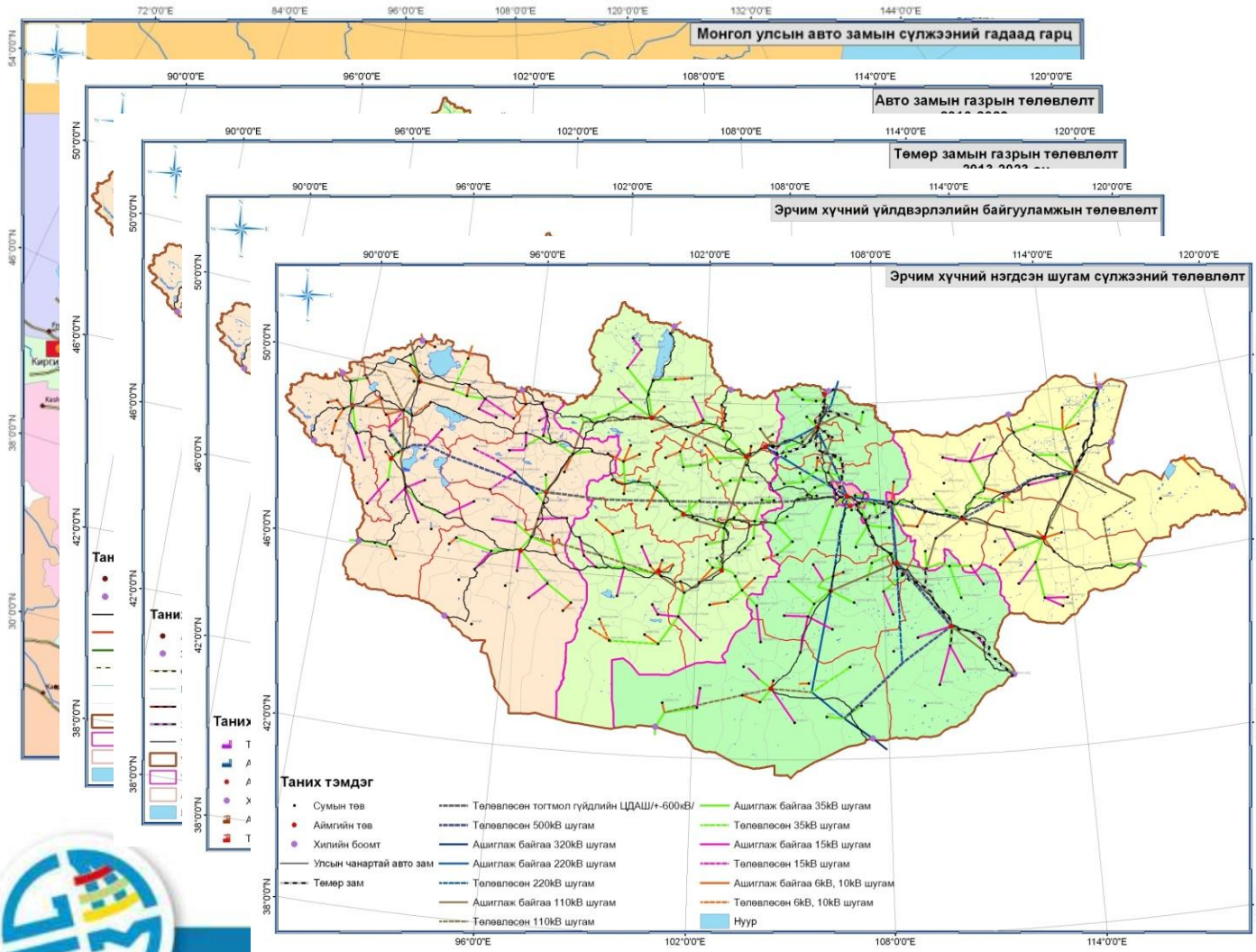
/draft/





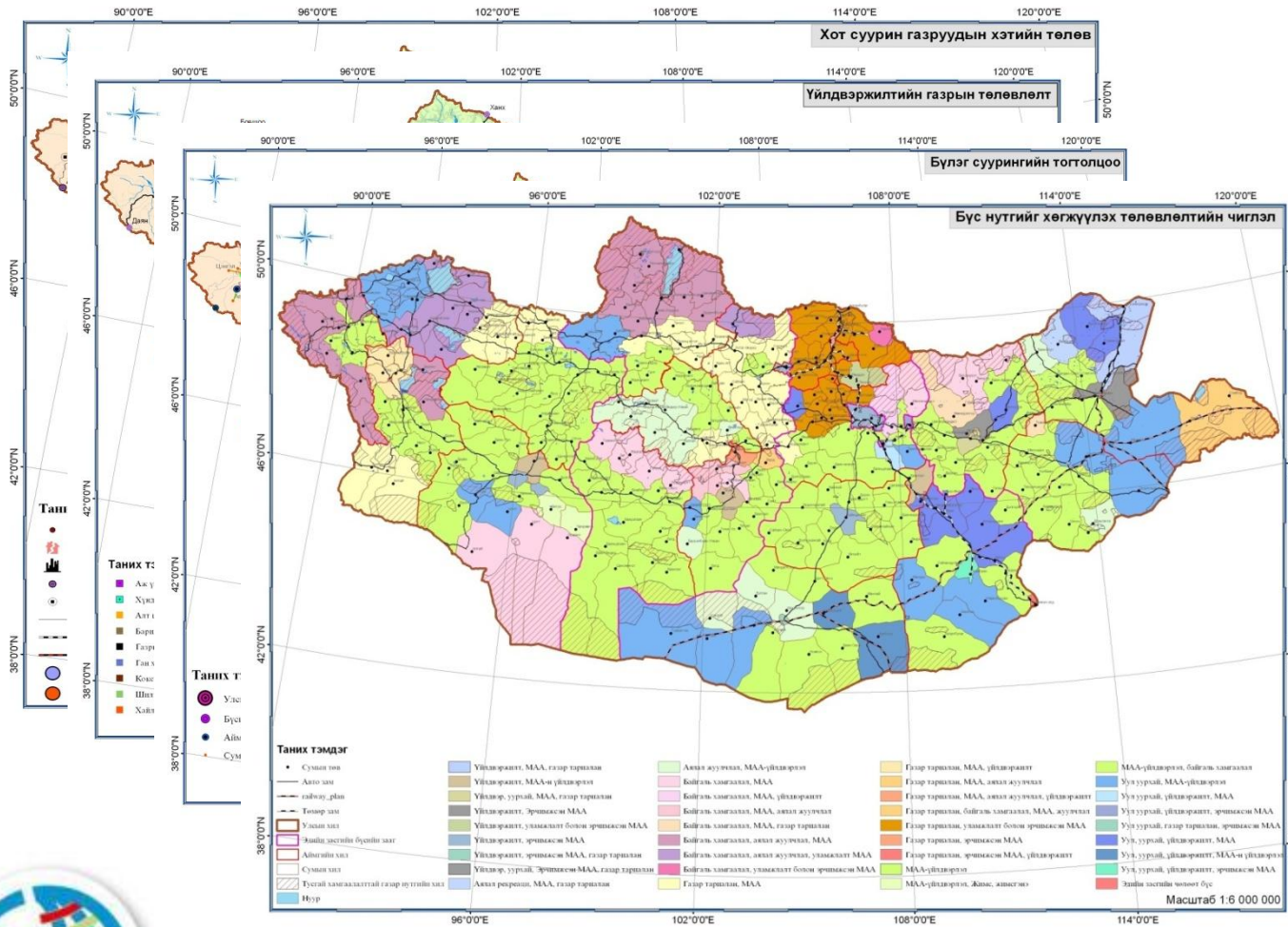
STATE GENERAL LAND USE PLAN

/draft/





STATE GENERAL LAND USE PLAN /draft/





Cadastre

standardized digital data

Network, hardware, software

Human resources

Centralized Cadastre Database
/daily updating system/

Land Ownership, Land Possessors, Land Users

Allocate land to **CITIZENS** and **LEGAL ENTITIES**

Current year land use plan at all level

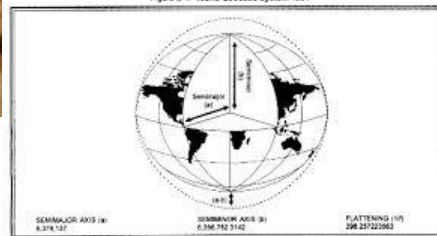


Cadastral



- **Project name:** Updating all existing Cadastral maps and Registry data, scanning all parcel documents into digital format
- **Duration:** 2013.09.27-2017.06.30
- **Framework:** 21 aimags/province 330 soums/municipality
- **Result:**
 - Cadastral maps
 - Registry data in digital format
 - Parcel paper documents at local office
 - Parcel digital documents

Figure C-1. World Geodetic System 1984





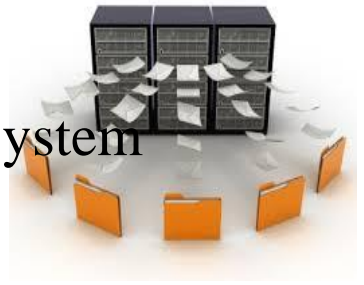
Cadastral



- **Project name:** Establishment Cadastral Database System, software
- **Duration:** 2013.09.27-2017.06.30
- **Framework:** 21 province 330 municipalities
- **Result:**

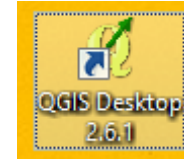
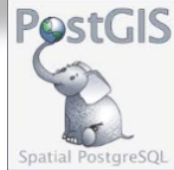


- Centralized Database System
 - Cadastral maps
 - Registry
 - Land tax and payment information
 - Land valuation zone
- Network /VPN and Internet/
- Hardware /Server, Computer, Printer, Scanner/





Cadastral Database Software Land Manager



The screenshot shows the pgAdmin III interface. On the left, the 'Object browser' displays a tree structure of databases. The 'db1' database is expanded, showing a list of schemas. The schema 's06201' is highlighted with a red box. Below the list, a red-bordered box contains the text: **Өвөрхангай аймгийн мэдээллийн сангийн схемүүд**. The 'SQL pane' on the right shows the following SQL commands:

```
-- Schema: s06201
-- DROP SCHEMA s06201;
CREATE SCHEMA s06201
AUTHORIZATION geodb_admin;
GRANT ALL ON SCHEMA s06201 TO geodb_admin;
GRANT USAGE ON SCHEMA s06201 TO s06201;
```

At the bottom left, a status bar reads: 'Retrieving details on schema s06201... Done.'

The screenshot shows the QGIS Desktop 2.6.1 interface. The main window displays a cadastral map with yellow and white polygons representing land parcels. On the right side, a configuration dialog box is open, showing various settings for a layer. The dialog includes fields for 'Name', 'Color', 'Opacity', and 'Symbol', along with buttons for 'OK' and 'Cancel'.



Land Manager in E-government

LandManager2

localhost/webgis/map_landinfo.phtml?config=landinfo

Хэвлэх Татах Тусламж

НҮҮР ХУУДАС ГАЗАР, ҮЛ ХӨДЛӨХ ХӨРӨНГИЙН МЭДЭЭЛЭЛ

Зох зээлийн үнийг харах

Өргөдлийн явцыг харах

Гэрээний мэдээлэл харах

Таних тэмдэг Давхаргууд

Аймаг

- Аймаг

Сум

- Сум

Нэгж талбар

- Нэгж талбар

062016000174

062016000433

062016000082

062016000241

062016000247

062016000413

062016000168

Нэгж талбарын дугаар болон регистрийн дугаараа оруулж гэрээний мэдээллээ харна уу!

| | | | | |
|----------------------------|-----------------------|--------------------------|----------------------------------|------|
| Нэгж талбарын дугаар | 062016000241 | Регистрийн дугаар | ЙЮ74120306 | Хайх |
| Гэрээний дугаар. | 6201-2001/00241 | Гэрээний төрөл | 5: Шинээр газар эзэмших | |
| Гэрчилгээний No. | 339021 | Гэрээний явц | Хүчинтэй | |
| Гэрээ эхэлсэн | 2001.05.09 | Гэрээ дуусах | 2050.04.10 | |
| Газрын жилийн төлбөр [MNT] | 0 | Газрын төлбөрийн ангилал | | |
| Нэгж талбарын дугаар | 062016000241 | Талбайн хэмжээ [кв.м] | 579 | |
| Кадастрын зураг | Кадастрын зураг үзэх | Байшингийн схем | Байшингийн схем, фото зураг үзэх | |
| Байшингийн фото зураг | Байшингийн фото зураг | | | |

Х: 328852 Y: 5126193

W3C ХЯНГЛ 1.0





Land Manager in WebGIS

localhost/landmanager/map_landinfo.phtml?config=landinfo

нүүр хуудас ГАЗАР, ҮЛ ХӨДЛӨХ ХӨРӨНГИЙН МЭДЭЭЛЭЛ Хөвлөх Татах Тусламж

Зах зээлийн үнийг харах

Өргөдлийн явцыг харах

Гэрээний мэдээлэл харах

Таних тэмдэг Давхаргууд

Аймаг
- Аймаг

Сум
- Сум

Нэгж талбар
- Нэгж талбар

Өргөдлийн дугаар болон регистрийн дугаараа оруулж өргөдлийн явцаа харна уу!

| | | | |
|-------------------------------------|--|---------------------------|---|
| Өргөдлийн дугаар | <input type="text" value="06201-01-00483-13"/> | Регистрийн дугаар | <input type="text" value="ЙЮ51052017"/> |
| <input type="button" value="Хайх"/> | | | |
| Өргөдлийн дугаар. | <input type="text" value="06201-01-00483-13"/> | Өргөдлийн төрөл | <input type="text" value="1: Гэр бүлийн хэрэгцээнд н"/> |
| Өргөдлийн огноо | <input type="text" value="2003.01.01"/> | Өргөдөлд хийсэн тэмдэглэл | <input type="text"/> |
| Өргөдлийн явц | <input type="text"/> | Явцын огноо | <input type="text"/> |
| Өргөдөлтэй ажилласан | <input type="text"/> | Өргөдлийг шилжүүлсэн | <input type="text"/> |
| Ажлын утас | <input type="text"/> | Гар утас | <input type="text"/> |
| E-mail | <input type="text"/> | | |

X: -192971 Y: 5747903 W3C XHTML 1.0

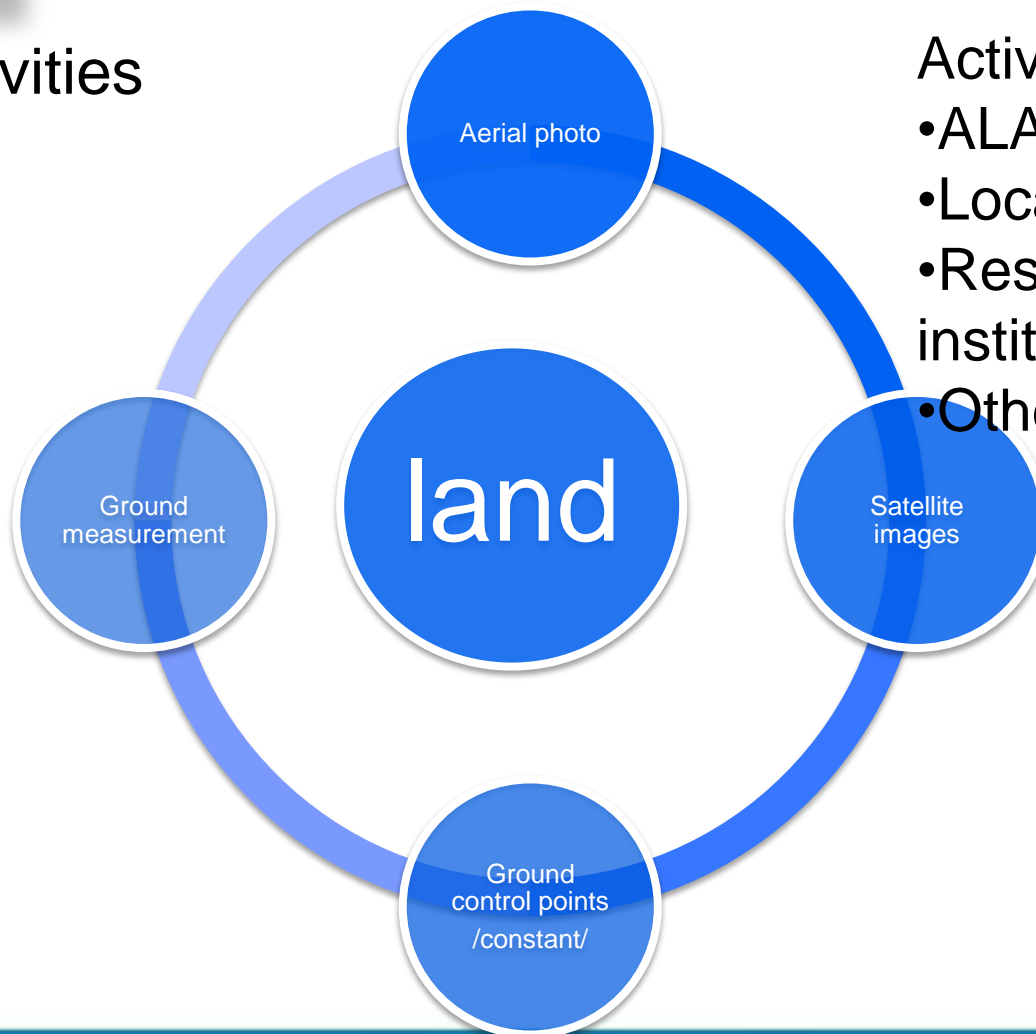




Monitoring

Type of activities done by:

- Quality
- Quantity



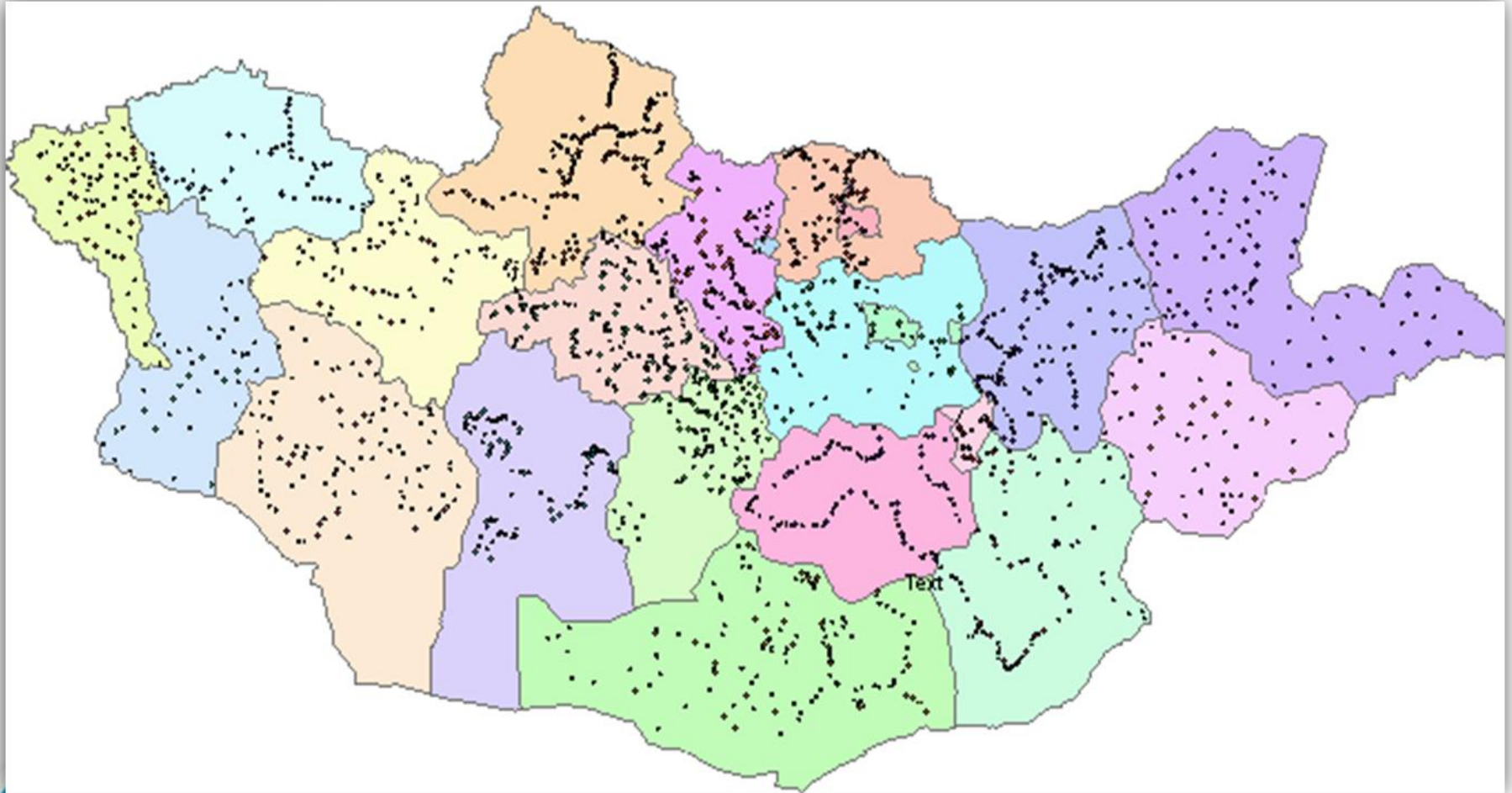
Activities done by:

- ALAGAC
- Local land officers
- Research institutions
- Others





In case Pasture



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Methodology /Field survey/

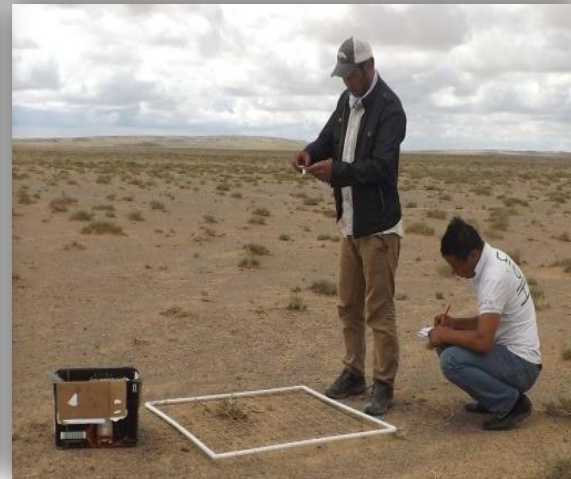
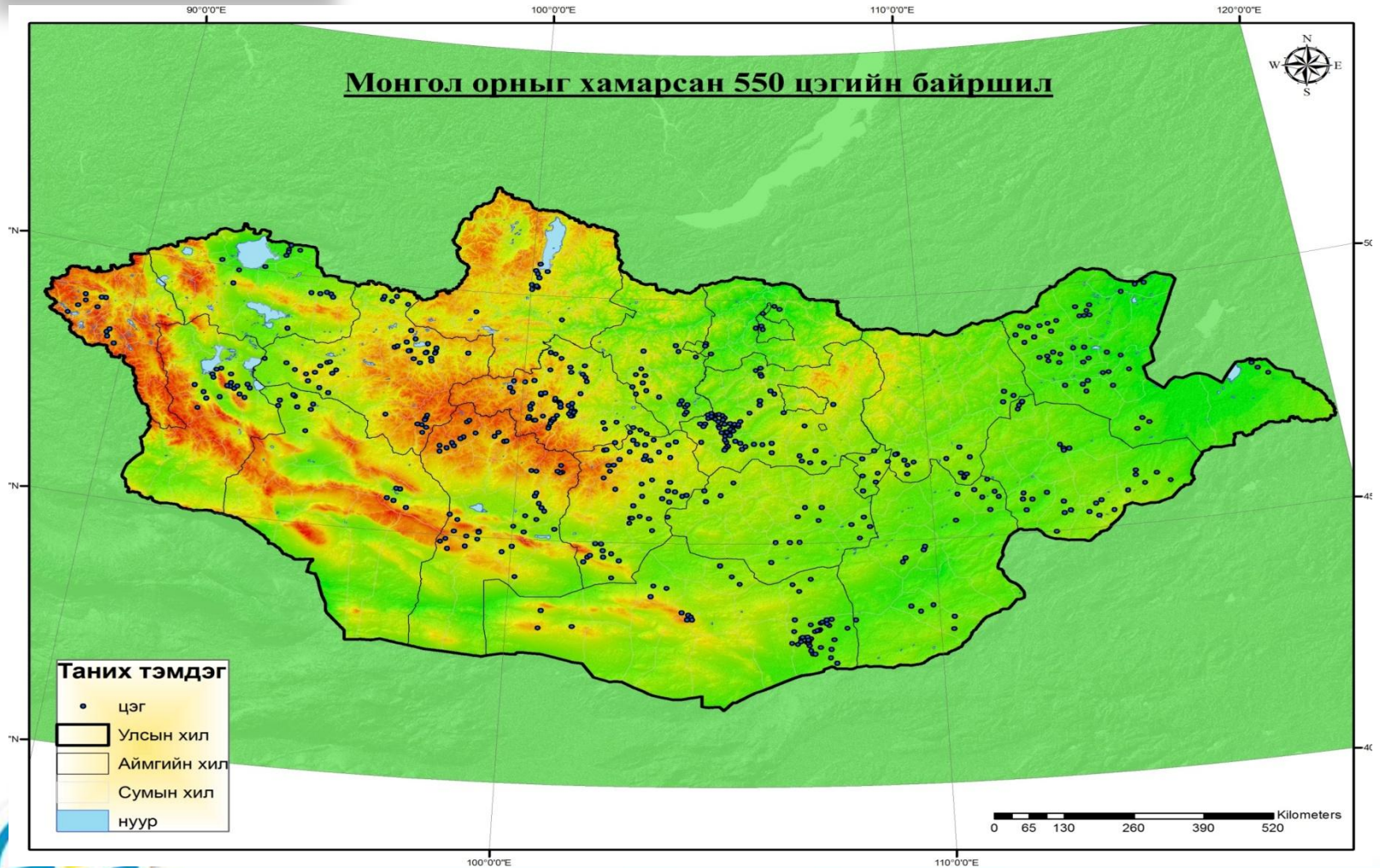


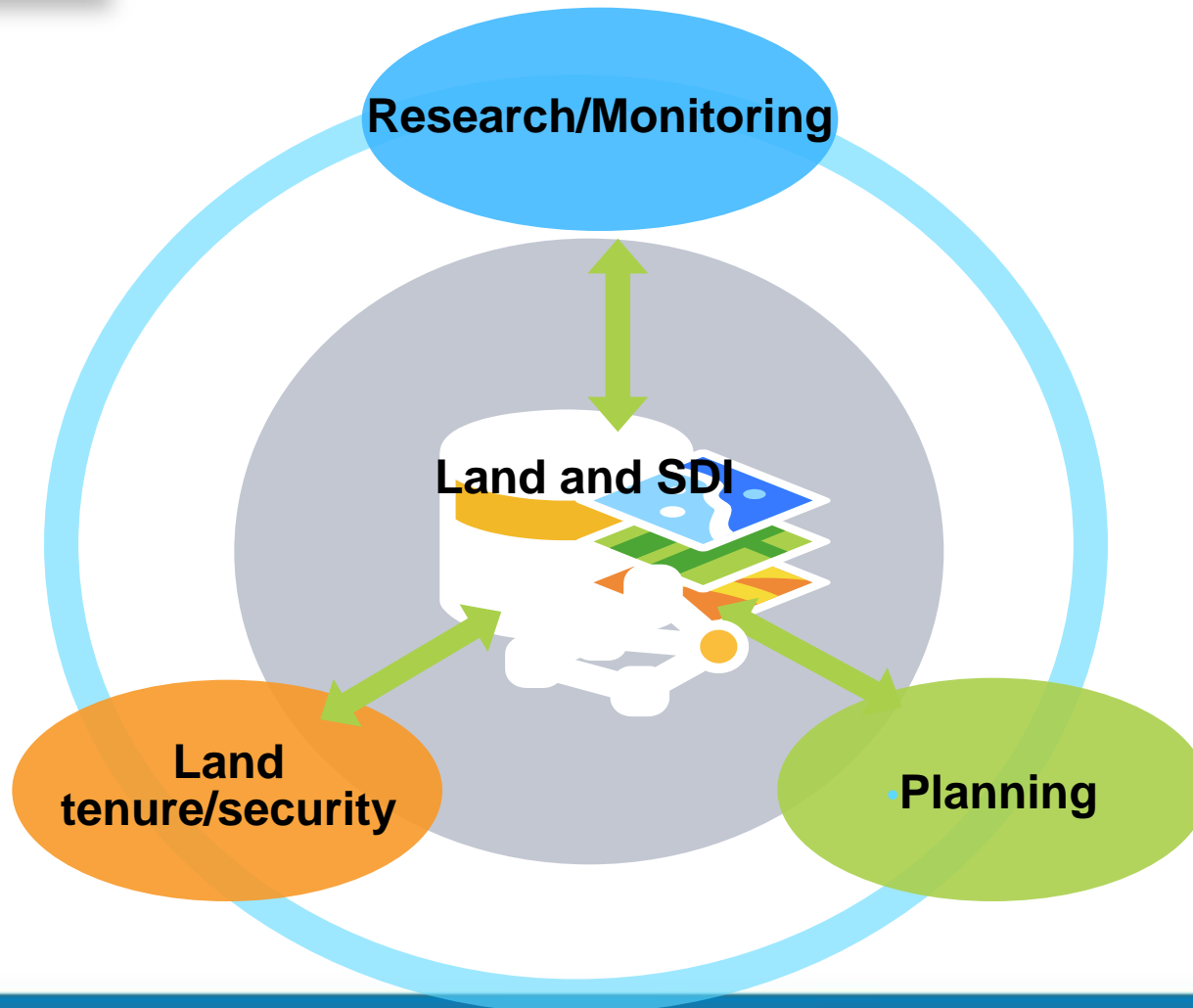


Photo monitoring /Field survey/





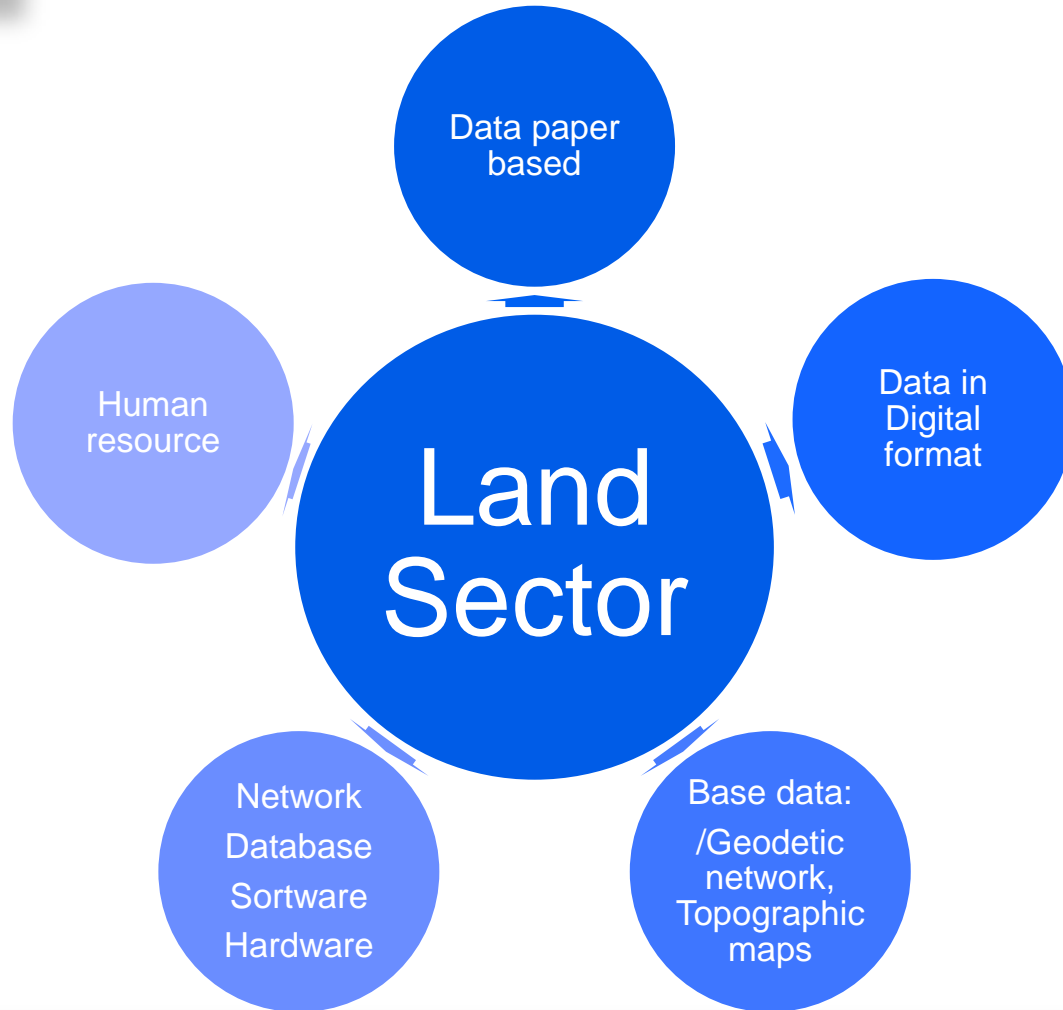
Outcomes





Co-operation





THANK YOU FOR YOUR
ATTENTION



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