**Guideline, Methodology, Tools for Impact based forecasting (IBF) for supporting mid-term and yearly planning process**

**Data required for GIS Base Map development on 4 Aimags ( Dornod, Sukhbaatar, Zaykhan, Khovd ) and whole country :**

| **SL** | **GIS Layer**  | **Data type**  | **Purposes**  |
| --- | --- | --- | --- |
|  | * Admin Boundary ( Aimag)
* Soum Boundary
 | * Polygon shape
* Line
 | * Local Level Development Planning
* Aimag level Risk-informed development planning
* Sectoral development planning

  |
|  | **Communication network**1. Road ( carpeting, paved, earthen ) with structures
2. Rail
 |  |  |
|  | **Landcover** 1. Agricultural land
2. Wet land/Swamp/Marshland
3. Waterbody
4. Lake
5. River ( Major)
6. Sand , Barren land
7. Desert
8. Desert Steppe
9. Dry steppe
10. Grassland steppe
11. Forested Areas
12. Permanent snow, ice ,
13. Glacier/permafrost
14. Altai Mountains
15. Mountain/hill areas
16. Ecologically critical areas
 |  |  |
|  | **Government Installations** * Aimag Office building
* Soum Building
* Municipality buildingStatistical office
* Livestock
* Agriculture
 | Point  |  |
|  | **Socio-economic infrastructures*** Settlements
* Ger
* Bank / Financial institutes
* Public building/Government
* Educational Institutes ( types ; School, college, university )
* Health care centers ( hospital, clinic, family welfare center, )
* Emergency Shelters
* Food god won/Food Storage facilities
* Hay/Fodder storage facility
* Market Place
* Wholesale Market
* Religious temple
* Household
* Grocery market
* Deep tune well
* Community water access points
* Power station ( coal , Microhydro) 13 mini and small hydro power plants
* He mentioned that in Mongolia, to date, 13 mini and small hydropower plants (SHPs) had been
* constructed, of which two were SHPs with a dam that operated all year round, and one an SHP without a
* dam that worked only in summer. The other ten are equipped with mini-turbines and also operate only
* during summer. Out of the 13 hydropower plants, three are equipped with fish passage facilities, i.e.
* Dorgon hydropower plant, with a capacity of 12 MW constructed on the Chonokharaikh River in Khovd
* Province; Bogdiin hydropower plant, with a capacity of 2 MW constructed on the Bogdiin River in
* Zavkhan Province; and Tosontsengel hydropower plant, with a capacity of 0.38 MW constructed on the
* Ider River in Zavkhan Province. The Dorgon hydropower plant can operate all year around, but the
* Tosontsengel and Bogdiin plants operate only seasonally, i.e. in summer between 15 April and 15 October )phone coverage areas
* Water treatment facility
* Water pipeline network
 | Point/polygon/line  |  |
|  | **Other Physical Infrastructures*** Power distribution Lines
* Telephone/cell phone towers
* Water /Gas supply pipeline
* Water heating points
* Power Plant
* Electric Sub station
* Water treatment plant
* Deep tube well
 | Line/points/polygon |  |
|  | **Livestock Veterinary/ care center** * Emergency Livestock Shelter
* Emergency Fodder/Hay Stockpiling place/building
 | points |  |
|  | **Weather Observation Stations*** Meteorological Station/ Automatic Weather Station
* Radar Station
* Post
* River gauging station

hydrogeographic characteristics ofMongolia, mentioning that there were more than 5 000 rivers in three drainage basinsDams | points |  |
|  | **Land use*** Cultivable areas ( Crop type ; wheat, corn, vegetables )
* Barren land
* Pastureland
* Fodder production land
 |  |  |
|  | **Mineral resources** * Mine
 | Points |  |
|  | **Waterbody*** River
* Canal
* Lake
* Water retention pond for agriculture/livestock drinking
* Rainwater harvesting point
 | Points/Polygon shape |  |
|  | Disaster Emergency Operations Center (EOC) * Emergency Shelter
* Emergency Relief Supply Point ( Water, Medicine, Food, Shelter kits, cooked food)
 |  |  |
|  | **Agricultural Infrastructures/Structures & Natural resources** * Agriculture Offices
* Drainage network
* Water retention ponds
* Irrigation points
* Deep tube well /water pump for irrigation
* Constructed Green house for agriculture
* Seedling & Sapling production point
* Small holder farming areas
* Fruit garden
* Agro-forestry areas
* Forest areas
* Integrated Farm Management Areas
* Bio manure production points
* Fodder/grass cultivation areas
* Food process industries
* Agriculture input supply points ( Seed, Fertilizer, Veterinary )
 | Polygon/ points Line |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |