**Preparation of the Database for the DSS Modules:**

1. **Population Estimation Module (1981 – 2011):**

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| --- | --- | --- | --- | --- | --- |
| **SN** | **Data** | **Unit** | **Used for** | **Availability** | **Remark** |
|  | Annual Birth Rate | Village (Optional)  District  (Compulsory) | Time Series Method, Scenario-based method |  |  |
|  | Annual Death Rate | Village (Optional)  District  (Compulsory) | Time Series Method, Scenario-based method |  |  |
|  | Annual Emigration | Village (Optional)  District  (Compulsory) | Time Series Method, Scenario-based method |  |  |
|  | Annual Immigration | Village (Optional)  District  (Compulsory) | Time Series Method, Scenario-based method |  |  |
|  | Total Population | Village (Compulsory) | Logistic Growth Method under Time Series Method |  |  |
|  | Age-Specific Fertility Rates (ASFR) | District (Compulsory) | Cohort Component Method |  |  |
|  | Age-Specific Mortality Rates (ASMR) | District  (Compulsory) | Cohort Component Method |  |  |
|  | Age-Specific Migration Rates (ASMR) | District  (Compulsory) | Cohort Component Method |  |  |
|  | Sex Ratio in % | District / State  (Compulsory) | Cohort Component Method |  |  |

1. **Water Demand Module:**

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| **SN** | **Data** | **Unit** | **Year** | **Used for** | **Availability** | **Remark** |
|  | Total Population | Village (Compulsory) | Current to Future | Domestic Water Demand |  |  |
|  | Floating Population | Village (Optional)  District  (Compulsory) | Current | Floating Population Water Demand |  |  |
|  | 1. Hospitals with more than or equal to 100 Beds 2. Number of Beds | Village Level Data is optional, but district level data is compulsory. | Current | Institutional Water Demand |  |  |
|  | 1. Hospitals with less than 100 Beds 2. Number of Beds | Current |  |  |
|  | 1. Number of Hotels 2. Number of Beds | Current |  |  |
|  | 1. Number of Hostels 2. Number of Residents | Current |  |  |
|  | 1. Number of Nurses’ homes and medical quarters 2. Number of Residents | Current |  |  |
|  | 1. Number of Boarding schools / colleges 2. Number of Students | Current |  |  |
|  | 1. Number of Restaurants 2. Number of Seats | Current |  |  |
|  | 1. Number of Airports and seaports 2. Population Load | Current |  |  |
|  | 1. Number of Junction Stations and intermediate stations where mail or express stoppage (both railways and bus stations) is presided 2. Population Load | Current |  |  |
|  | 1. Number of Terminal stations 2. Population Load | Current |  |  |
|  | 1. Number of Intermediate stations (excluding mail and express stops) with bathing facility 2. Population Load | Current |  |  |
|  | 1. Number of Intermediate stations (excluding mail and express stops) without bathing facility 2. Population Load | Current |  |  |
|  | 1. Number of Day schools / colleges 2. Number of Students | Current |  |  |
|  | 1. Number of Offices 2. Number of Employees | Current |  |  |
|  | 1. Number of factories with bathroom facility 2. Number of Employees | Current |  |  |
|  | 1. Number of factories without bathroom facility 2. Number of Employees | Current |  |  |
|  | 1. Number of Cinema, concert halls, and theatre 2. Population Load | Current |  |  |
|  | Population of the Region at Intermediate Stage (15 Years from now) | Village  (Optional)  District  (Compulsory) | Target Year | Fire Fighting Water Demand |  |  |

1. **Sewage Load Estimation Module:**

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| **SN** | **Data** | **Unit** | **Year** | **Used for** | **Availability** | **Remark** |
|  | Total Water Supply in MLD | Village (Optional)  Ward /District  (Compulsory) | Last Year – Current Year | Water Balance based Sewage Estimation |  |  |

1. **STP Site Priority and Suitability Module:**

***D1. STP Site Priority Sub-module:***

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| --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Data** | **Unit** | **Year** | **Used for** | **Availability** | **Remark** |
|  | Sewage Gap | Village (Optional)  Ward /District  (Compulsory) | Current Year | Sewage load analysis |  |  |
|  | Water quality index | Village (Optional)  Ward /District  (Compulsory) | Current Year | Current status of water quality |  |  |
|  | Mean Temperature | Village (Optional)  Ward /District  (Compulsory) | Current Year | Enhance the efficiency of microbial activity |  |  |
|  | Mean Rainfall | Village (Optional)  Ward /District  (Compulsory) | Current Year | Identify more flood prone regions, and suitable water flow |  |  |
|  | GDDP at Current Price | Village (Optional)  Ward /District  (Compulsory) | Current Year | Economic Significance |  |  |
|  | Number of Tourists | Village (Optional)  Ward /District  (Compulsory) | Current Year | Cultural Significance |  |  |
|  | Number of ASI Sites | Village (Optional)  Ward /District  (Compulsory) | Current Year |  |  |

***D2. STP Site Suitability Sub-module:***

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| --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Data** | **Source** | **Year** | **Used for** | **Availability** | **Remark** |
| **Required Conditioning Factors** | | | | | | |
|  | Lithology | Bhookosh | Current Year | For securing the feasibility and sustainability of STP construction and operation. |  |  |
|  | Geomorphology | Bhookosh | Current Year | For the effective planning and sustainable operation of STP. |  |  |
|  | Soil Texture | Soil Grids | Current Year | For stability of STP structures and preventing contamination of groundwater sources. |  |  |
|  | Soil Type | FAO / NBSS | Current Year | For support the loads imposed by an STP. |  |  |
|  | Distance from built-up land | LULC | Current Year | For reducing the odors, noise from machinery, and emissions, which can affect the quality of life for nearby resident |  |  |
|  | Distance from road | Road Layer | Current Year | To facilitate construction, operation, and maintenance |  |  |
|  | LULC | ESRI Sentinel | Current Year | It impacts the feasibility, accessibility, and environmental compliance of the STP differently with each LULC classes. |  |  |
|  | Elevation | SRTM DEM | Current Year | It directly influences operational efficiency, flood risk, and environmental impact. |  |  |
|  | Slope | Elevation Layer | Current Year |  |  |
|  | Population Density | Census Data  (Village Level) | Current Year | To minimize environmental and public health impacts. |  |  |
|  | Literacy | Census Data  (Village Level) | Current Year | Public understanding and acceptance of Sewage Treatment Plants (STPs) |  |  |
| **Natural Restrictive Factors** | | | | | | |
|  | Water Body | From LULC | Current Year |  |  |  |
|  | Slope | From Elevation Layer | Current Year |  |  |  |
|  | Soil Texture | Soil Grids | Current Year |  |  |  |
|  | Flood Prone Area | India WRIS Data | Current Year |  |  |  |
|  | Groundwater Depth | India WRIS Data | Current Year |  |  |  |
|  | Wetland | Manual Digitized Data | Current Year |  |  |  |
|  | Forest | Manual Digitization / LULC | Current Year |  |  |  |
| **Anthropogenic Restrictive Factors** | | | | | | |
|  | Road | Diva GIS / GitHub | Current Year |  |  |  |
|  | Railway | Diva GIS / GitHub | Current Year |  |  |  |
|  | Airport | Manual Digitization | Current Year |  |  |  |
|  | Built-up area | LULC | Current Year |  |  |  |
|  | ASI Sites | Report / Manual Digitization | Current Year |  |  |  |
|  | Defense Area | Report / Manual Digitization | Current Year |  |  |  |
|  | Existing STPs | Report / Manual Digitization | Current Year |  |  |  |
|  | Proposed STPs | Report / Manual Digitization | Current Year |  |  |  |