Climate Resilient Cities and Urban Environmental Sustainability

Mymensingh Municipality
Bangladesh

International Urban Training Center
IUTC Training Leaders For a Sustainable Future

UN HABITAT
FOR A BETTER URBAN FUTURE

Climate Resilient City and Urban Environmental Sustainability

Mymensingh Municipality, Bangladesh

Area: 70.98 km²

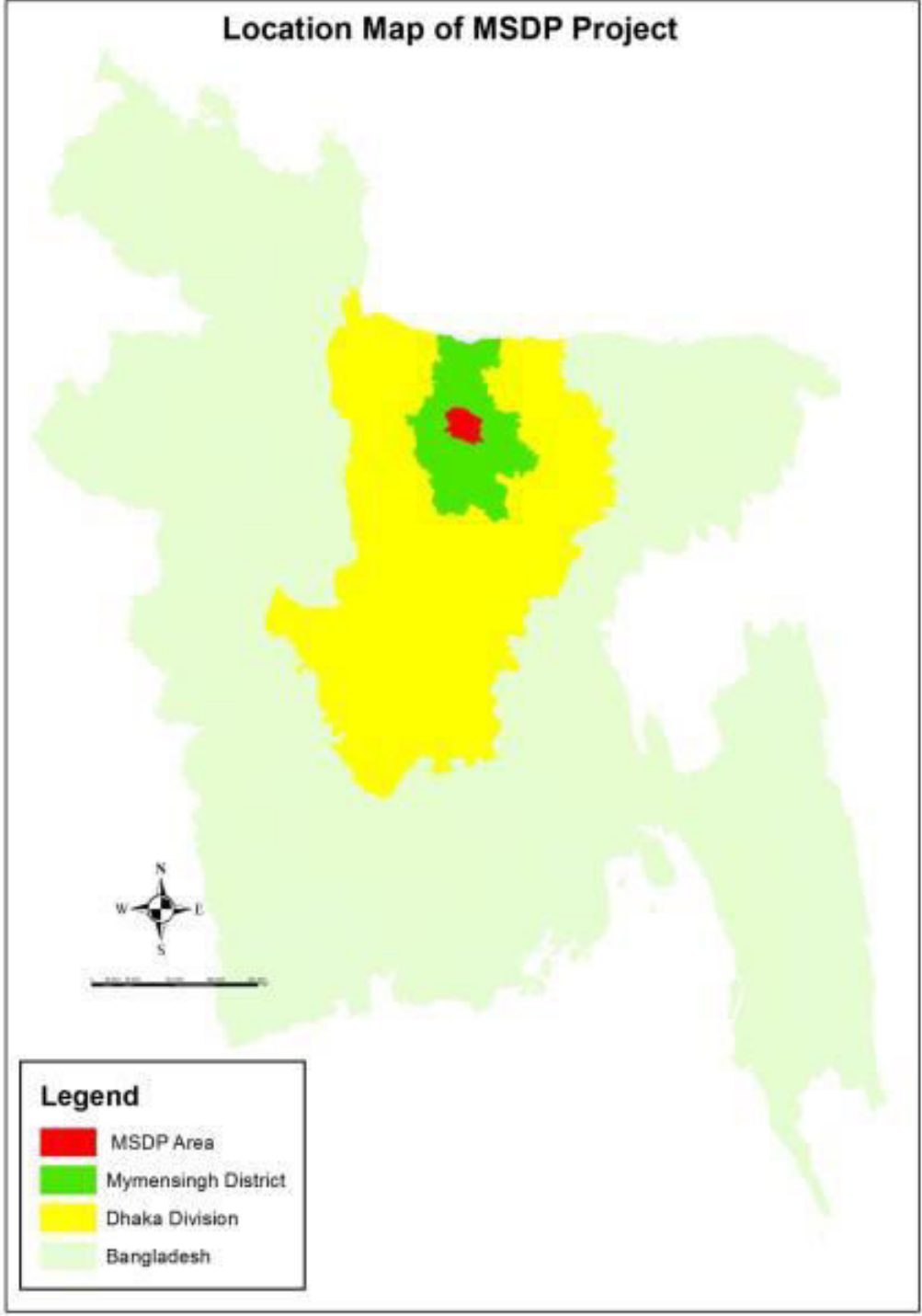
Elevation: 19 m from the Sea level

Population: 258 Thousands

Location of the Municipality

The Mymensing Municipality is Located at the center part of the Newly established Mymensingh Division

The city established on 1787.



Location of the Municipality

The Old King's House, Shoshi Lodge

The Brahmaputra River, Mymensingh

The Circuit House

Damaged Court Building of Mymensingh due to earthquake in 1897 with 8.7 Mw

Evidence of Earthquake Damage in Mymensingh

City profile

1.A Characteristics of the city:

Population is about 258 Thousand
Area 70.98 sq. km.
Demographic density is 3,635 per Sq. Km.
Height above sea level 19 m
HDI 139th out of 188 countries and the point is 0.579
GDP of Bangladesh is $275 in 2017-2018 fiscal Year
GDP per capita in 2017 is 1359 usd

City Profile

1.B Characteristics of the city:

Mymensingh is the oldest city of Bangladesh about 220 year old city along the river Brahmaputra.

In 2017 it has been declared the Divisional Town and in April, 2018 it has been declared city corporation also.

Mymensing is also Known as the city of Education.

Historically Mymensing City is well known for the Jute Production but Now a days Fish cultivation is More contributed to the Local and national Economy.

City profile

2. City's issues/needs

Problems the City Facing:

From the Climate change context this city is facing extreme flood in last few Years. And also the drainage congestion is high in the city.

Needs/interests:

The specific Policy Level Measures and also the implementation strategies should be needed for he city in terms of Climate change and urban environment sustainability.

Goals and Objectives

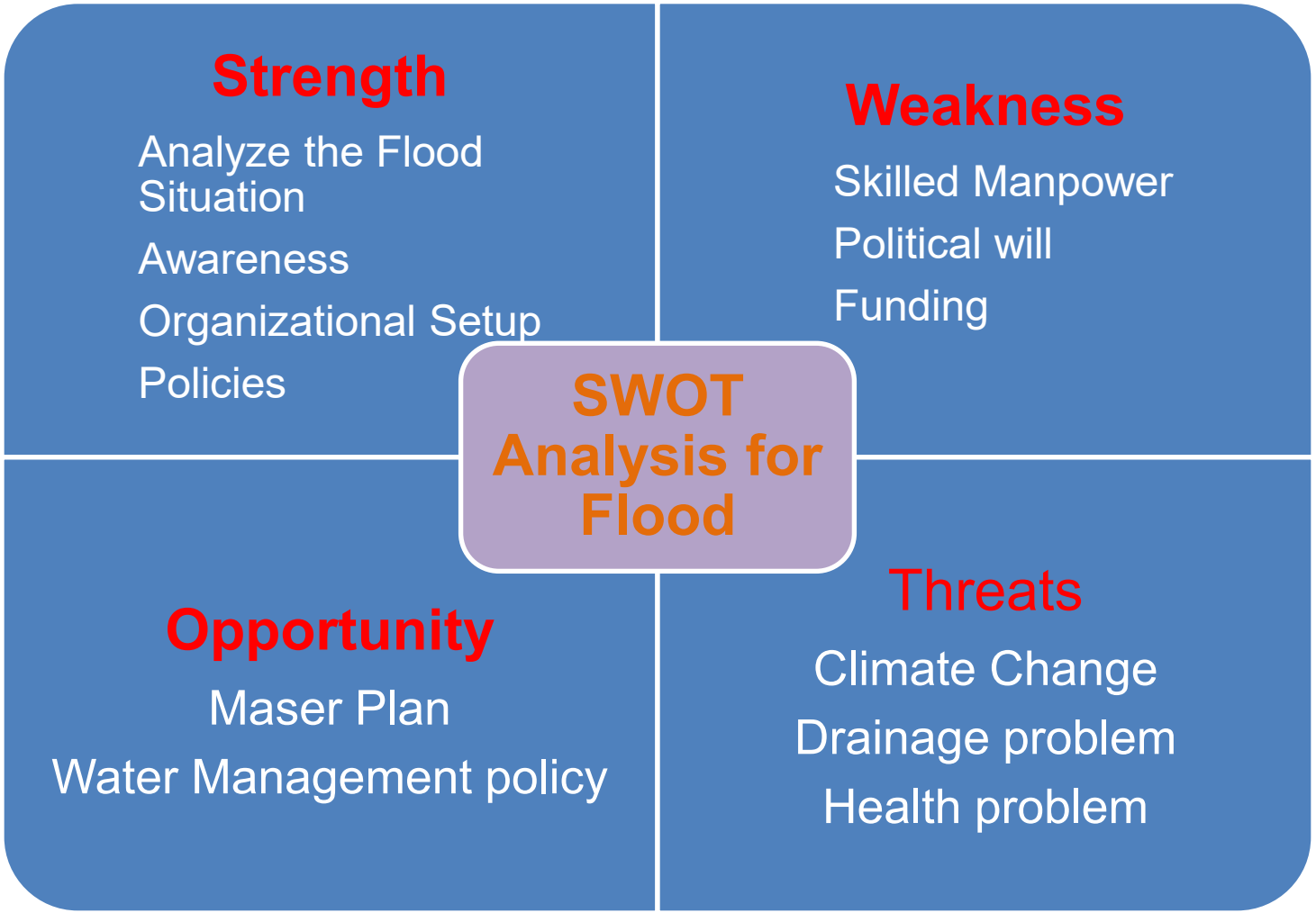
Goals:

To improve the capacity of the city to protect/cope with the monsoon flooding and make city healthier

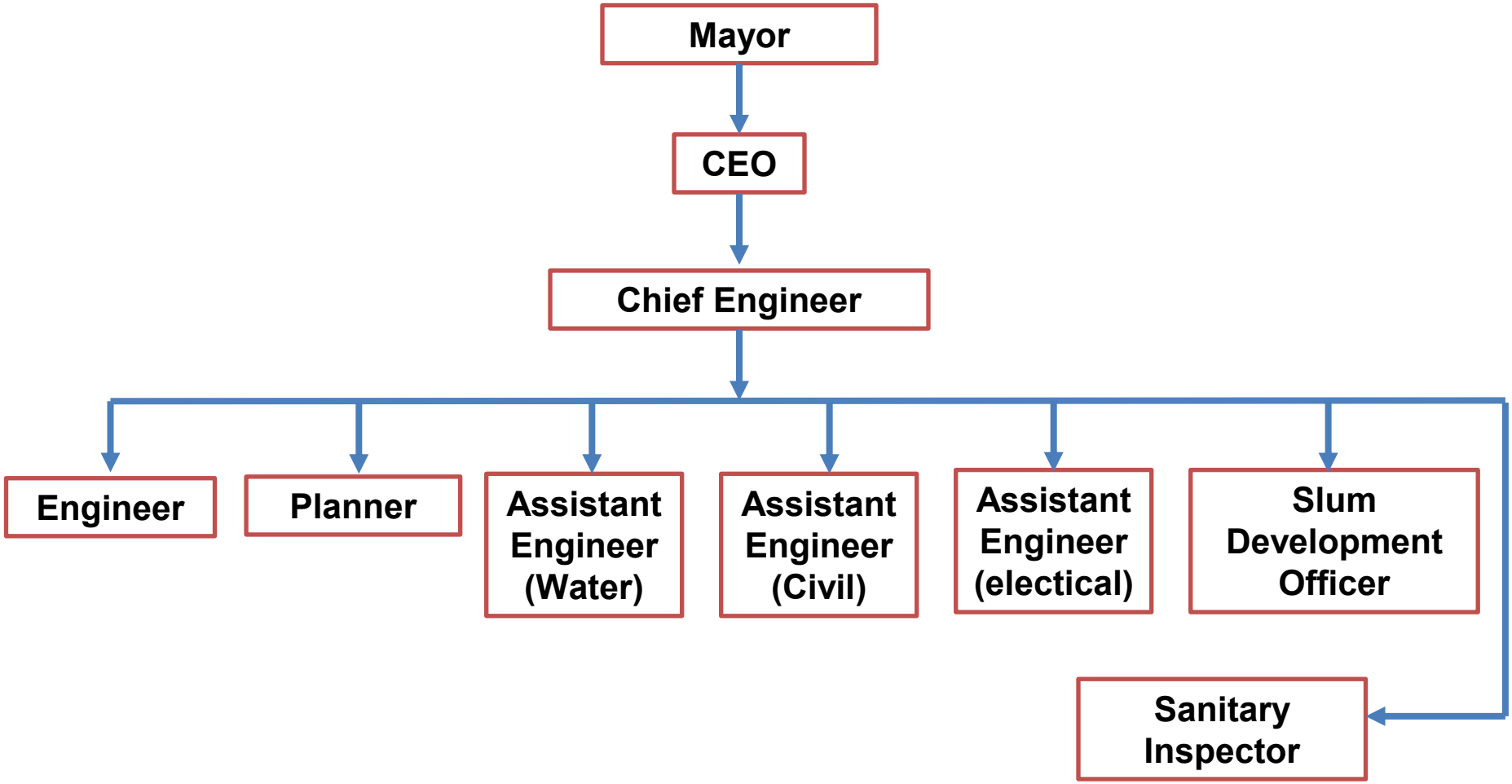
Objectives:

- **Improve the drainage system** to alleviate water logging in areas
- Build and protect retention areas and **flood buffer zones**.
- Prepare a plan for **storm water management** and institutional arrangement involving key stakeholders, service providers and decision makers.
- **Develop a contingency plan** to allow limited flooding in designated areas in case of extreme rainfall events
- Prepare a plan for priority activities and financing.

SWOT Analysis



Institutional structure of the city



Municipality initiatives

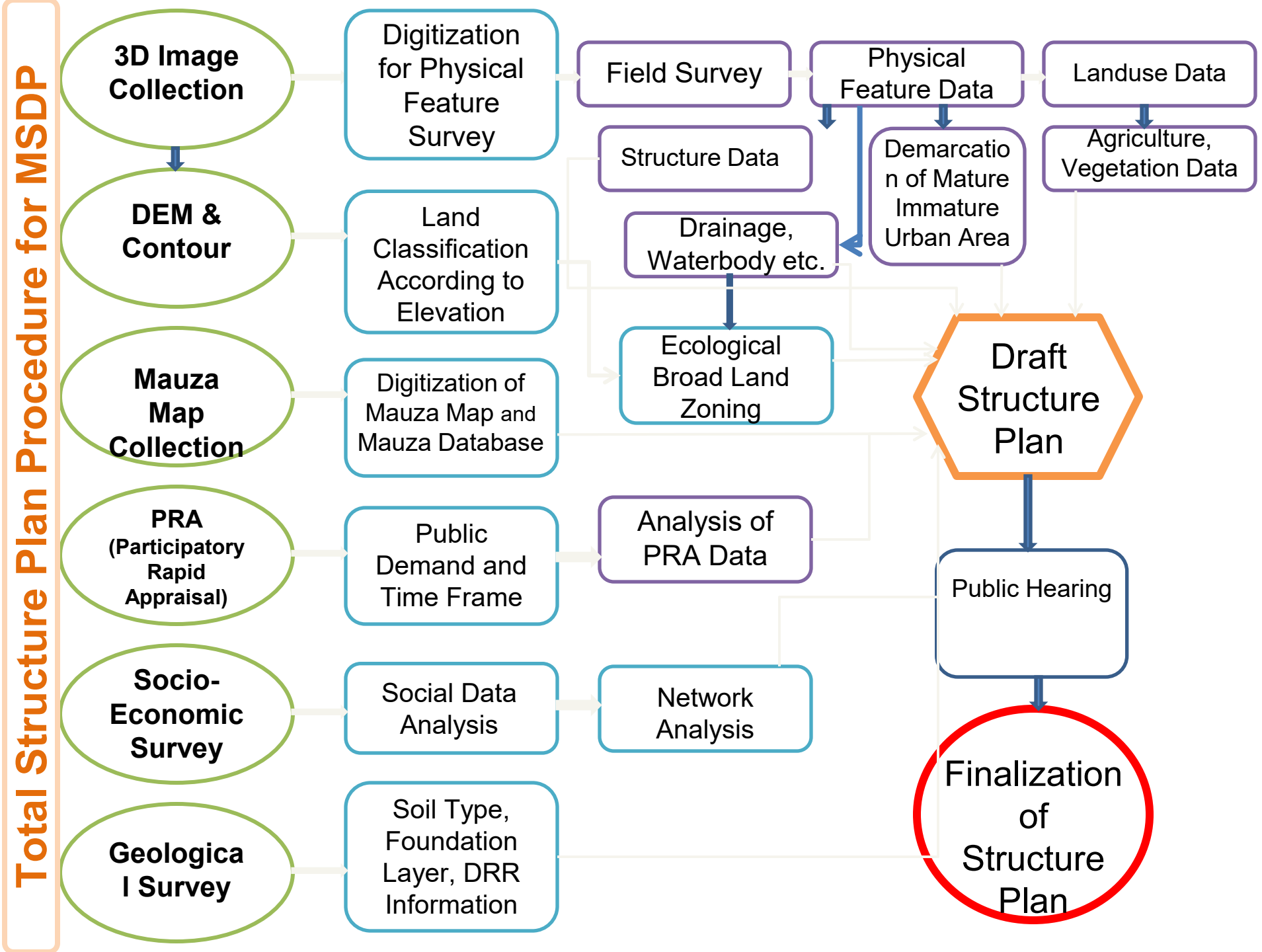
Adaptation Measures

1. Proper drainage Channels
2. Rules and Regulations
3. Embankment

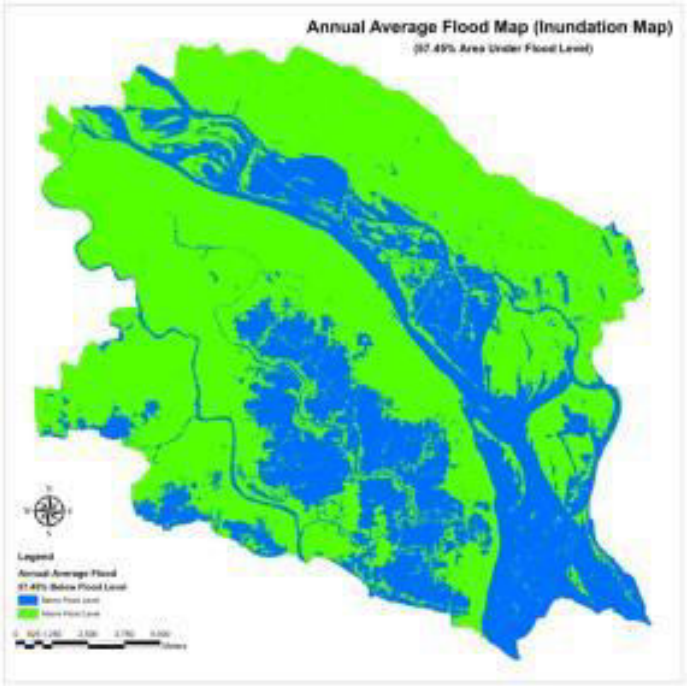
Mitigation Measures

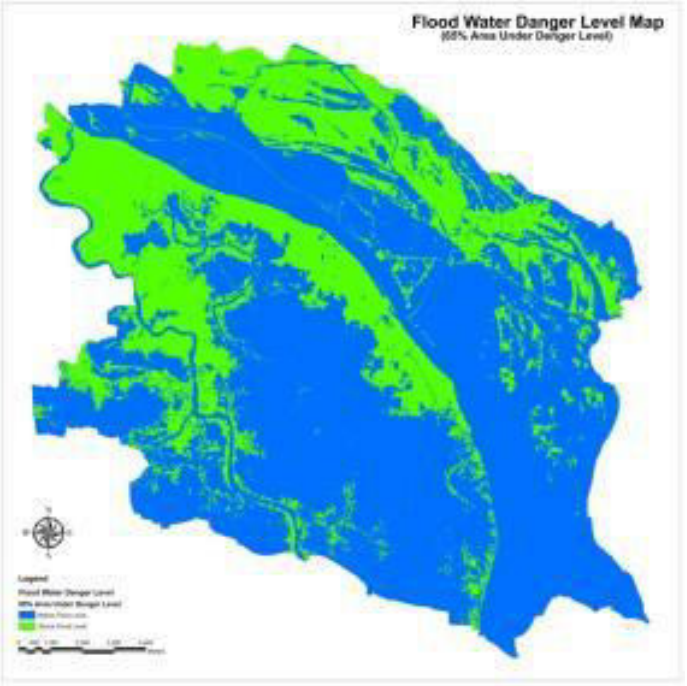
1. Conserve the Flood Flow Zone
2. Awareness and Communication
3. Flood compatible House

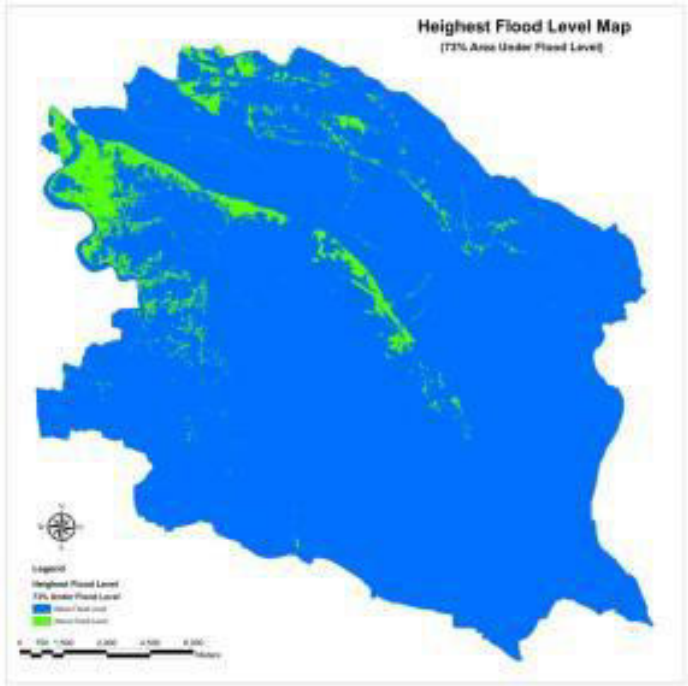
Action Plan Process

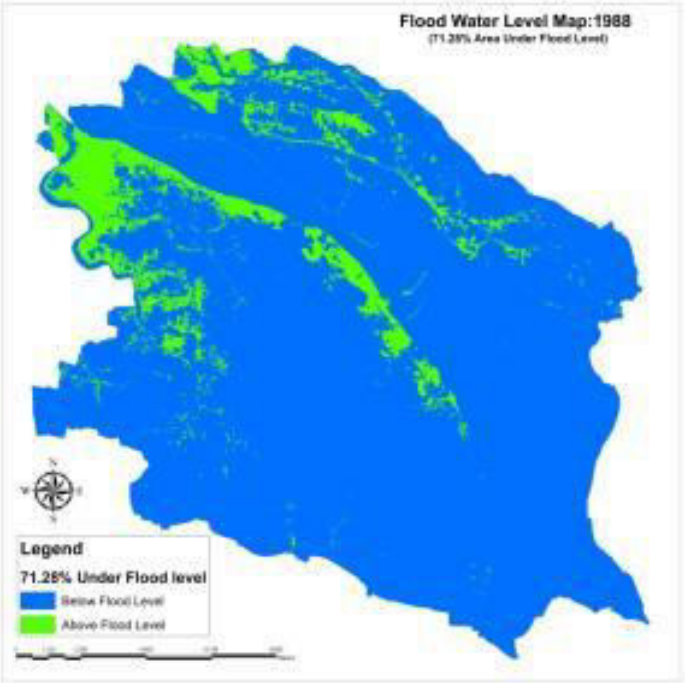

Total Structure Plan Procedure for MSDP
3D Image Collection
DEM & Contour
Mauza Map Collection
PRA (Participatory Rapid Appraisal)
Socio-Economic Survey
Geological Survey
Digitization for Physical Feature Survey
Land Classification According to Elevation
Digitization of Mauza Map and Mauza Database
Public Demand and Time Frame
Social Data Analysis
Soil Type, Foundation Layer, DRR Information
Field Survey
Physical Feature Data
Landuse Data
Structure Data
Demarcation of Mature Immature Urban Area
Agriculture, Vegetation Data
Drainage, Waterbody etc.
Ecological Broad Land Zoning
Analysis of PRA Data
Network Analysis
Draft Structure Plan
Public Hearing
Finalization of Structure Plan

Effect of Climate Change (Flood Scenario)

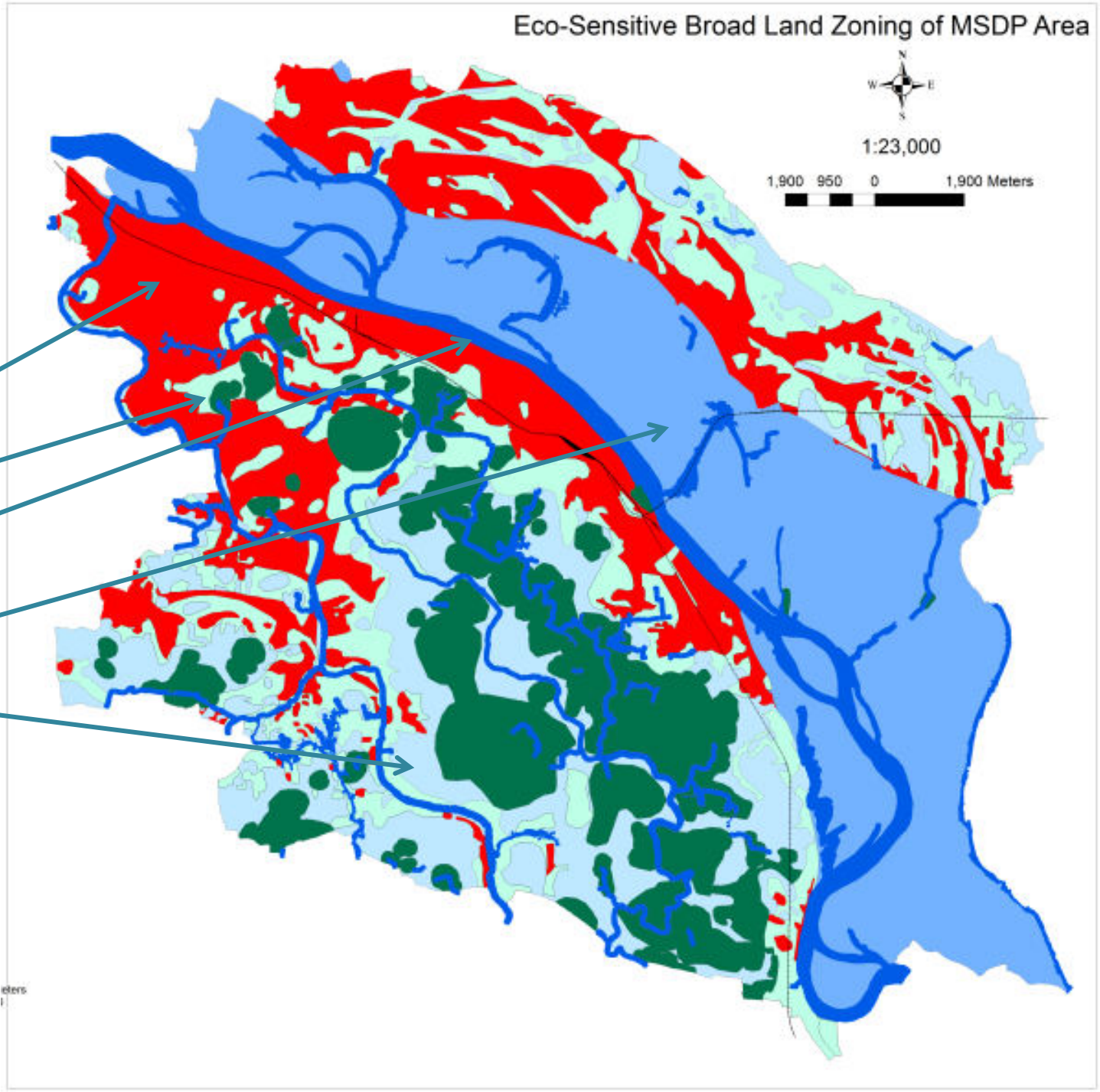


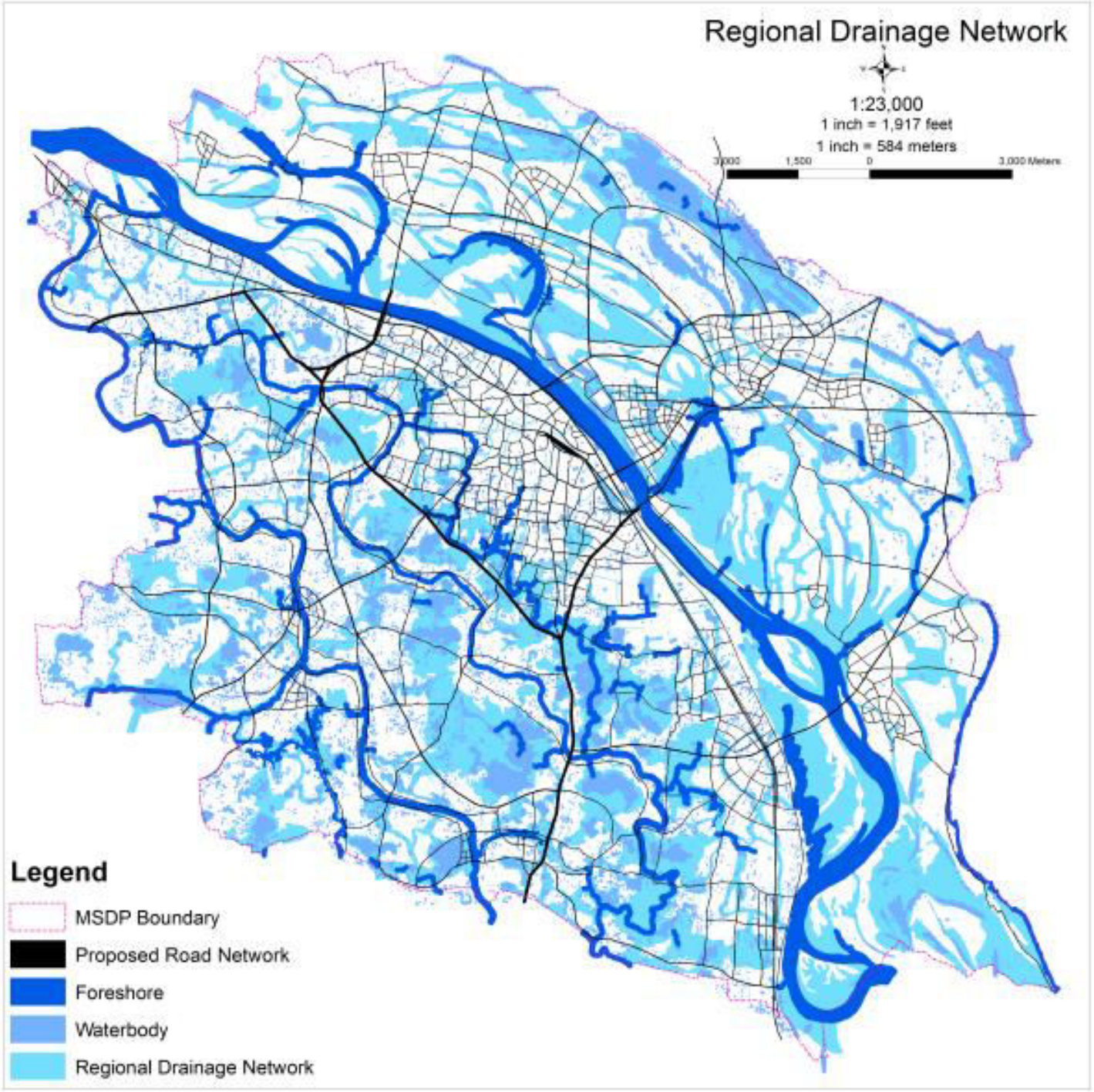






Eco-Sensitive Broad Land Zoning




Regional Drainage Network
1:23,000
1 inch = 1,917 feet
1 inch = 584 meters
3,000
1,500
0
3,000 Meters
Legend
MSDP Boundary
Proposed Road Network
Foreshore
Waterbody
Regional Drainage Network

Municipality initiatives

Projects:

- Secondary Town Integrated Flood Protection Project (STIFF)

  Construction of Drainage and improve Sanitation System

  33.28 km Primary and Secondary Drain

  3.7 million USD

  Financed By-ADB, OPEC, GoB

Secondary Town Integrated Flood Protection Project (STIFFP)

Municipality initiatives

Projects:

- Urban Governance and Infrastructure Improvement Projects (UGIIP)

  Improve the Capacity of City Governance

  Construction of Road, drainage, Reconstruction of Market Places and Bus Terminals

  2.9 million USD

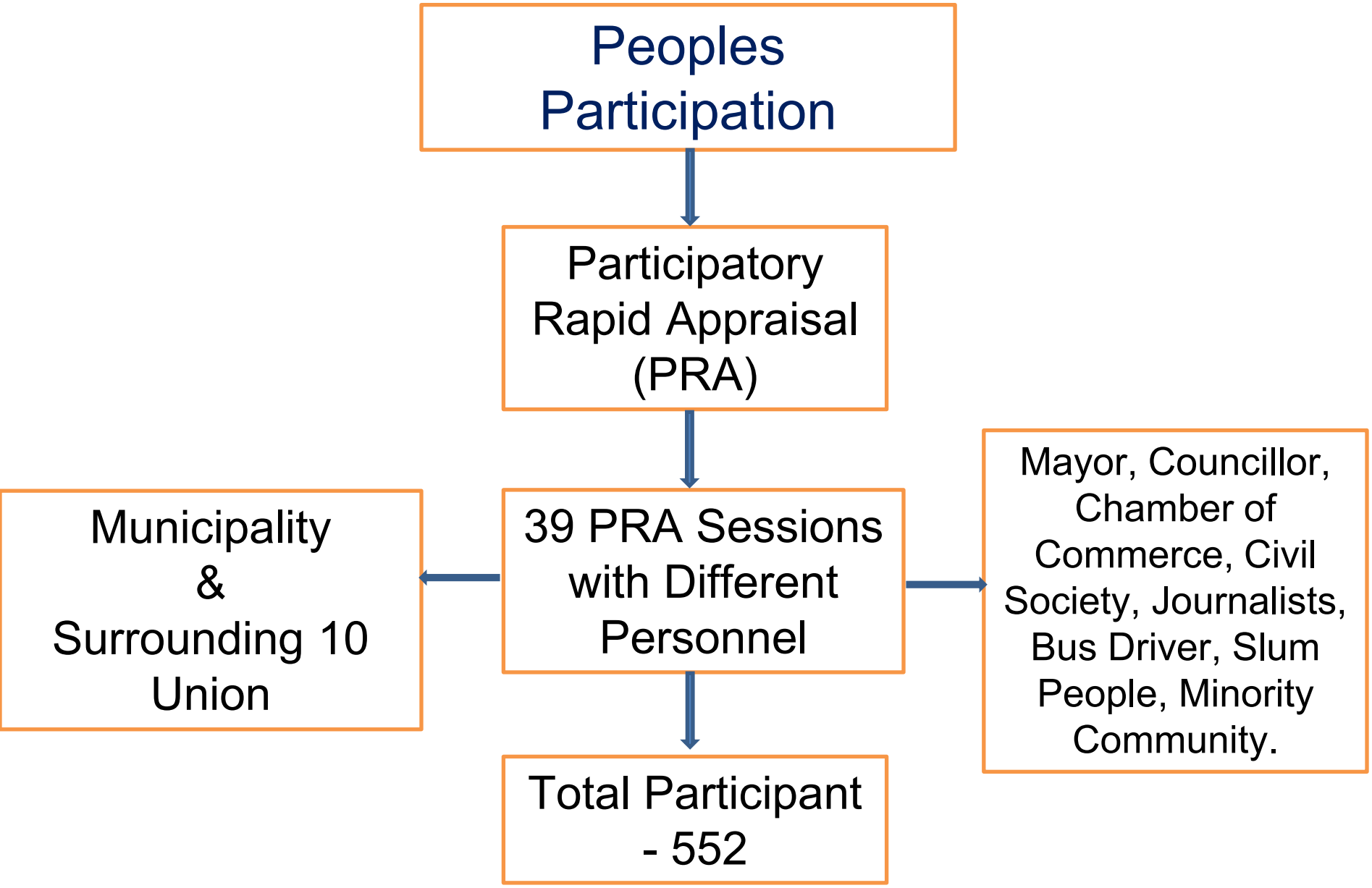
UGIIP

Municipality initiatives

Projects:

- **Pilot Project for Examining "Mainstreaming Climate Change into National Urban Policies"**
- **Implementing Jointly by UNESCAP, UNEP and UN-Habitat**

Stakeholder Analysis


Peoples Participation
Participatory Rapid Appraisal (PRA)
39 PRA Sessions with Different Personnel
Municipality & Surrounding 10 Union
Mayor, Councillor, Chamber of Commerce, Civil Society, Journalists, Bus Driver, Slum People, Minority Community.
Total Participant - 552

Involved stakeholders by Participatory Rapid Appraisal (PRA)

PRA has been in 21 wards at Municipality Label, 10 PRA in 10 Unions, and 10 with civil Society, business groups, slam peoples, minority community and others.

Policy Framework:

Policies for Main Flood Flow Zone (W/MFZ-1) Land development of residential, commercial and industrial development, except the provisions made under structure plan, including raising the level of land, via land filling, will be strictly prohibited.

- Permitted uses, provided that they cause on adverse hydraulic effect will be:
- Further expansion of rural homesteads will not be allowed to extend its boundary, which indicated in the structure plan.
- Agriculture
- Dry season recreation facilities
- Loading and unloading facilities
- Excavation of mineral deposits, including dry season brick works

Policy Framework:

Policies for Sub-Flood Flow Zone (W/SFZ-1)

Only agriculture and fisheries are allowed in these zones. Existing homesteads should not be extended beyond their present boundaries. Brick fields are to be relocated from these locations to maintain the integrity of the sub-flood flow zone. Land fill will not be permitted at centrally located sub-flood flow zone.

Policy Framework:

Policies for Natural Retention Area (W/NRA-1)

- No physical, social and economical development shall be allowed within the retention area designated in the structure plan, except to continue the agriculture particularly paddy growing activities.
- Existing rivers and khals are to be widening up to 100m immediately.
- Existing brick fields are to be relocated from the designated natural retention areas.
- For widening the existing water control structures (culvert, box culvert, bridge etc.) on the national and regional road network within the natural retention area should be redesigned and redeveloped according to the changing climatic scenario.
- To maintain the integrity of the natural retention area no further new or widening and extension of existing road network shall be allowed.

Challenges/Opportunities

SDG 2030
Goal 13: Climate Change

- **Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy.**

Challenges:

- Lack of Knowledge about Climate Change
- Proper guidance
- Making People Aware abut climate change and its effect
- Propose Policy guideline

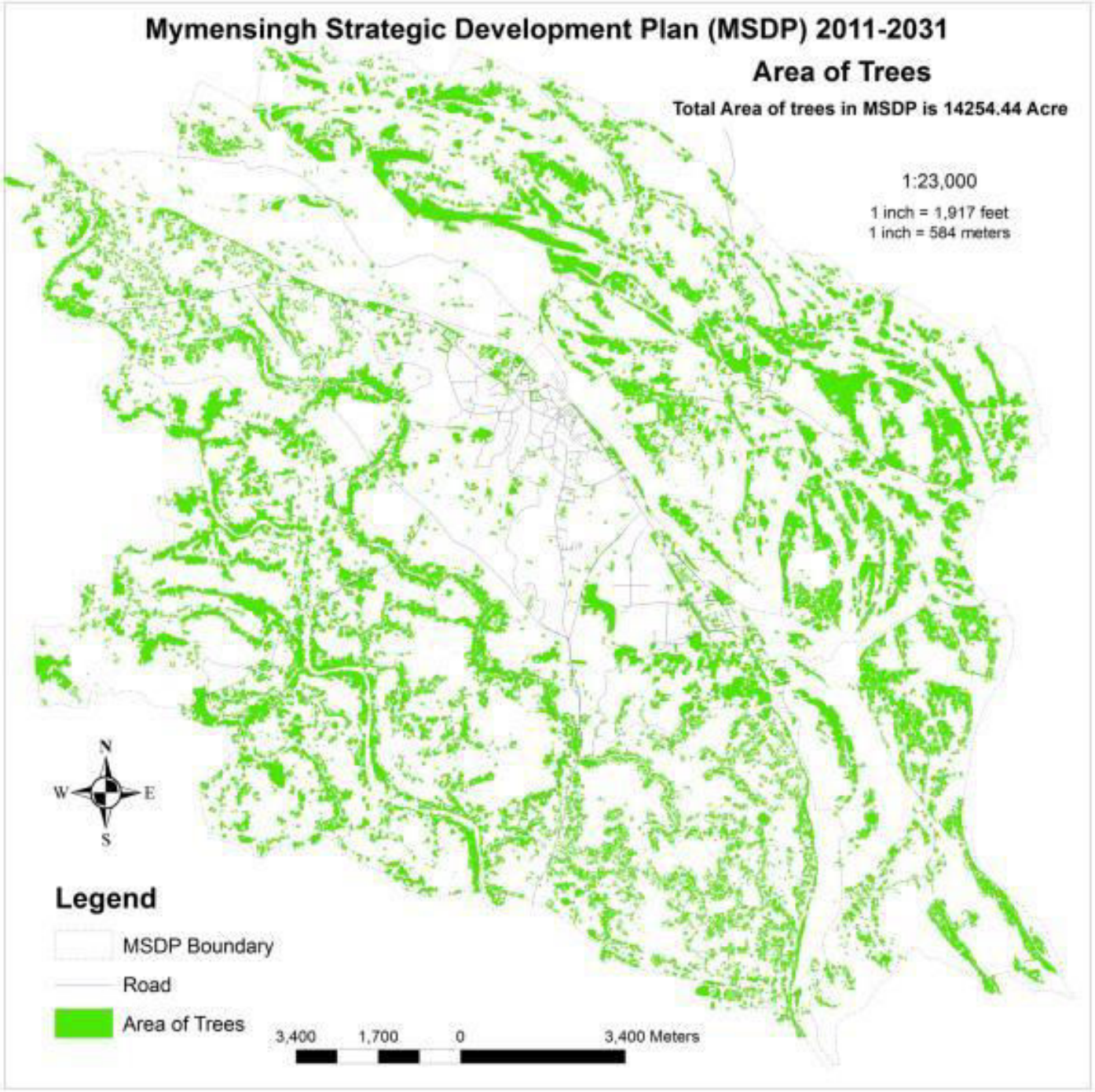
Opportunities

- Master Plan
- Water Management Policy (Water Act, 2013)

Policy Measure has been taken to reduce the effect of Climate Change:

- Preserve the Green Space (Tree and Open Green Space).
- Introduce Renewable Energy (Wave and Solar energy at Divisional New Town)
- Propose New Green Space as Regional Park

Tree

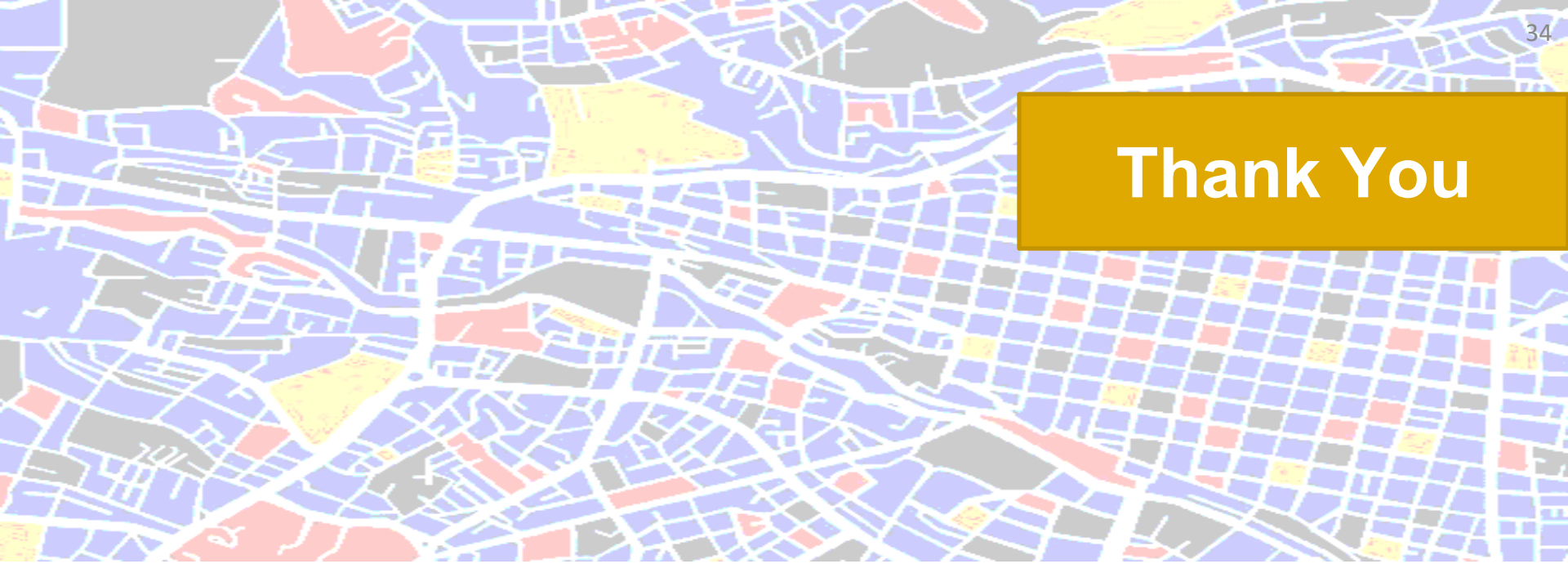

Mymensingh Strategic Development Plan (MSDP) 2011-2031
Area of Trees
Total Area of trees in MSDP is 14254.44 Acre
1:23,000
1 inch = 1,917 feet
1 inch = 584 meters
N
W
E
S
Legend
MSDP Boundary
Road
Area of Trees
3,400
1,700
0
3,400 Meters

Renewable Energy space at Divisional New Town

Regional Park

Learning from the Training

- Analyzing vulnerability more specifically.
- How to approach for a Climate change Planning
- How to make Climate Change Action Plan.
- Gather Knowledge about Circular/shared Economy.



Thank You

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