

INTRODUCTION TO PROPOSED DEMONSTRATION BASIN, NEPAL

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NEPAL'S PRIORITY ON WATER SECTOR

- **Most Important natural resources that can be utilized for Nepal's development**
- **Have a potential to irrigate all agriculture land and generate 43,000 Mw of hydropower**
- **If regulated can significantly contribute to enhance lean season flow in Ganges**
- **Can contribute flood disaster mitigation and improved navigation in a regional scale**

NEPAL'S PRIORITY....

- **Nepal has approved National Water Plan**
- **The Plan has**
 - **Identified 10 key areas for development.**
 - **Set targets for 25 yrs to each of these areas starting 2002**
 - **Recognized Integrated Water Resources Management as the key guiding principle for development.**

National Water Plan

- **Three areas of development**
 - **Security: Disaster Management, Environment Protection**
 - **Uses: Drinking Water, Irrigation, Hydropower, Tourism & Industries**
 - **Institutional Mechanism**

Institutional Mechanism

- **Functional Enhanced water-related information systems**
- **Appropriate legal system**
- **Regional cooperation for mutual benefits**
- **Appropriate institutional mechanism for water sector management**

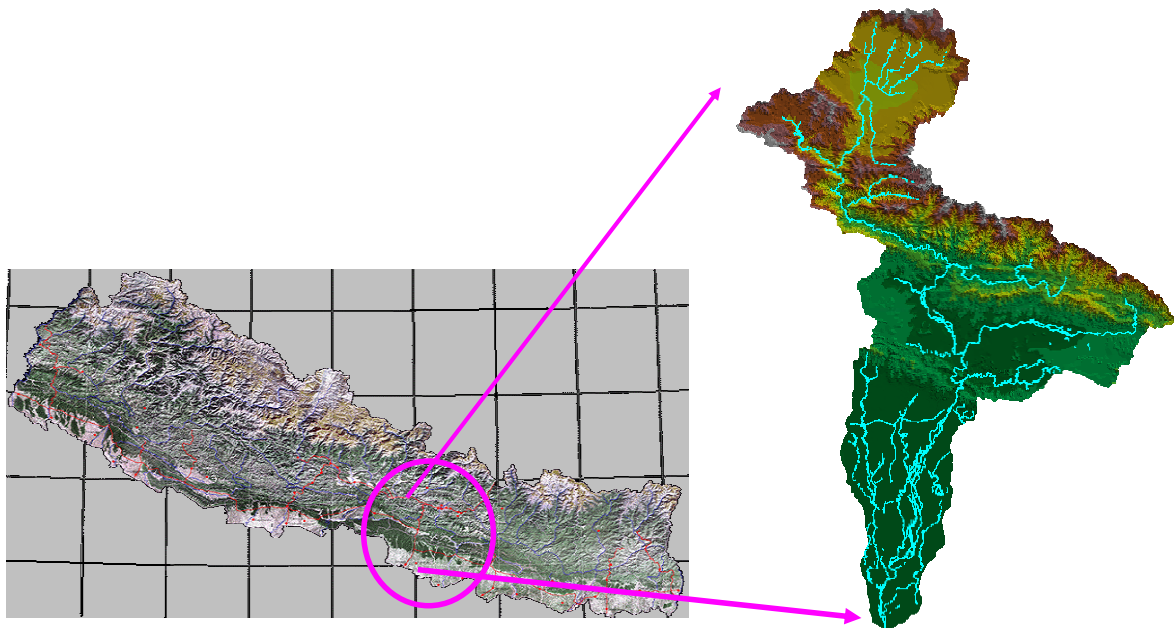
DEMONSTRATION BASIN

- **Demonstration Project is perfectly in line with the Government's policy and supports achieving the targets.**
- **Initially we have considered taking two basins for demo projects- Bagmati and Narayani**
- **Considering available human, financial and data resources and the socio-economic benefits, only one basin- Bagmati is proposed for demo project.**

BAGMATI BASIN

- Area : 3,700 sq.km
- Agriculture Area : 639 sq. km
- Population : 2 Million
- One of the middle sized rivers in Nepal
- Originates from lower mountain and passes through the two lower physiographic regions
- Important from the view point of water resources development, controlling pollution and flood damage mitigation
- Creates two of the most flood affected districts of Nepal- Sarlahi & Rautahat

Location Map : Bagmati Basin



AVAILABLE DATA

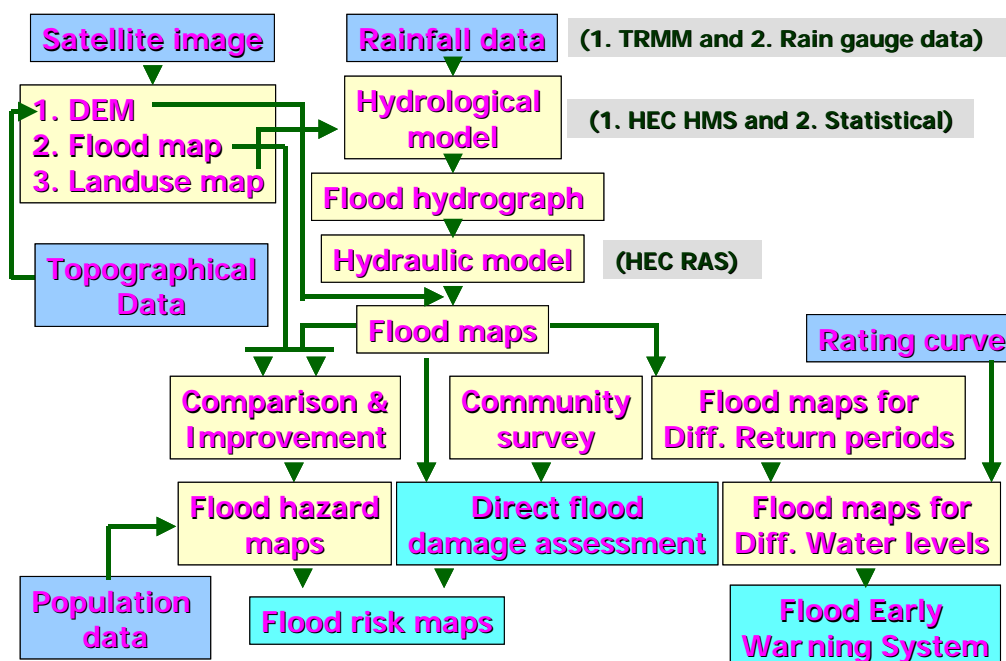
- Basin map- topographic, Transportation, Administrative boundaries, Settlement
- Stream Flow data (3)
- River Networks Map
- Land use and Vegetable Characteristics
- Soil Characteristics
- Soil Temperature (2)
- Precipitation(25), Air Temp, Humidity (4), Wind (4), Pressure(4), Evaporation (2)
- Water Use Inventory



Some works are already done in line with AWCI objectives:

- Integration of GIS data
- Inventory of Water uses
- Flood hazard maps for various return periods
- Land slide hazard maps
- With support from JAXA's Miniproject
 - Rainfall runoff modeling
 - Direct flood damage assessment /loss estimation
 - Preliminary Flood forecasting and early warning system based on Historical data

Methodology of Flood Forecasting



Need for Further Actions:

- **Establish a network of real-time data transmission using CDMA commercially available;**
- **Integrate this network to the central processing system;**
- **Develop tools to automate processing**
- **Integrate Techniques of downscaling global met info to the rainfall runoff model**
- **Constantly validate the flood warning to the observed data**
- **Extend this system Appropriate for IWRMP**

Thank you for the patience