

**Problem:** *Water Plans***Statement:**

The United Nations 1992 Earth Summit at Rio de Janeiro introduced Agenda-21; Chapter 18 has become an international guideline for water resources planning and management.

Since that time, there have been numerous examples of water resources planning in the United States and internationally. For this assignment, we will examine the following water plans:

- Turkey River Watershed (Iowa)
- State of California (2013 Plan)
- State of Texas (2017 Plan)
- India (Twelfth Five-Year Plan)

In class, you will pick one to review. After first reviewing portions of Agenda-21 Chapter 18 and your chosen water plan (see ICON Assignment page for details), identify and briefly list (in bullet format):

- a. List suggested processes and methodologies (in bullet format) for water planning from Agenda-21 Chapter 18.
- b. List the critical water issues/problems (in bullet-point format) that your water plan addresses.
- c. Comment on how planning process for your water plan compares with those described in Agenda-21 Chapter 18.

Submit your answers online in ICON (please add to this Word document and upload your solution in PDF format). On the assignment due date, bring a copy your answers to class to discuss with others.

**Solution:**

- a. Suggested processes and methodologies for water planning from Agenda-21 Chapter 18

Processes and Methodologies (within Integrated Water Resources Development and Management)

- Formulation of costed and targeted national action plans and investment programs
  - Methods: Interactive databases, forecasting methods, economic planning models.
  - Priorities for investment should take into account: (a) maximum utilization of existing projects, (b) new or alternative clean technologies, and (c) environmentally and socially benign hydropower.
- Integration of measures for the protection and conservation of potential sources of freshwater supply
- Develop interactive databases, forecasting models, economic planning models and methods for water management and planning (include environmental impact assessment)
- Optimization of water resources allocation under physical and socio-economic constraints

- Allocation through demand management, pricing mechanisms, and regulatory measures
  - Risk analysis for flood and drought management
  - Promote rational water use through public outreach and economic instruments
  - Mobilize water resources
  - Research on freshwater resources
  - Develop new supplies
  - Integrate Water Quality and Quantity Management
  - Water conservation
  - Support water-users groups to optimize local water resources management
  - Public Participation in decision-making, Especially women.
  - Capacity building from grassroots to global level.
  - Publicity
- b. Critical water issues/problems addressed in the chosen water plan
- **Problem to Solve:** Preparing for potential statewide water demands during the “Drought of Record” occurring in the next 50 years.
  - **Background:**
    - State of Texas faces a growing water shortage into the next half century given growth and infrastructure trends.
    - In this plan, state considers preparedness for water demands during a “drought of record,” or worse event to happen between years 2020 and 2070.
    - Considers projected demand given changes in state population, economy.
    - Considers projected supply given changes in storages (groundwater, surface.)
  - **Solutions:**
    - Presented solutions to decrease the gap between projected demand and projected supply.
    - Presented estimates for cost of these solutions
- c. Comments on the planning process
- **Followed UN Directives:**
    - Texas followed the directive of the UN by having local/regional teams develop local plans, which the state integrated to form a holistic outlook
    - Use social and economic models to help drive planning process
    - Supported research on their freshwater resources
    - Considered trends of all water sources in budgeting
    - Promotes water conservation during (“demand reduction”). 1/3 of Recommended Water Management Strategies (by type) are conservation-oriented
    - Promoted public awareness.
    - Considered “harmonization” of nation strategies (ie apply for federal funding).
  - **Differed from UN Directives:**
    - No flooding considered for the states over the same period
    - Risk analysis not provided in Executive Summary. (Not sure how similar the procedures were from planning district to planning district.)