Confederation of Indian Industry

CII-TRIVENI WATER INSTITUTE

Water Risk Assessment Tool

Corporate's Water "ATLAS" to Sustainability & Security

Reliability, adequacy and timeliness in availability of freshwater is a priority for business continuity, expansion and growth, given the increasingly changing climate and landuse patterns. To facilitate optimal and sustainable management of water and wastewater, CII-Triveni Water Institute offers an integrated total solution package for corporates using a Water Risk Assessment Tool.

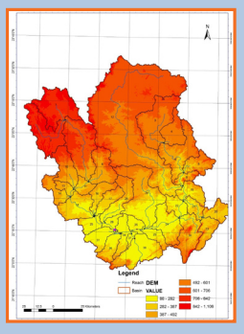
The Tool makes use of state-of-the-art integrated systems, such as **Decision-Support-Systems**, for assessing water-related risks, both at the plant and watershed levels. It takes **satellite derived information as inputs and uses GIS**-based techniques to analyze risks. Corporates need to appropriately take these risks into account while formulating strategies, to achieve sustainability, security and growth.

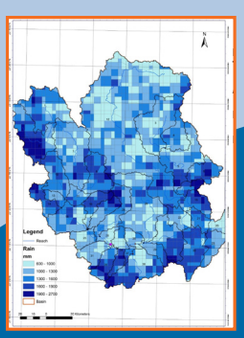
NEW

WATER ATLAS FOR COMPANY

To help businesses achieve sustainable water management, CII-TWI prepares WATER ATLAS containing Maps, Analysis, attribute information and more!! This includes

- Water Balance (watershed & plant levels)
- Watershed map covering supply chains
- Topography and Drainage maps
- Slope map; Land use/ land cover map
- Rainfall distribution map and analysis
- Groundwater status and groundwater flow direction map
- Strategy mapping including Rainwater Harvesting and Artificial Recharge
- Opportunity analysis

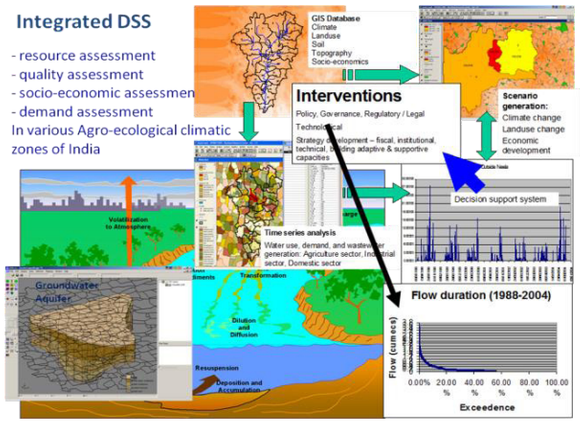




KEY BENEFITS

- Enhances business continuity
- Enables expansion & growth by minimizing risks to business from water side
- Provides social licence to operate
- Help meet regulatory compliances
- Achieve water security

INTEGRATED DECISION SUPPORT SYSTEM (DSS)



MODEL OUTPUT

Water balance components at various levels i.e. basin, sub basin or watershed level and at daily, monthly or annual interval.

- Runoff – water yields, flows
- Evapotranspiration
- Snow fall and snow melt
- Lateral flow
- Recharge
- Percolation
- Sediment yield
- Nutrients
- Fate and transport of pollutants in surface and groundwater systems

MODEL INPUTS

Spatial: Data on watershed characteristics, landuse, soil type, drainage network, and weather stations (location of rain gauges, runoff gauges, and weather monitoring stations);

ADVANTAGES

- Physically based modeling – integrates hydrological and hydro-geological evaluation tools.
- Enables computationally efficient and time continuous hydrological and groundwater estimation.
- Based on GIS and Remote Sensing information.
- Requires generally available information as input (both spatial and temporal).
- Capable of being used for ungauged watersheds.

APPROACH

A systematic, multi-faceted approach helps arrive at strategies for growth. It comprises:

I. **Watershed* delineations and characterisation for water resource evaluation**

The Tool derives water availability and quality for scenarios of **increasing resource variability, vulnerability and uncertainty**. The evaluation derives **water balance** at:

a. regional level (larger watershed level)
b. local/sub-watershed level (specific to company's watershed)
c. plant level including value chain i.e., supply chain + customer link

II. **Water resources evaluation** (components of the hydrological cycle) including **surface water flows and groundwater recharge.**

III. **Groundwater aquifer mapping and evaluating variability in recharge** (covers both natural & artificial recharge)

IV. **Groundwater quality assessment** to evaluate changes in the water quality over time

V. **Plant Water Audit** to help establish water balance, water use and wastewater generation for identification of opportunities for savings, recycle, reuse & recovery.

VI. **Identification of strategies / Interventions** for water / groundwater management including recharge and rainwater harvesting systems. Such measures assist the company, achieve water security and sustainable development.

* *Watershed: defined as an area of land that drains water, and dissolved materials to a common receiving body or outlet. The term is not restricted to surface water runoff and includes interactions with subsurface water and groundwater.*

OTHER APPLICATIONS OF THE TOOL

- Industrial siting
- Climate change impact on water resources
- Designing check dams, recharge structures
- Hydropower assessments
- Extreme event analysis e.g., Floods
- Sediment and contaminant transport in surface and groundwater

Contact us today for your

Water Atlas and strategize your business sustainability, security and growth

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