



Groundwater Ecosystem Services Valuation Project:

Making Groundwater Management Sustainable

Scope of the Project: Kamaghuna – Vatachhad, Kutchh, Gujarat*

Timeline: 12 months

CSR Activities Addressed: 1. Ensuring environmental sustainability; 2. Eradicating hunger and poverty; 3. Promoting preventive healthcare and sanitation and making fresh drinking water available

Purpose:

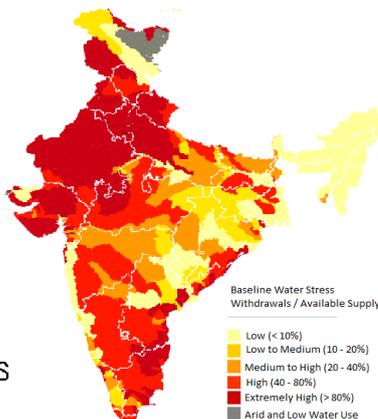
The objective of this project is to **estimate the economic value of underground freshwater reservoirs** in the target region. Freshwater is essential for life. It is at the core of economic & social development, and its availability is vital to maintain health, grow food, generate energy, manage the environment, and create jobs. Currently, India's groundwater reserves are being overexploited mainly for irrigation, notably in the States of Gujarat, Rajasthan, Haryana, Delhi, and Punjab (Rodell, 2009) – leading to irreversible depletion & contamination of ground water, which threatens India's food security, public health and long term development.

Background:

Groundwater withdrawals as a percentage of groundwater recharge

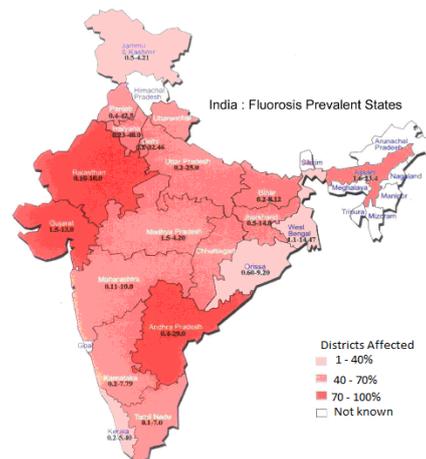
Source: World Resources Institute, 2015.

54%
of India
Faces
**High to
Extremely
High**
Water Stress



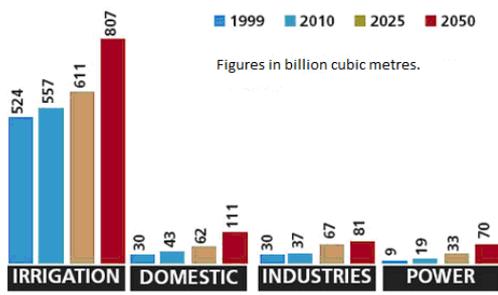
Fluoride Water Contamination in India

Source: UNICEF, 1999.



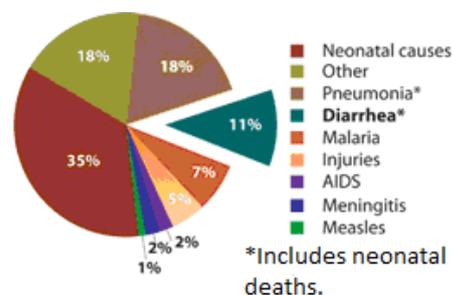
Demand and uses of freshwater in India

Source: UNICEF, 2013.



Infant mortality per disease due to water pollution

Source: Liu et al. Lancet, 2012



* Investors are free to suggest additional areas of interest for the conduct of the pilot project.

Proposed Activities:

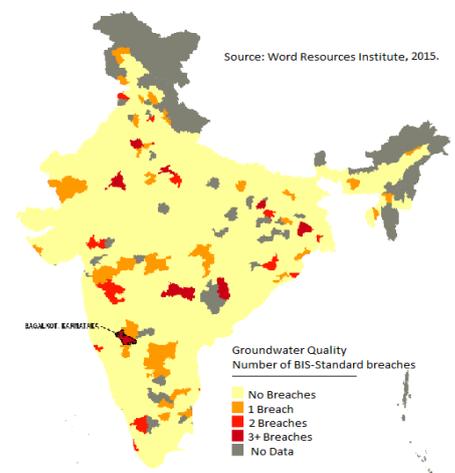
1. **Framework & Data Collection:** Mapping of groundwater levels and identification of beneficiaries, mainly based on secondary data, to be achieved through the following:
 - a. **Identification of key indicators** to be utilised to measure the conditions of groundwater ecosystem services.
 - b. **Collection of secondary data** on groundwater levels of the region, and identification of quantitative and qualitative trends of groundwater over the years.
 - c. **Identification of key beneficiaries** and listing out economic sectors dependent on groundwater availability (agriculture, industry, etc.).
2. **Computation:** Carrying out a detailed analysis of economic value that ground water provides to key beneficiaries. This would include benefits provided to key economic sectors as well as socio-economic benefits provided to the villages of Kutch district. The analysis will be performed based on a combination of primary and secondary data and will include mapping of the benefits of groundwater services and identification of the impacts of current depletion and degradation trends on regional economy, equity and environment
3. **Report:** Production of final report, including standardised methodology which is replicable in other contexts; identification of status of groundwater and main threats in Gujarat; and identification of the opportunities for corporate investment to improve groundwater conservation and management.

Expected Achievements:

1. Managing the risk of water scarcity by first recognizing potential gaps in supply and demand.
2. The implementation of effective, efficient and sustainable groundwater management practices in order to make perennial the availability of fresh water resources, thereby reducing poverty, improving human health and promoting economic development of the region.
3. The invigoration of India's public and private investments into sustainable water projects.
4. **The formulation of actionable recommendations for the State Government of Gujarat and the Gujarat Infrastructure Development Board, as well as other stakeholders, on vital strategies for sustainably managing groundwater so as to facilitate sound economic development and socio-environment prosperity.**

Supporting SDGs:

The proposed study will enable businesses and policy makers in evaluating and mitigating socio-environmental risks stemming from water scarcity and water pollution, and implement long-term growth strategies. The availability of fresh water underpins all SDGs. **SDG6** specifically targets the achievement of water availability, sustainable management of water, and sanitation for all[†].



More than **100 Million** people in India live in areas of poor water quality.

[†] www.unwater/sdgs