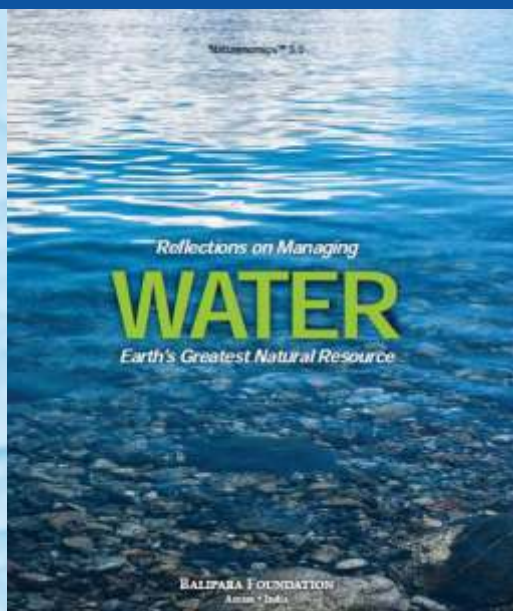


Reflections on Managing Water - Earth's Greatest Natural Resource



This is an appeal to all those who value and cherish water

Concept and Thought Leadership
Balipara Foundation



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BALIPARA FOUNDATION

Assam, India

(Since 2007)

Balipara Tract and Frontier Foundation (Balipara Foundation), is a not-for-profit NGO working with the mandate of conserving our natural heritage, and a vision of creating a biodiversity knowledge bank of the North Eastern Region of India.

The Foundation was conceived by Globally Managed Services and River Journeys & Bungalows of India.

It facilitates and drives community level involvement and employment /income generation through social entrepreneurship in Naturenomics™ initiatives that are economically self-sustaining and nurture interdependence between nature and economics.

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No single compilation on water can ever do complete justice to the varied aspects of this magical, critical yet often misunderstood and mistreated valuable resource.

This compilation is an attempt by those involved in its creation to pay homage to, and highlight several key challenges involving water, and more importantly addressing these.

What emerges is that the crisis is largely due to mismanagement rather than an actual shortage of water, and that it is possible to reverse the trend.

Reversing the trend

- Celebrate water
- Uphold principles of equity, rights and sustainability;
- Inform and involve people;
- Learn from case studies and bio-mimicry;
- Achieve breakthroughs through technology;
- Harvest rain and scale up artificial recharge;
- Bring efficiency in water use for agricultural production and urban supply and consumption;
- Be a water conscious and responsible industry;
- Stretch water use through multiple use of every drop; and,
- Create an enabling environment that nurtures innovation.



Chapter 1

WAR: The World's Aqua Resources

- The total volume of water on earth is about 1.4 billion km³, of which freshwater is

a 2.5 per cent.

- One of every five people on earth face water scarcity: As of 2012, 450 million people in 29 countries suffer from water shortages.
- The trans-boundary nature of water is increasingly being the cause of conflict across nations and within boundaries.
- There is an urgency need of change to enable water availability for nature, for people and environment.



Chapter 2

India's water can

- India has vast natural resources of water. Yet a database of these assets does not exist.

- Decades of neglect and misuse have resulted in a squandering away of this asset.
- India may soon move to a water stressed state despite being home to the perennial Himalayan and Peninsular rivers.
- The country's water future is uncertain. Increasing demand across various sectors and a rapidly changing climate has exacerbated the problem.



Chapter 3

Revering and celebrating water

- Water is intrinsic to every religion and belief globally.

It symbolises purity, strength, yet at the same time compassion and peace.

- Festivals offer a unique opportunity to experience Indian culture and its proximity with water.
- Rekindling our relationship with water through a confluence of religion, culture, belief and respect for its aesthetic nature can lead to its nurturing, and sustainable development.



Chapter 4

Water at work

- Water is required for food production, domestic use, industrial purposes, energy production, and to maintain ecological flows.

- Agricultural sector gets the lion's share of freshwater allocation - around 80 per cent.

- Groundwater is a major source of water, leading to its over-exploitation, even in mining.
- Pollution from the discharge of untreated wastewater threaten freshwater safety.
- Examples indicate that it is possible to manage water demand and increase water use efficiency.

Chapter 5

Water desecration

- Biological, organic and inorganic pollutants contaminate almost 70 per cent of surface water resources and a growing percentage of groundwater reserves. Only 21 per cent of the municipal sewage is treated in India: The remaining is disposed into waterbodies untreated resulting in pollution of rivers.



- As many as 19 states face groundwater contamination. Geogenic contaminants have affected groundwater in over 200 districts.
- Addressing pollution will require a mix of technological, financial, institutional and social measures.

Chapter 6

Wrath yatra – Fury of floods

- Floods affect over three million Indians annually: India is the second most flood-prone country in the



world.

- Floods cause huge loss of human lives, livestock, agricultural land and crops
- Increased frequency of urban flooding, primarily due to rapid and unplanned urbanisation is an emerging problem, further puts pressure on drainage systems.
- There is an urgent need for appropriate flood-control measures and land and water management practices to minimise floods.



Chapter 7

Damocles' sword – The spectre of drought

- Between 1801-2002, India experienced 42 droughts. A large part of the country – 68 per cent is prone to drought.

The situation is exacerbated due to deforestation, groundwater extraction and poor land and water management.

- Droughts take an economical social and environmental toll.
- Drought proofing is possible through a mix of water conservation, sound land and water management practises and allocations of water use in keeping with its availability.

Chapter 8

Rainwater harvesting - Harnessing the obvious

- India is twice blessed: With rain and a heritage of eco-region specific rainwater harvesting systems.
- Amnesia and a blatant disregard have led to both, ignoring rain as a source of water and a decline of its harvesting systems.

- The world over, rain is being harvested for its use and its management. Fortunately, a sprinkling of examples continues to survive here as well.
- There is a need to adopt and innovate on these practices at scale, so that water is available at low cost, rivers are rejuvenated and aquifers replenished.

Chapter 9

Linking life - Water and nature

- The life cycle and water cycle are one. Conservation of biodiversity is essential for sustaining life and water resources. And, this requires water.

A centre of mega diversity, biodiversity here is under threat, resulting in water scarcity and reduced human sustenance.

- The destruction of forests threatens marine and aquatic ecosystems comprising of mangroves and wetlands, disturbing the hydrological cycle.
- A healthy and diverse ecosystem provides both direct and indirect economic benefits. This needs to be conserved.



Chapter 10

Legal landscape of water

- The Indian Constitution does not specifically recognise a fundamental right to water. However, the Supreme Court of India has included it within the ambit of Article 21 of the Indian Constitution, which secures life and liberty of all persons.

- Right to access and use of water by private persons was originally recognised by common law through riparian rights. It however, left out the landless.
- The Supreme Court has been active in recognising the rights of the citizens to access water resources and to ensure pollution free. However, there is a need to make access to water a legal right.

Chapter 11

Can water security be assured?

- India's water management record leaves a lot to be desired. Over time water has been abused qualitatively and quantitatively.

- Urgent action is required as we head towards the point of no return. A business as usual approach will no longer provide solutions.
- Water security is possible, provided we get serious.
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Perspectives

- This series of essays briefly captures thoughts and actions of eminent people.
- These include names such as Lester R. Brown, Naina Lal Kidwai, Ashok Khosla, William McDonough, Shyam Saran, and S. Ramadorai for providing food for thought and ideas for the way forward.



About Us



Indira Khurana

A PhD in biochemistry from Guwahati University, Assam, Indira is now working on development issues relating to natural resources management, particularly water.

Her successful efforts are related to water resource management, particularly rainwater conservation; highlighting the inequitable access to water and sanitation and the imperative for legal rights; abolition and rehabilitation of manual scavengers; and, the need to conserve and use indigenous domesticated biodiversity. Her constant efforts are to challenge and update herself through travel, reading and people engagement.

Her efforts find their way into publications and public discourses, leading to improved policies.

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Romit Sen

An environment professional, Romit has been associated with development organisations, international aid agencies and industry chambers working in the area of water and sanitation, industrial water management, rural development

and livelihood.

He has advised Ministry of Water Resources on their water use efficiency work and has authored several reports, and papers especially focusing on degradation of natural resources.

A Masters in Natural Resource Management with nearly 10 years of experience in water sector, his expertise is in areas of training, capacity building, research and analysis of policies and programs.

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Ranjit Barthakur

Ranjit Barthakur is a leading social entrepreneur and the Founder of Balipara Foundation. He has pioneered various social initiatives and innovations in North Eastern India. He is committed to promoting the idea that

environmental preservation and economic development can go hand-in-hand together. Ranjit is also instrumental in establishing Club of Rome - India.

His areas of interests include health, education, culture, skill development and environment protection. His passion for the environment has roots in the North East from where he comes and was what made him launch the Naturenomics™ series. Naturenomics™ relates to capital formation through the creation of ecologically compliant assets in a sustainable manner. The first publication of Naturenomics called Kaziranga Inheritance was co-authored by him. His connect with water relates to childhood memories and a commitment to nurture this priceless gift from nature.

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Shilpi Jain

A content and communications professional, Shilpi has been associated with government, international aid agencies and corporates. She has managed the content for a sanitation portal where she played a key role in cultivating new content. With nearly 20,000 content pages, today, the portal features among the top sites for someone looking for sanitation news.

An Economics Honours graduate from the University of Delhi, Shilpi has worked in both the print and digital media formats and strives to integrate various technologies and tools in her work. As someone who loves to juggle her time between the online world and family, she continues to focus on creating a niche for the organisation where she works, enhance customer satisfaction and increase self-motivation.

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Anish Dayal is an advocate practising in the Supreme Court of India and the Delhi High Court. As part of his legal practice, he has been actively involved in advising on matters relating to policy and legislation on the mining industry and issues of sustainable development.

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