

INDIA

Shared Challenges for Nature and People



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Analysis Findings



Nearly all the top challenges to nature are linked to critical challenges for people. Together, these challenges present an opportunity to work towards a common agenda, informed by science, through which economic development and nature conservation can be pursued concurrently.

The shared challenges point toward 'vicious cycles,' whereby degradation of nature impoverishes people, which in turn further accelerates environmental degradation. This threatens the past and future progress on human wellbeing in India.

There is significant potential to address human health concerns, particularly related to sanitation, dietary risks and air pollution, through nature conservation.

Because there is such a strong potential for conservation interventions to leverage positive impacts for both people and nature, **there is an urgent need for more coordinated actions between the nature conservation and human development sectors.**

Pursuing economic development and nature conservation are often viewed as contradictory goals. However, a thriving nation needs both a flourishing economy and a healthy planet.

India is on a path of rapid economic development—one that is needed to eliminate poverty and expand access to basic amenities such as water, sanitation, energy, food and health to millions of its people. However, economic development that degrades natural systems will undermine its own long-term growth as many economic sectors, including agriculture and industries (e.g. manufacturing), are critically dependent on nature and its resources. In this context, creating win-win solutions for both human development and nature conservation is imperative.

Leaders from over 150 countries, including India, committed themselves to the Sustainable Development Goals (SDGs) in September 2015. These goals recognize the imperative for human development and environmental conservation. In this context, The Nature Conservancy (TNC) carried out a global scientific analysis to identify key challenges for people and nature in order to understand how both can simultaneously thrive on the planet while achieving the SDGs. TNC then conducted a similar but focused analysis for India to identify the most important linked challenges affecting people and nature in the country.

The analysis unequivocally demonstrates that people and nature in India face shared challenges and that solutions that link development and the environment are vital. The key findings from the analysis are listed on the left.

THE ANALYSIS SOUGHT TO ANSWER THREE FUNDAMENTAL QUESTIONS:

What key challenges are people in India facing today and in the near future?

What key challenges is nature in India facing today and in the near future?

Which of these challenges are connected and how?

Analysis

Methodology

At the outset, the analysis identified primary interests for people and nature as shown in **Figure 1**. Interactions of these interests with trends related to climate change and socioeconomic changes were also considered. To capture the best available and most current information, a wide variety of technical sources were analyzed, including datasets, peer-reviewed literature, synthesis analyses from reliable and respected sources, and national reports and databases.

Challenges for Nature

The top 4 challenges to nature in India, based on the percentage of threatened species affected, are shown in **Figure 2**.

Overuse of biological resources, especially harvesting of fuelwood and fishing, have a dominant impact across all ecosystems.

Agriculture activity, particularly crop and livestock farming, is a significant challenge for terrestrial and freshwater ecosystems.

Habitat conversion for urban development is already a significant challenge and likely to become stronger in the coming years.

Pollution, mainly from agriculture and domestic sources, is a major challenge for freshwater and marine systems.

Challenges for People

Although meaningful progress has been made to improve human wellbeing across multiple dimensions in the country, serious challenges remain to meet the current and future demands, particularly in meeting basic human needs. Some of the major challenges for people, predominantly in rural areas, are:

An estimated 600 million people rely on low-quality and highly polluting solid fuels for energy (NSSO 2015).

Approximately 800 million people lack access to improved sanitation facilities (World Bank 2017).

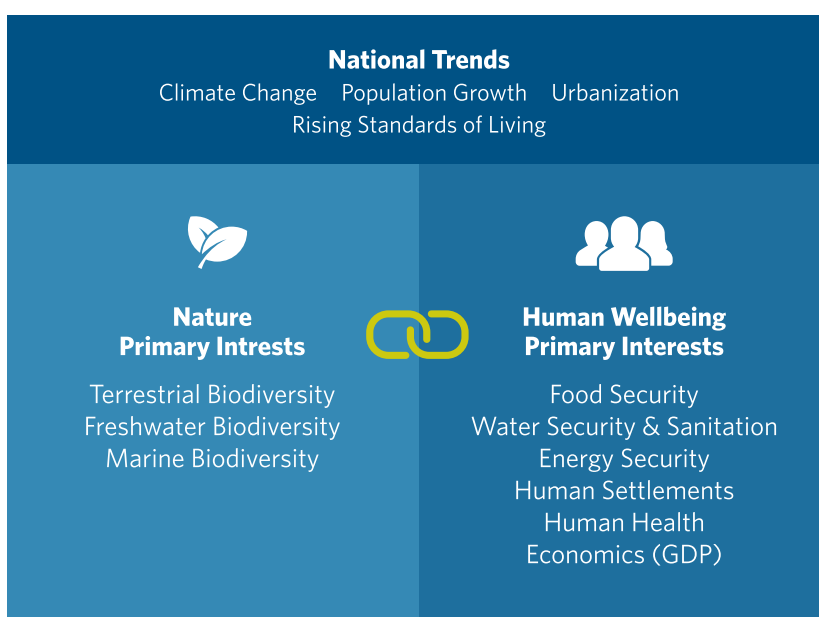
More than 600 million people suffer from multidimensional poverty (MPI 2016).

More than 200 million people are undernourished (FAO 2016).

Approximately 230 million people lack access to electricity (IEA 2015).

Additionally, four of the top six risk factors to human health in India are related to the natural environment (**See Figure 3**).

FIGURE 1
Conceptual framework used for the analysis.



MAJOR DATASETS AND REPORTS USED FOR ANALYSIS

Nature Interests
IUCN Red List of Threatened Species, Forest Survey of India, MoEFCC, PLoS One, PNAS, Nature

People Interests
Census of India (2011), Reports from NSSO, MoA, MoEFCC, MoSPI, Central Water Commission; EPW, Science, International Energy Agency, FAO, World Bank

FIGURE 2
 Top 4 challenges to nature in India based on the number of threatened species affected.

Total number of species assessed = 8264

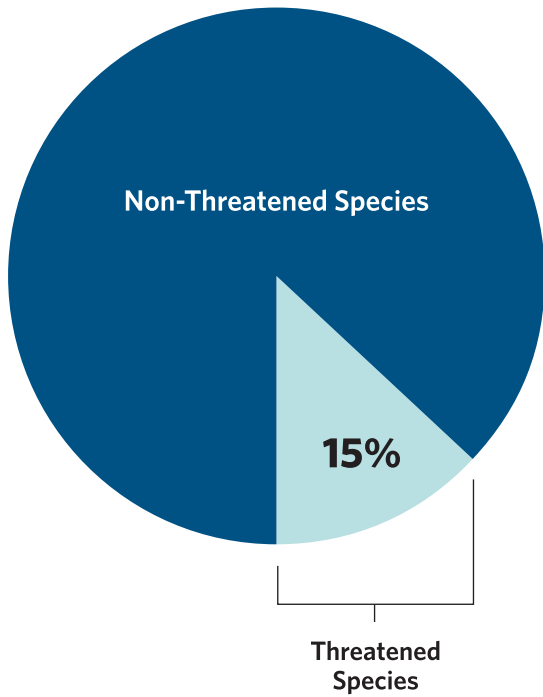
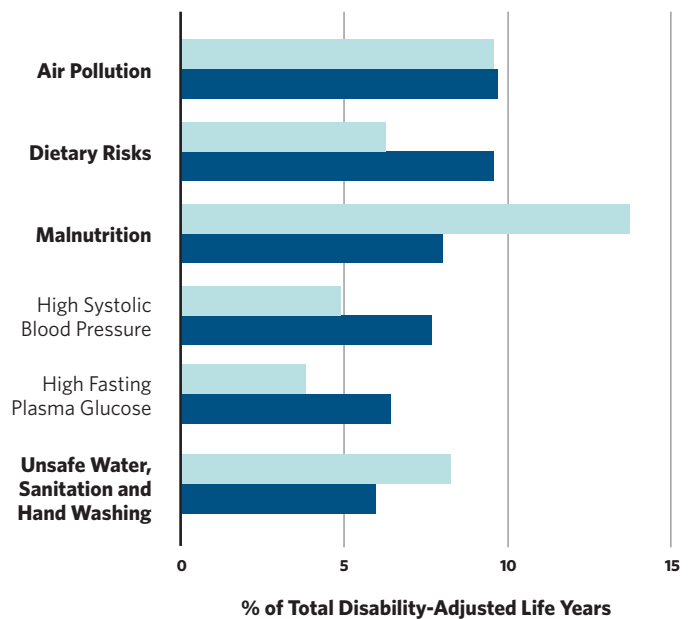


FIGURE 3
 Top 6 challenges to human health in India.
 Source: Forouzanfar et al. (2015).

A Disability-Adjusted Life Year (DALY) can be thought of as one lost year of "healthy" life. It is used to indicate the gap between current health status and an ideal health situation where everyone lives to an advanced age, free of disease and disability.

■ 2000 ■ 2015

Health factors closely linked to natural environment are shown in **bold**.



Shared Challenges for Nature and People in India

Out of the individual sets of challenges faced by people and nature, seven challenges have the strongest scientific evidence connecting people and nature.



High Agricultural Inputs and Food Consumption

While dietary risks and malnutrition remain among the top challenges for human health, high resource requirements (land, water, chemicals and energy) for crop and livestock production are driving a cascade of major challenges for terrestrial (habitat conversion), freshwater (water pollution and withdrawals) and marine (water pollution) systems. Finding solutions that increase availability of food and enhance livelihoods, while maintaining integrity of land that underpins food production, is an urgent challenge.

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Energy Impacts on Air Pollution

Expanding access to clean energy will simultaneously benefit human development and nature conservation. Health problems caused by air pollution are a major health burden and are strongly linked to energy sources. Concurrently, current energy extraction practices for fuelwood is a critical challenge for terrestrial and freshwater biodiversity.

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Deficient Sanitation and Wastewater Treatment

Sanitation lags far behind the progress made on overall human development in India, with unrealized co-benefits for nature. Insufficiently treated domestic and industrial wastewater endangers safety of human water supplies and leads to poor hygiene while contributing to malnutrition. This insufficient wastewater treatment is also a top challenge for freshwater and marine biodiversity.

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Unsustainable Fisheries

It is vital to implement sustainable fisheries management to conserve marine and freshwater biodiversity and to meet the projected increase in demand. Fish and seafood are sources of high-quality protein and livelihoods for millions of Indians. Unsustainable fishing practices are, however, the biggest challenge to marine and freshwater biodiversity, driven by overexploitation, harvest of juvenile fish and increasing by-catch.

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Climate Change

Climate change is a major crosscutting concern for people and nature. It is projected to amplify non-climate challenges already present across all human wellbeing and nature dimensions in India, including exacerbating livelihood insecurity and migration, extreme weather events and disasters, food insecurity through volatile prices and production, and water management.

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Expanding Footprint of Human Settlements

Human settlements are expanding in areas with significant impacts to both people and nature. While urbanization has substantial benefits for both people (economic opportunities) and nature (forest regeneration in rural areas), expanding human settlements are disproportionately located in ecologically sensitive areas where habitat conversion drives top challenges for all natural ecosystems. These patterns of settlement expose more people and assets to risk of natural disasters, exacerbated by climate change.

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Energy Expansion and Sprawl

Expanding energy access is a key development objective to eliminate poverty, enhance livelihoods and spur economic development. Meeting India's energy demands in economically, environmentally and socially acceptable ways will require managing complex tradeoffs at the food-water-energy nexus. While projected increases in extraction and use of coal could intensify existing challenges for people and nature, rapid expansion in renewable energy—although supporting transition to a low-carbon future—also has associated challenges for freshwater and terrestrial systems, which could be mitigated with careful land planning.

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These results indicate that there are significant, tangible, and evidence-based linkages between critical challenges facing people and nature in India. Coordinated actions can help deliver conservation-based human development outcomes in India.

Synergies with Ongoing Policy Initiatives

A shared development-conservation agenda emerging from such an analysis can help advance various ongoing policy initiatives and likely lead to more effective outcomes by bringing about systemic change. The examples below demonstrate how such an agenda can be considered in some of the existing policies.

Sustainable Development Goals

Disentangle the complexity of SDGs by integrating different goals.

Swasthya Raksha/NRHM

Address human health concerns by recognizing the role of nature.

Smart Cities/AMRUT

Harness benefits of nature to make cities resilient and livable.

Namami Gange

Manage river flow along with sewage for spiritual, economic and ecological benefits.

Renewable Energy

Advance renewable energy on lands with low social and ecological values.

Pradhan Mantri Ujjwala Yojana

Increase access to clean cooking fuels to benefit human health and ecology.

MGNREGS

Conservation-based activities can augment livelihoods while benefitting nature.

Swachh Bharat Abhiyan

Enhance access to sanitation to improve hygiene and reduce pollution.

DDU Gram Jyoti Yojana

Clean and continuous power in rural areas will lead to food and nutritional security with holistic development.

NRHM: National Rural Health Mission

AMRUT: Atal Mission for Rejuvenation and Urban Transformation

MGNREGS: Mahatma Gandhi National Rural Employment Guarantee Scheme

The Nature Conservancy (TNC)

Established in 1951, The Nature Conservancy is the largest conservation nonprofit in the world that works to protect ecologically important lands and waters for nature and people. The mission of The Nature Conservancy is to conserve the lands and waters on which all life depends. We are a science-based organization that partners with governments, businesses and other NGOs to find solutions to the greatest challenges for nature and people. With 3,700 staff members, including 600 scientists, we are at work in nearly 70 countries (including China, Indonesia, and Brazil) on six continents. We address threats to nature and people involving climate change, oceans, fresh water, lands and cities. We are among the few organizations that pursue a shared nature-people agenda and have demonstrated across different economies that conservation and development can be pursued in tandem.

The input for this policy brief has been derived from The Nature Conservancy's analysis conducted on Shared Challenges for People and Nature in India.

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