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LIVING PLANET MONITOR

SOUTH ASIA

Monitoring Our Commitment to Sustainable Food Systems, Land Conservation, Biodiversity, and Water Justice.

The *Living Planet Monitor* provides an overview of the situation in a particular continent by monitoring indicators on food security, water resources, land use, and climate resilience. It is a key instrument for faith communities to stay informed about the current situation, share good practices and projects led by church-based organizations, and offer hope and courage to transform the situation.

World Council of Churches

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Monk crossing a suspension bridge in Bhutan.

Photo: Unma Desai.

Foreword

I am delighted to write the foreword for this third issue of the *Living Planet Monitor* of the World Council of Churches under the Land, Water and Food Advocacy programme of the Living Planet unit. The previous two editions have resonated well with our member churches, especially in the Africa region, providing meticulously researched information on the state of land, water, and food vis-à-vis climate change in the region, as well as faith stories of resistance.

South Asia stands at a decisive crossroads. Home to nearly one-quarter of the world's population, the region is marked by extraordinary cultural, ecological, and spiritual richness. At the same time, it is one of the regions most exposed to the converging pressures of climate change, environmental degradation, and deep social inequality. Extreme heat, floods, droughts, sea-level rise, and ecosystem loss are no longer distant threats; they are lived realities for millions of people whose lives and livelihoods depend directly on land, water, and food.

For people of faith, these realities cannot be understood as merely technical or environmental challenges. They confront us with profound ethical, moral, and spiritual questions. What does it mean to care for creation when the most vulnerable bear the heaviest burdens of ecological harm? How do we respond when access to fertile land, clean water, and sufficient food is shaped by poverty, discrimination, gender inequality, and historical injustice? And how do faith communities witness to hope and responsibility in a world marked by both abundance and exclusion?

This South Asia edition of the *Living Planet Monitor* addresses these questions with clarity and conviction. It demonstrates how environmental pressures in the region are inseparable from questions of justice, dignity, and human rights. National averages often conceal stark inequalities—between urban and rural areas, between coastal and inland regions, and across lines of caste, class, gender, and ethnicity. At the same time, the report bears witness to resilience: communities protecting forests and water sources, women sustaining food systems under conditions of scarcity, and churches and faith-based actors standing alongside those most affected by ecological disruption.

The *Living Planet Monitor* is more than an assessment of trends and indicators. It is an invitation to discern the signs of the times and to act faithfully in response. By bringing together evidence-based analysis and testimonies from the ground, this publication seeks to equip faith communities, policymakers, and civil society with insight, moral courage, and a renewed commitment to ecological and social justice.

As the World Council of Churches continues its pilgrimage of justice, reconciliation and unity and as we enter the Ecumenical Decade of Climate Justice Action, this South Asia edition calls us to deepen solidarity across borders and traditions. May it inspire informed engagement, prophetic advocacy, and concrete action—so that land, water, and food may sustain life in dignity, and so that hope may take root even in times of profound uncertainty. As the Psalmist reminds us, "The earth is the Lord's, and everything in it, for he founded it on the seas and established it on the waters" (Psalm 24:1–2). Let us seek to serve, protect and sustain God`s creation.

Rev. Prof. Dr Jerry Pillay
General Secretary
World Council of Churches

Introduction

The *Living Planet Monitor* is a key instrument of the World Council of Churches' commitment to ecological justice and sustainable development. Rooted in the work of the Life, Justice and Peace programme and the Commission on Climate Justice and Sustainable Development, the Monitor brings together data, analysis, and lived experience to illuminate how land, water, and food systems shape human dignity and the integrity of creation.

This edition, on South Asia, is published at a moment of acute urgency. Across the region, environmental pressures are intensifying under the combined weight of climate change, economic crises, political instability, and demographic shifts. Yet these pressures do not affect all people equally. Long-standing inequalities in access to land, water, and food—shaped by class, gender, caste, ethnicity, and geography—continue to determine who benefits from development and who bears its costs.

Approaching these realities through a justice lens, *Living Planet Monitor: South Asia* recognizes that environmental degradation is rarely accidental or evenly distributed. Instead, it is closely linked to patterns of power, governance, and exclusion that shape how natural resources are controlled and whose voices are heard in decision-making. By critically interpreting indicators rather than treating them as neutral facts, the Monitor seeks to illuminate the social and ethical dimensions behind the data.

At the same time, this publication highlights the transformative role of faith communities. Across South Asia, churches and faith-based organizations are accompanying communities affected by water scarcity, land insecurity, food injustice, and climate shocks. Their work demonstrates that ecological justice is not only about diagnosis, but also about hope, agency, and collective action rooted in faith.

As the World Council of Churches embarks on the Ecumenical Decade of Climate Justice Action (2025–34), this South Asia edition affirms that struggles for land, water, and food justice are central to our global pilgrimage of justice, reconciliation, and unity. It invites churches, policymakers, and partners to engage critically with the evidence presented here, to listen attentively to voices from the ground, and to act together for the flourishing of creation and the dignity of all people.

Kudos to the editorial team led by Dinesh Suna, programme executive, Ecumenical Advocacy for Land, Water, and Food Justice, and Maike Gorsboth, the managing editor of the *Living Planet Monitor*. We hope this publication will inspire our member churches to become involved in innovative and faith-driven action to protect people and planet.

Rev. Dr Kenneth Mtata
Programme Director
Life, Justice and Peace
World Council of Churches

Athena Peralta
Director
Commission on Climate Justice and
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Photo: Paul J[illegible]ey/Life on Earth

Pakistani man working in his fields in Mirpurkhas, Sindh, where bonded labour in agriculture remains a form of modern slavery shaped by unequal land ownership and the power of large landowners.

Editorial

Dear readers

After two successful editions of the *Living Planet Monitor* focusing on Africa, we are pleased to present *Living Planet Monitor: South Asia*, part of an ongoing publication series of the World Council of Churches that explores the interconnections between land, water, food, and justice in different world regions. Each edition seeks to combine robust data analysis with grounded perspectives from communities, faith actors, and partners who are responding to ecological challenges in their local contexts.

In the pages that follow, readers will find regional analysis and country spotlights that examine key trends in land use, water resources, and food systems while critically reflecting on what national indicators can—and cannot—tell us. Alongside data tables and visualizations, the Monitor places strong emphasis on interpretation, highlighting how environmental impacts are unevenly distributed, how marginalized communities are disproportionately affected, and how gender, caste, and livelihood patterns shape vulnerability and resilience.

The following is the structure of this report.

- **Chapter 1** introduces the indicator framework used in the *Living Planet Monitor* and sets out a critical, justice-aware approach to interpretation, emphasizing the limits of national averages and the importance of context.
- **Chapter 2** translates these indicators into regional patterns, highlighting shared pressures, key contrasts, and structural tensions shaping land, water, and food systems across South Asia.
- **Chapter 3** applies the regional analysis in country spotlights that combine indicators with political, social, and ecological context to show how environmental pressures are experienced differently across countries.

Island settlement in Bangladesh.

- **Chapter 4** presents faith-in-action stories that ground the analysis in lived realities and illustrate how faith-based actors accompany communities, strengthen dignity and rights, and build resilience in practice.

- **Chapter 5** concludes with a theological reflection that brings the evidence and experiences presented throughout the report into dialogue with faith-based understandings of justice, hope, and care for creation.

Across all chapters, indicators are not treated as stand-alone measures but as entry points into questions of inequality, governance, and lived experience.

Living Planet Monitor: South Asia was developed through close collaboration with researchers, faith-based organizations, and civil-society partners across the region. Their contributions help anchor the analysis in lived realities and bring forward stories of action and hope—from community-led water stewardship and agro-ecological practices to advocacy for land rights and food sovereignty. We extend our thanks to the interns who contributed background research and data support during the preparation of this edition.

We see this publication as both a resource and a platform: a resource for informed engagement by churches, policymakers, and advocates, and a platform that amplifies voices often missing from dominant environmental narratives. At its core, the Monitor reflects a conviction that ecological sustainability cannot be separated from social justice, and that faith communities have a vital role to play in bridging evidence, ethics, and action.

We are grateful to all contributors and partners who made this edition possible, and we invite readers to engage with it critically, prayerfully, and actively. May it strengthen dialogue, solidarity, and collective efforts toward a more just and sustainable future for South Asia and beyond.

If you have examples of good practices from your faith community, we would love to receive them and, if possible, include them in our future publications.

On behalf of the editorial team,

Dinesh Suna
Editor
Programme Executive
Ecumenical Advocacy for Land, Water, and Food Justice
World Council of Churches

Maike Gorsboth
Managing Editor
Living Planet Monitor

Photo: Zakaria Joy

Photo: Zakaria Joy

Aerial view of rice fields in Bangladesh.

1. Understanding Our World Through Indicators

In today's interconnected world, data plays a powerful role in shaping how problems are understood and which solutions are considered legitimate. *Living Planet Monitor: South Asia* draws on internationally recognized indicators to examine land, water, and food systems across the region. These indicators help make large-scale patterns visible, allow comparison across countries, and support evidence-based dialogue.

At the same time, this publication starts from a clear premise: indicators are tools, not truths. Behind every data point lies a lived reality shaped by history, power relations, social norms, and ecological context. Access to fertile land, safe water, and adequate food is never determined by availability alone, but by who has the authority to decide, control, and benefit. The purpose of the *Living Planet Monitor* is therefore not only to present indicators, but to interpret them critically—linking numbers to justice, governance, and human dignity.

Throughout this report, indicators are used as entry points into deeper questions: Who benefits from progress, and who is left behind? Which forms of inequality are reinforced or reduced? And how do environmental pressures intersect with discrimination, exclusion, and vulnerability? By holding data together with lived experience, the *Living Planet Monitor* aims to support informed engagement, ethical reflection, and action rooted in justice.

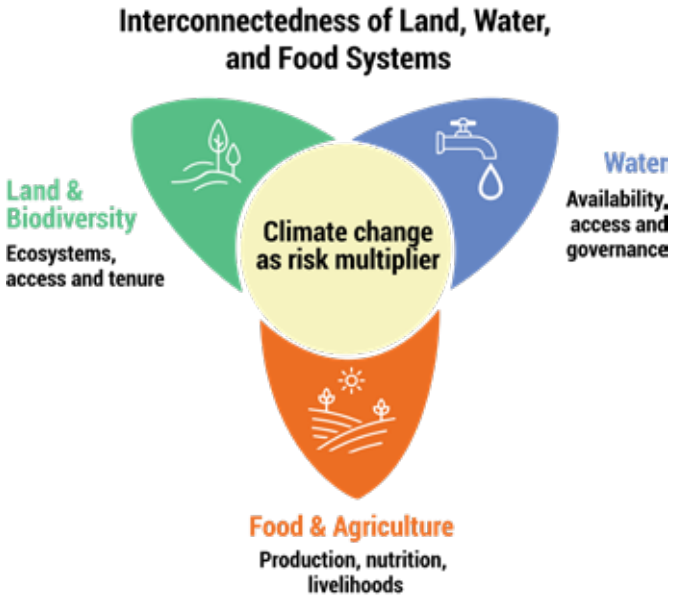
1.1 How the indicators work

The indicators in this publication are organized around three interlinked themes that shape human and ecological wellbeing in South Asia: land and biodiversity, water resources, and food and agriculture. Each theme captures a different dimension of sustainability and justice. Taken together, they offer a structured way to understand complex and interconnected realities.

Land and biodiversity indicators highlight how ecosystems are changing and how access to productive land is distributed. They reflect pressures from agricultural expansion, deforestation, land degradation, and biodiversity loss while also pointing to inequalities in land control—particularly gender disparities and the marginalization of Indigenous and customary land users—that shape livelihoods and long-term resilience.

Water resources indicators distinguish between physical availability of water and people's access to water services. This distinction is crucial. Water availability does not automatically translate into safe, affordable, reliable, and accessible water for all—key components of the human right to water. Governance arrangements, infrastructure, and power relations—including the allocation of control and ownership between public authorities and private actors—strongly mediate who can access water for life and livelihoods.

Food and agriculture indicators focus on nutrition outcomes, agricultural productivity, and the structure of rural livelihoods. They reveal both gains and fragilities in a region where climate impacts, price volatility, and structural inequality can rapidly undermine food security, even when aggregate production is high.



Across all three themes, indicators reflect not only environmental conditions but also underlying social and economic structures. **They point to questions of power and inequality**—such as who owns and controls natural resources, how access to water is shaped, whose labour sustains food systems, and whose needs are prioritized. Interpreting indicators without attention to these dimensions risks obscuring injustice rather than illuminating it.

Climate change as a cross-cutting driver

Climate change influences land, water, and food systems simultaneously. Rising temperatures, shifting monsoon patterns, glacier melt, sea-level rise, and more frequent extreme events intensify existing pressures rather than evenly distributing risks. Climate change therefore appears throughout this report as a cross-cutting risk multiplier, not as a separate thematic pillar. Chapter 2 introduces a climate vulnerability index to provide a regional overview of how exposure, sensitivity, and structural constraints intersect across South Asia.

Why national averages can be misleading

National-level indicators often suggest progress, yet they can conceal deep inequalities within countries. Progress toward safely managed services does not necessarily translate into safe, reliable, or resilient access for all. Strong agricultural output can coexist with chronic undernutrition and gendered health outcomes. Protected-area coverage can expand while local communities lose access to land and livelihoods.

Across South Asia, aggregate indicators frequently mask disparities by region, gender, caste, class, ethnicity, and legal status. Interpreting indicators alongside social, environmental, and governance contexts is therefore essential to understanding who benefits from progress and who continues to face exclusion and risk.

The land–water–food nexus

Land, water, and food systems are deeply interconnected. Changes in one domain often ripple through the others, sometimes with delayed but far-reaching consequences. When groundwater levels fall, irrigation declines, crop yields suffer, and food prices rise—affecting poor households first. When land tenure is insecure, incentives for soil conservation and sustainable water management weaken. When food systems rely on input-intensive production, pressures on land and water increase.

Understanding these interdependencies is essential. Progress in one area can reinforce progress elsewhere, while stress in one domain can amplify vulnerability across the entire system. The nexus perspective adopted in this report helps reveal these linkages and highlights why isolated technical solutions are often insufficient.

1.2 Key indicators at a glance

Living Planet Monitor: South Asia draws on a core set of quantitative indicators that illuminate the state of land and biodiversity, water resources, and food and agriculture across the region. The indicators were selected based on comparability across countries, relevance to policy and the Sustainable Development Goals, data quality from authoritative sources, and interpretability for non-specialist audiences.

Together, they reveal patterns and points of leverage, but they do not speak for themselves. Indicators must be interpreted in social, political, and ecological context. Important justice-relevant dimensions remain poorly captured by global datasets. Water quality, tenure security, informal land use, unpaid labour, and many forms of discrimination are unevenly measured or not measured at all.

These gaps matter. In many cases, the most severe injustices occur precisely where indicators are weakest. A critical reading of indicators therefore requires a responsible approach that recognizes what data can show and what they systematically overlook.

Land and Biodiversity Indicators		
Indicator	**What it shows**	**Source**
Share of land used for agriculture (%)	Human pressure on ecosystems and the balance between food production and natural areas.	FAOSTAT: Land Use[i]
Forest loss rate (% or ha/year)	Pace of deforestation and ecosystem degradation; key for biodiversity and carbon sinks.	Global Forest Watch[ii]
Share of degraded land (%)	Extent of soil degradation and productivity decline; long-term ecological and livelihood risks.	UNCCD[iii]
Biodiversity Intactness Index (BII)	Share of original biodiversity remaining; intuitive measure of ecosystem condition.	Natural History Museum Data Portal[iv]
Share of land under protection (%)	Commitment to conserving ecosystems across all habitat types.	UNEP-WCMC and IUCN[v]
Share of female landowners (%)	Women's access to and control over productive land.	FAOSTAT: SDG Indicators[vi] and others
Water Resources Indicators		
Indicator	**What it shows**	**Source**
Renewable freshwater resources per capita	Baseline water availability per person; indicates natural endowment of renewable water available.	FAO AQUASTAT[vii]
Water-stress level	Pressure on freshwater resources relative to availability; indicates the sustainability of water use.	
Share of water withdrawals by agriculture (%)	Indicates dependence on irrigation and pressure on water resources driven by agriculture.	
Safely managed drinking-water service (%)	Share of population with reliable, on-premises access to safe drinking water[viii]; indicates public health protection and progress toward the realization of the human right to water.	WHO/UNICEF JMP (WASH Data Households)[ix]
Urban–rural gap in drinking-water access (percentage points)	Inequality in access to safely managed drinking-water services between urban and rural populations.	
Safely managed sanitation services (%)	Public health and pollution prevention.	
Food and Agriculture Indicators		
Indicator	**What it shows**	**Source**
Prevalence of undernourishment (%)	Chronic food insecurity.	FAOSTAT: Food Security and Nutrition[x]
Prevalence of anaemia among women (%)	Gendered nutritional inequality.	
Cereal yield (kg/ha)	Agricultural productivity.	FAOSTAT: Crops and Livestock Products[xi]
Fertilizer use (kg/ha)	Input intensity.	World Bank: World Development Indicators[xii, xiii, xiv]
Employment in agriculture (%)	Dependence on agriculture.	
Food imports (% of merchandise imports)	Dependence on global markets.	

i. Food and Agriculture Organization of the United Nations (FAO). *FAOSTAT Statistical Database: Land Use*. Rome: FAO. https://www.fao.org/faostat/en/#data/RL.
ii. Global Forest Watch. *Global Forest Change Database*. Washington, DC: World Resources Institute. https://www.globalforestwatch.org/dashboards/global/.
iii. United Nations Convention to Combat Desertification (UNCCD). *SDG Indicator 15.3.1: Land Degradation Neutrality Dataset*. Bonn: UNCCD. https://data.unccd.int/land-degradation.
iv. Natural History Museum (NHM). *Biodiversity Intactness Index (BII)*. London: Natural History Museum. Data available at: https://data.nhm.ac.uk/dataset/bii-bte.
v. United Nations Environment Programme – World Conservation Monitoring Centre (UNEP-WCMC) and International Union for Conservation of Nature (IUCN). *World Database on Protected Areas (WDPA)*. Cambridge, UK: UNEP-WCMC. Processed by Our World in Data.https://ourworldindata.org/grapher/terrestrial-protected-areas.
vi. FAO. FAOSTAT *Statistical Database: SDG Indicators*. Rome: FAO. https://www.fao.org/faostat/en/#data/SDGB.
vii. FAO. AQUASTAT: *FAO's Global Information System on Water and Agriculture*. Rome: FAO. https://data.apps.fao.org/aquastat.
viii. UNICEF. *Drinking Water (SDG 6.1 Indicators and Definitions)*. https://data.unicef.org/topic/water-and-sanitation/drinking-water/.
ix. WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP). *Household WASH Data*. Geneva/New York: World Health Organization (WHO) and UNICEF. https://washdata.org/data/household#!/.
x. FAO. FAOSTAT *Statistical Database: Food Security and Nutrition*. Rome: FAO. https://www.fao.org/faostat/en/#data/FS.
xi. FAO. FAOSTAT *Statistical Database: Crops and Livestock Products*. Rome: FAO. https://www.fao.org/faostat/en/#data/QCL.
xii. World Bank. *World Development Indicators: Consumption of Fertilizer (% of Fertilizer Production)*. https://data.worldbank.org/indicator/AG.CON.FERT.ZS.
xiii. World Bank. *World Development Indicators: Employment in Agriculture (% of Total Employment)*. Washington, DC: World Bank. https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS.
xiv. World Bank. *World Development Indicators: Food Imports (% of Merchandise Imports)*. Washington, DC: World Bank. https://data.worldbank.org/indicator/TM.VAL.FOOD.ZS.UN.

1.3 Recommended resources for further exploration

For readers who want to explore the underlying data further, several global institutions publish annual overviews and summaries that present the same indicators used in this report, but in a more accessible format than the technical databases.

Land and Biodiversity

- **FAO Global Forest Resources Assessment (FRA)**
  https://openknowledge.fao.org/handle/20.500.14283/cd6709en.
  The flagship review of forest extent, change, and protection offers summaries and graphics.

- **UNCCD Global Land Outlook**
  https://www.unccd.int/resources/global-land-outlook/overview.
  A comprehensive analysis of global land issues.

- **UNEP "Protected Planet" Reports**
  https://www.protectedplanet.net/en/resources/global-protected-planet-reports.
  Easy-to-read summaries on protected area coverage and trends.

Water Resources

- **UN World Water Development Report**
  https://www.unwater.org/publications/un-world-water-development-report
  A narrative overview of freshwater availability, water stress, and governance challenges.

- **WHO/UNICEF JMP Progress Reports on Drinking Water, Sanitation and Hygiene**
  https://washdata.org/reports
  Accessible summaries of global and regional progress, with clear graphics and explanations.

Food and Agriculture

- **State of Food Security and Nutrition in the World (SOFI)**
  https://www.fao.org/publications/sofi
  Provides global and regional trends on hunger, undernourishment, food imports, and nutrition.

- **FAOSTAT Statistical Yearbook**
  https://openknowledge.fao.org/handle/20.500.14283/cd4313en
  A non-technical overview of agricultural production, inputs, and land use.

Climate and Vulnerability

- **IPCC Fact Sheets**
  https://www.ipcc.ch/report/ar6/wg2/about/factsheets/
  Short, reader-friendly summaries of climate impacts relevant to water, land, food, and health.

- **World Bank Country Climate and Development Reports (CCDRs)**
  https://www.worldbank.org/en/publication/country-climate-development-reports
  Core diagnostic reports that integrate climate change and development and suggest concrete, priority actions that countries can take to develop while building resilience.

2. Regional Patterns: Land, Water, and Food in South Asia

Across South Asia, population growth, rapid urbanization, and economic expansion are intensifying pressure on land, water, and food systems. Expanding cities consume fertile agricultural land, rising incomes and dietary changes increase demand for water- and energy-intensive foods, and industrial development adds new competition for natural resources. Together, these dynamics are reshaping landscapes and livelihoods across the region. Climate change acts as a powerful stress multiplier. Rising temperatures, shifting rainfall patterns, more frequent floods and droughts, and accelerating sea-level rise amplify existing vulnerabilities, particularly in already water-stressed, flood-prone, or densely populated areas such as parts of India, Pakistan, Bangladesh, and Sri Lanka.

Social and economic inequalities are not peripheral to these dynamics but deeply embedded within them. Patterns of land ownership, access to water, and control over natural resources are shaped by power relations linked to class, caste, gender, ethnicity, and legal status. In many contexts, these inequalities determine who bears the highest costs of environmental change, who benefits from resource use, and who is excluded from decision-making and adaptation processes.

These inequalities are not only matters of environmental stress or economic vulnerability; they also raise fundamental questions of justice and human rights, particularly where access to land, water, and food is shaped by exclusion, discrimination, and unequal power relations.

Rather than offering a simple average picture of the region, the analysis below draws attention to contrasts: between land-scarce delta countries and mountainous states; between water-stressed and water-variable contexts; and between highly input-intensive agricultural systems and lower-input, livelihood-based systems. These shared dynamics, together with important differences, help explain divergent national pathways. They matter because they shape who is exposed to environmental risk, who benefits from resource use, and which forms of adaptation are feasible or just.

This chapter synthesizes patterns emerging from the indicators presented in Chapter 1 and the country analyses in Chapter 3.

2.1 Land systems under pressure: agriculture, degradation, and biodiversity

Agriculture is the primary interface between people and land across South Asia, but the intensity and constraints of land use vary sharply. Bangladesh represents the most land-scarce context, with over 70 percent of land under agriculture and very limited scope for ecological recovery or expansion of protected areas. India and Sri Lanka also devote around half or more of their land to agriculture, reflecting dense populations and long histories of intensive cultivation. By contrast, Nepal's mountainous terrain limits the overall share of agricultural land, while Bhutan (discussed in comparative indicators) retains extensive forest cover and relatively low land-use intensity.

Land degradation is a shared regional challenge, but its scale and visibility differ. Bangladesh and Sri Lanka show relatively high shares of degraded land at the national level, reflecting continuous cultivation, erosion, salinization, and input-intensive practices. In India, degradation is widespread but uneven, concentrated in rain-fed regions, irrigated plains, and mining or infrastructure corridors. Nepal's aggregate degradation levels are lower, yet localized erosion and

Photo: Sanjeed Quazi

Macaque drinking water in Sylhet, a large swamp forest in Bangladesh.

Country	Agricultural land (%)	Forest loss rate (%)	Degraded land (%)	Biodiversity Intactness (BII)	Protected land (%)	Female landowners (%)
Bangladesh	72.31	9	22.31	36.59	4.2	18
India	60.06	5	9.45	58.71	7.7	12
Nepal	26.12	0.67	8.3	76.32	23.6	34
Pakistan	46.69	N/A	3.25	86.63	19.2	2
Sri Lanka	48.61	2	14.23	62.18	30	16

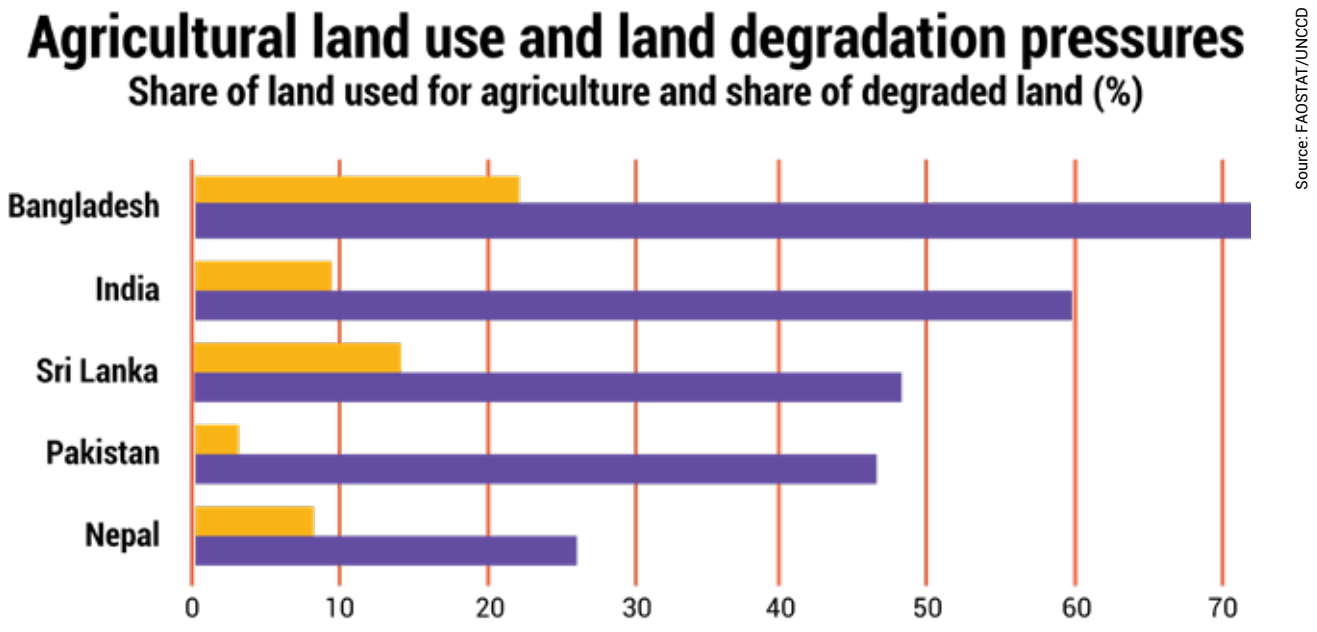
Share of female landowners is from FAOSTAT Statistical Database: SDG Indicators except for:
Bangladesh: International Land Coalition (ILC). Uniting for Land Rights in Bangladesh: How Our Members Are Contributing to Change. Rome, 2022. https://d3o3cb4w253x5q.cloudfront.net/media/documents/ilc_contribution_analysis_2022_6_bangladesh_low_res_J7LyTbr.pdf.
Sri Lanka: Data from 2002, cited in FAO, Country Gender Assessment of Agriculture and the Rural Sector in Sri Lanka. Colombo: FAO, 2018

soil loss are severe in upland farming systems and rapidly urbanizing valleys.

Across the region, national averages obscure localized land stress. Highly productive agricultural zones often coexist with areas of acute degradation and livelihood precarity.

Land outcomes are shaped not only by biophysical limits but by tenure arrangements and power relations. Bangladesh and India illustrate how land concentration, insecure tenure, and weak recognition of customary or collective rights expose smallholders, landless labourers, and Indigenous communities to displacement and exclusion. Sri Lanka's state-dominated land regime highlights a different pathway, where formal ownership is limited, and access is mediated through permits and leases, creating widespread tenure insecurity. Nepal shows yet another pattern, where fragmentation and incomplete land reform constrain investment and productivity despite relatively high female land ownership on paper.

Biodiversity outcomes reflect these contrasts. Countries with lower population density or stronger conservation frameworks retain higher biodiversity intactness, while densely populated and land-scarce countries show much lower ecosystem integrity. Protected areas play an important role across the region, but coverage alone does not guarantee equitable or effective conservation. Where conservation proceeds without safeguards for participation, tenure security, and livelihoods, it can reinforce exclusion rather than resilience.



2.2 Water as the binding constraint: scarcity, stress, and variability

Water emerges as the most consistent cross-cutting constraint across South Asia. Declining per-capita freshwater availability, driven largely by population growth, is a shared regional trend, even in countries with abundant renewable resources. Yet the nature of water insecurity differs fundamentally between countries. Pakistan and India face very high to extreme water stress, as withdrawals approach or exceed renewable supply, signalling structural over-extraction driven primarily by irrigation demand. Sri Lanka also operates close to its renewable limits despite higher per-capita availability, reflecting seasonal variability and heavy irrigation dependence.

By contrast, Bangladesh and Nepal appear water-abundant in aggregate terms, with low national water-stress indicators. This apparent abundance masks severe temporal and spatial variability. Bangladesh faces recurrent flooding during the monsoon season and dry-season scarcity in parts of the country, compounded by salinity intrusion in coastal zones. Nepal's water availability is shaped by seasonality, drying springs, and climate-related disruptions that undermine reliability rather than total supply.

These differences translate into distinct national water risk profiles. Some countries confront chronic scarcity and over-extraction, while others grapple primarily with floods, salinity intrusion, or high seasonal variability despite overall abundance—for example, in delta and coastal regions of Bangladesh and Sri Lanka. This diversity underscores why water governance challenges differ across the region, even as water remains a unifying constraint shaping food security, livelihoods, and development prospects.

Access to water is shaped as much by social and political factors as by hydrology. Even in areas of relative abundance, unequal access to irrigation, drinking water, and sanitation reflects disparities linked to income, caste, gender, and settlement status. Conflicts over water allocation—between upstream and downstream users, urban and rural areas, or agricultural and industrial interests—are increasingly common, particularly where governance mechanisms are weak or exclusionary.

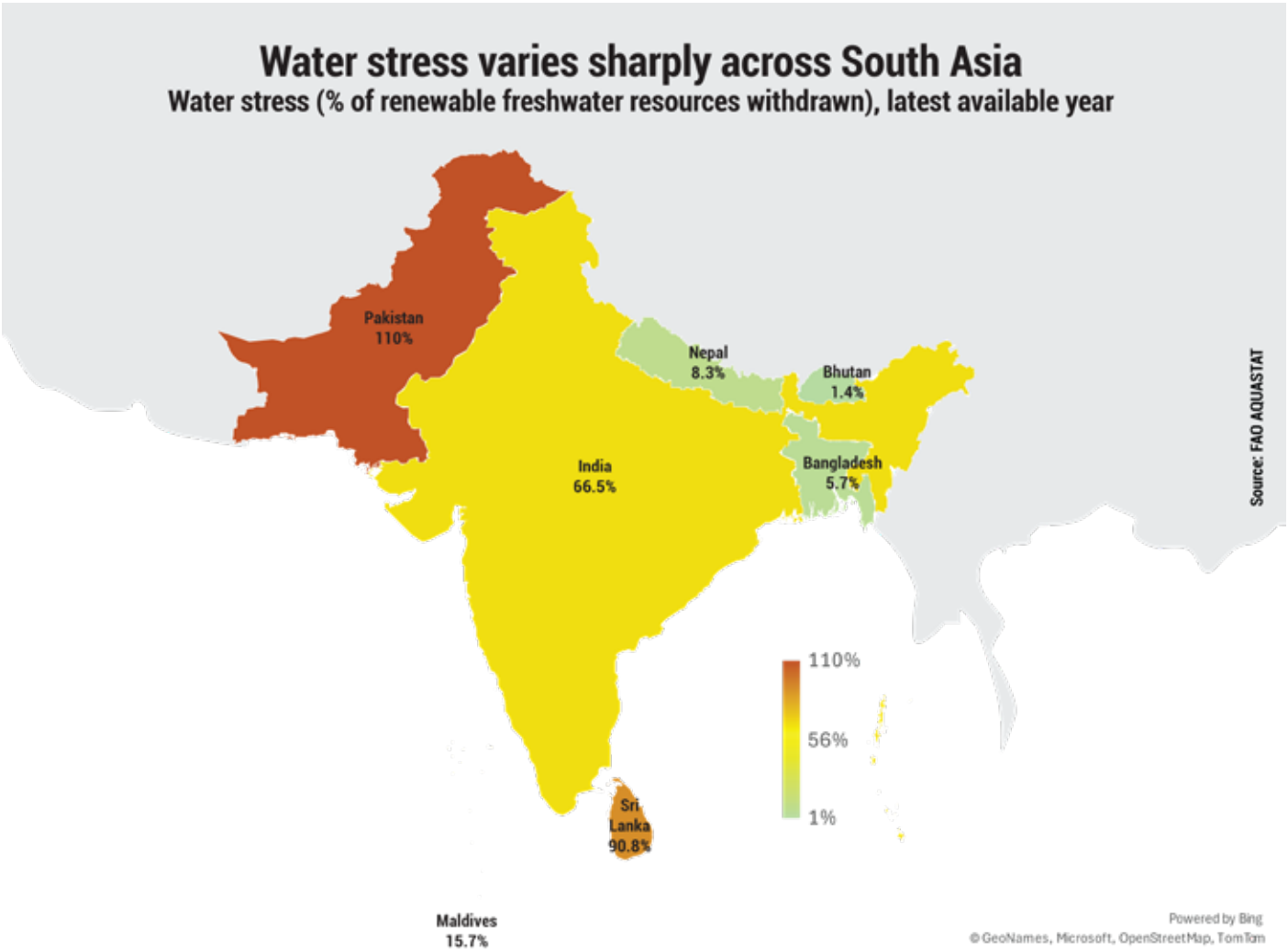


Photo: Sharath S.

Massive water flow on a dam in India.

In this context, unequal access to water affects not only health and wellbeing but also people's ability to secure food and sustain livelihoods. Water availability does not automatically translate into safe, affordable, reliable, and accessible water for all—key components of the human right to water. Governance arrangements, infrastructure, and power relations—including the allocation of control and ownership between public authorities and private actors—strongly mediate who can access water for life and livelihoods.

Across South Asia, reported access to drinking-water and sanitation services has improved substantially at the national level when measured using basic service indicators. However, when assessed using safely managed service indicators—which capture water quality, reliability, and on-premises access—coverage levels are substantially lower, and inequalities between urban and rural areas, income groups, and regions become more pronounced. In many contexts, the households and communities most exposed to water stress, flooding, salinity, or contamination are also those least able to secure safe water for domestic use or for food production.

Taken together, these patterns reinforce a central insight of this chapter: water insecurity in South Asia is rarely explained by physical scarcity alone. It is shaped by governance arrangements, power relations, and unequal access to resources, with direct implications for justice, human rights, and the resilience of land–water–food systems.

Country	Freshwater per capita	Water stress (%)	Agricultural water use (%)	Safely managed drinking-water access (%)	Urban–rural water gap (% points)	Safely managed sanitation access (%)
Bangladesh	7244	5.72	87.82	59.1	-8.2	37.3
India	1340	66.49	90.41	76.4	10.4	62.8
Nepal	7073	8.31	98.14	16.5	9.2	53.4
Pakistan	1012	109.99	93.98	45.0	0.7	n/a
Sri Lanka	2312	90.79	87.36	46.9	41.2	n/a

2.3 Food production, nutrition, and livelihoods: gains, gaps, and trade-offs

South Asia has achieved substantial gains in agricultural productivity, but the pathways to production differ markedly across countries. Bangladesh and parts of India exemplify highly input-intensive growth, with rising irrigation coverage and very high fertilizer use supporting strong cereal yields. Sri Lanka and Pakistan follow mixed pathways, combining irrigation-dependent systems with more modest yield growth. Nepal represents a lower-input, lower-productivity context shaped by terrain, fragmentation, and limited infrastructure.

Despite these differences, a common pattern emerges: production gains have not translated into commensurate nutrition outcomes and persistent nutrition deficits are closely linked to social inequality. Anaemia among women remains widespread across the region, even in countries with high food availability. Undernourishment persists among low-income, lower-caste, and other marginalized groups, reflecting unequal access to diverse diets, health services, and income rather than aggregate food shortages.

Countries differ in the intensity and sustainability of their agricultural pathways. Some rely on highly input-intensive, high-yield systems, as seen in Bangladesh and parts of India, while others operate under lower-input constraints shaped by geography, infrastructure, or policy choices, including Nepal and Bhutan. These differences shape both current outcomes and future transition options for food systems across the region.

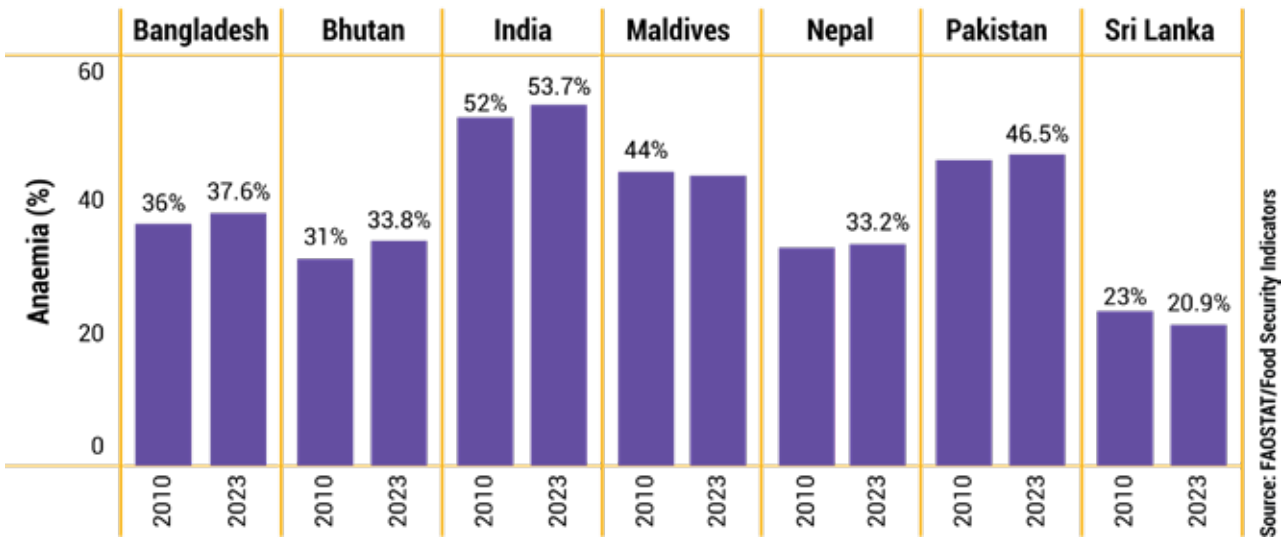
Women harvesting rice in Bangladesh.

Men selling vegetables in the market, Faisalabad, Punjab, Pakistan.

Food systems in South Asia are also livelihood systems. Agriculture continues to employ a large share of the workforce, particularly women, smallholders, and landless labourers. While the share of agricultural employment is declining in all countries, the pace varies. Nepal and India retain very high agricultural employment shares, indicating limited alternative livelihood options, while Bangladesh and Sri Lanka have progressed further along the structural transformation pathway.

Persistent anaemia among women across South Asia

Prevalence of anaemia among women (%), 2010 and 2023



Country	Undernourishment (%)	Anaemia among women (%)	Cereal yield (kg/ha)	Fertilizer use (kg/ha)	Employment in agriculture (%)	Food imports (% of merchandise imports)
Bangladesh	10.4	37.6	5,159.9	391.9	35.0	17.0
India	12.0	53.7	3,626.4	199.1	44.0	5.0
Nepal	5.3	33.2	3,344.3	67.8	61.0	18.0
Pakistan	16.5	46.5	3,634.0	160.3	36.0	14.0
Sri Lanka	7.4	20.9	3,804.3	153.9	26.0	15.0

This slow transition means that large segments of the population—especially small-scale farmers, agricultural labourers, women, and socially marginalized groups—remain directly exposed to climate variability, water stress, and land degradation, even as economies diversify. Differences in agricultural employment shares help explain why environmental shocks continue to have profound social and economic consequences across the region.

Trade adds another layer of differentiation. Countries with higher reliance on food imports are more exposed to global price volatility, while those with strong domestic production place sustained pressure on land and water systems. In both cases, the distributional impacts of shocks are uneven, affecting poor and marginalized households first.

Climate change as a regional risk multiplier

Climate change is already reshaping environmental and livelihood conditions across South Asia. Rising temperatures, shifting monsoon patterns, more frequent floods and droughts, glacier melt in the Himalayas, and sea-level rise in low-lying coastal areas interact with existing pressures on land, water, and food systems. These impacts tend to amplify underlying vulnerabilities rather than creating entirely new ones, and they affect communities and countries differently depending on their exposure, sensitivity, and capacity to respond.

One way to capture these combined dimensions is through composite climate vulnerability indices. The ND-GAIN Country Index, developed by the University of Notre Dame, assesses countries along two distinct dimensions: ***vulnerability*** and ***readiness***. Vulnerability reflects a country's exposure and sensitivity to climate-related impacts across sectors such as food, water, health, ecosystems, human habitat, and infrastructure. Readiness, assessed separately, captures the capacity of institutions, governance systems, and economic conditions to support adaptation and response.

The table below draws specifically on the ND-GAIN vulnerability score. These rankings reflect not only exposure to environmental hazards, but also differences in sensitivity and underlying structural constraints shaped by broader social, economic, and governance conditions.

Across South Asia, vulnerability scores are high in global comparison. Bangladesh, the Maldives, and Pakistan rank among the most climate-vulnerable countries worldwide, reflecting high exposure to floods, cyclones, droughts, and sea-level rise combined with pronounced structural sensitivities. India, Nepal, Bhutan, and Sri Lanka show somewhat lower vulnerability scores but still face significant climate risks, particularly where environmental pressures intersect with dense populations, resource constraints, and unequal access to services.

The ND-GAIN vulnerability scores underline that climate change acts as a risk multiplier in South Asia, intensifying existing stresses on land, water, and food systems and shaping the context in which national and local responses must operate.

Climate vulnerability in South Asia							
NO GAIN vulnerability score and rank as of 2023; higher values indicate greater vulnerability.							
Country	**Bangladesh**	**Maldives**	**Pakistan**	**Bhutan**	**Nepal**	**India**	**Sri Lanka**
Vulnerability score	**0.568**	**0.55**	**0.515**	**0.515**	**0.49**	**0.485**	**0.475**
Global rank	**170**	**162**	**146**	**146**	**134**	**128**	**125**

Source: ND-GAIN Country Index*

* University of Notre Dame. ND-GAIN Country Index Rankings. Notre Dame, IN: Notre Dame Global Adaptation Initiative (ND-GAIN). https://gain.nd.edu/our-work/country-index/rankings/.

3. Country Spotlights

3.1 India

India is one of the world's largest and most geographically diverse countries, encompassing Himalayan mountain systems, major river basins, extensive coastlines, arid and semi-arid regions, and densely populated plains. This diversity underpins wide variation in land use, water availability, agricultural systems, and exposure to environmental risk. At the same time, India's sheer population size and economic scale place exceptional pressure on land, water, and food systems, making resource governance a central development and sustainability challenge.

Agriculture remains a cornerstone of livelihoods, while rapid urbanization, infrastructure expansion, and industrial growth are reshaping landscapes and water use across the country. Climate change acts as a threat multiplier, intensifying existing pressures through more frequent heatwaves, floods, droughts, and cyclones, with impacts that vary sharply across regions and seasons.[1,2]

At the same time, India has demonstrated that large-scale environmental and public-health improvements are possible. Over the past decade, sustained policy focus and public investment have expanded access to drinking water and sanitation on an unprecedented scale, particularly at the level of basic services, contributing to a rapid reduction in open defecation despite vast regional, social, and administrative diversity.[3,4]

However, safely managed service indicators reveal substantially lower coverage and aggregate progress masks deep structural inequalities. Environmental degradation, climate impacts, and service gaps are unevenly distributed across regions and social groups. National climate assessments consistently show that poorer households, marginalized communities, women, and outdoor workers face disproportionate exposure to climate and environmental risks.[5,6]

As a result, India's sustainability challenge is not only one of managing scale and diversity but of addressing unequal access to land, water, and food, along with the governance arrangements that shape who benefits from progress and who bears the costs. Justice and equity considerations are therefore central to understanding environmental outcomes in the Indian context.

A woman harvests beans in a field outside Lucknow, India.

Man throws straw from a truck onto the roof of a house, to feed the cows with later.

3.1.1 Land and biodiversity

Key indicators

Indicator	Value
Share of land used for agriculture (%)	60.06
Forest loss rate (%, 2002 baseline)	5
Share of degraded land (%)	9.45
Biodiversity Intactness Index (BII), 2030 projected (%)	58.71
Share of land under protection (% of total area)	7.7
Share of female landowners (%)	11.9

Intensive land use and ecological pressure

India's land system reflects long-term, intensive human use. Around 60 percent of total land area is devoted to agriculture, underscoring the central role of land in sustaining livelihoods and food security. At the same time, nearly one-tenth of land is classified as degraded, indicating widespread—though regionally uneven—land stress.

Biodiversity indicators point to sustained ecological pressure. The projected decline in the Biodiversity Intactness Index from 2014 to 2030 suggests that cumulative pressures from agricultural expansion, infrastructure development, mining, and settlement growth continue to outweigh current conservation efforts.[7]

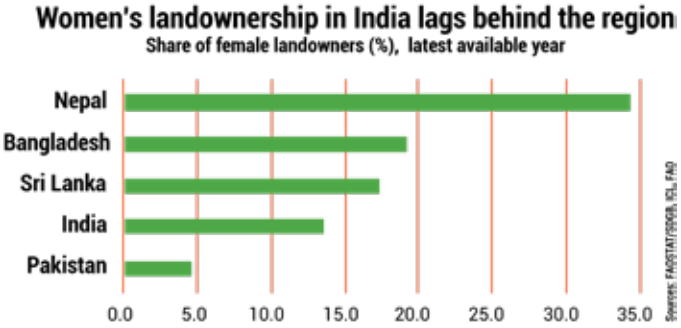
Conservation under competing demands

With less than 8 percent of land under formal protection, conservation in India competes directly with agricultural production, infrastructure expansion, and urban growth. This structural tension is particularly pronounced given India's scale and population density.

Evidence from biodiversity reporting highlights tensions where conservation objectives intersect with poverty, conflict, and limited livelihood alternatives, raising concerns about the social impacts of conservation governance in some regions.[8] These dynamics raise justice concerns where biodiversity protection proceeds without parallel safeguards for tenure security, livelihoods, and community participation.

Caste, indigeneity, and land exclusion

Land inequality in India is strongly shaped by caste and indigeneity. Dalit households remain disproportionately landless, reflecting historical exclusion from land ownership and weak enforcement of redistributive land reforms.[9] Landlessness constrains access not only to agricultural livelihoods but also to irrigation, credit, and government support schemes, reinforcing intergenerational poverty and vulnerability.



Adivasi and forest-dependent communities face overlapping pressures linked to conservation policies, forest diversion, and insecure tenure. Although the Forest Rights Act (2006) was designed to address historical injustice by recognizing individual and community forest rights, implementation remains

Matalben weeding a cotton field in Rapar district, Gujarat, India.

A man in Mursan, a small town in northern India.

uneven. Official figures indicate that more than 2.3 million land titles had been distributed nationwide by October 2023, covering a substantial area.[10]

However, civil-society reporting and policy analysis highlight persistent delays, rejections, and contestation in many forested regions, particularly where conservation priorities or mining and infrastructure interests overlap with community land claims.[11,12] Where forest clearance and conservation initiatives proceed without effective consent, communities may face displacement, restricted access to forest resources, and livelihood loss, linking land governance directly to broader human rights concerns.

Gendered inequalities in land control

The very low share of female landowners highlights persistent gender inequality in access to and control over land. Whereas women contribute substantially to agricultural labour, legal barriers, inheritance norms, and household power relations limit women's ownership and effective control over land.[13]

Even where land is formally registered in women's names, decision-making over cropping, irrigation, and land transfer often remains male-dominated. This constrains women's access to credit, extension services, and agricultural support, with implications for economic security, resilience to climate shocks, and household nutrition. Gender inequality in land control thus remains a core justice issue with consequences extending well beyond agriculture.[14,15]

3.1.2 Water resources

Key indicators

Indicator	Value
Renewable freshwater resources per capita (m³/person/year)	1340.58
Water-stress level (% of renewable resources withdrawn)	66.49
Agricultural water withdrawal (% of total)	90.41
Access to safely managed drinking-water services (%)	76.4
Urban–rural gap in safely managed drinking-water access (percentage points)	10.4
Access to safely managed sanitation services (%)	62.8

Structural water stress and irrigation dependence

Water represents one of India's most binding environmental constraints. Per-capita renewable freshwater availability is low, primarily due to demographic pressure, while withdrawals already approach two-thirds of renewable supply, signalling severe management stress rather than absolute scarcity.

Agriculture dominates water use, accounting for over 90 percent of total withdrawals. This reflects the central role of irrigation in food production but also heightens vulnerability to monsoon variability, groundwater depletion, and climate-driven shifts in rainfall patterns, with direct consequences for rural livelihoods and food security.[16]

Groundwater reliance and governance gaps

Groundwater underpins both irrigation and rural drinking-water supply in India, yet regulation remains weak. The prevailing legal framework links groundwater

Photo: Sean Hawkey/Life on Earth

Kailash Patidar, Fairtrade cotton farmer, stands beside his well, made to this size to capture the brief monsoon and then pump it using drip irrigation.

access to land ownership, effectively treating groundwater as a private resource and allowing landowners to extract it largely unrestricted. Rooted in colonial-era law, this land–water nexus has reinforced existing inequalities in land distribution, disproportionately benefitting larger and socially advantaged landowners while limiting access for land-poor households, women, and lower-caste communities.[17]

In water-stressed regions, falling groundwater levels have intensified these inequalities. Farmers and households with greater financial capacity can drill deeper borewells and secure private supplies, while smallholders and landless households increasingly depend on shared sources, tanker water, or purchased supplies at rising cost. Evidence links groundwater depletion to livelihood distress, forced migration, and heightened vulnerability among poorer rural households, embedding social inequality directly into water access and allocation.[18,19]

Water allocation conflicts

Rising water stress has intensified allocation conflicts between states, sectors, and users. Long-standing inter-state disputes over major river basins, including the Cauvery and Krishna, reflect growing competition between irrigation, urban supply, and industrial demand.[20]

Beyond these high-profile cases, internal water conflicts at local and sub-regional levels are becoming increasingly widespread. Analysts highlight that water scarcity is frequently experienced through disputes between neighbouring communities, farmers and cities, or agriculture and industry, particularly in water-stressed regions dependent on over-extracted groundwater. These conflicts affect everyday access to irrigation and drinking water, from village wells to peri-urban supply systems, and are often linked to pollution, declining groundwater tables, and uneven enforcement of water regulation.[21, 22]

Importantly, evidence suggests that such conflicts are shaped less by hydrological limits alone than by governance failures and unequal power relations. Weak regulation of groundwater extraction, prioritization of urban and industrial uses, and social inequalities in access to water infrastructure all mediate who bears the burden

Photo: Sean Hawkey/Life on Earth

Woman carries three water containers to her house.

of scarcity. Observers warn that these internal water conflicts—often overshadowed by transboundary river disputes—pose growing risks to livelihoods, food security, and social cohesion across large parts of the country.[23,24]

Commercialization, privatization, and equity concerns

Since the early 2000s, India has periodically promoted private-sector participation in the water sector, mainly through public-private partnerships (PPPs), with limited uptake and uneven results.[25] Civil-society organizations, water governance experts, and investigative journalists have been consistently critical of water privatization efforts in India. Critics argue that PPP-based approaches have often failed to deliver sustained improvements in service quality, and that they have been implemented in contexts where regulatory oversight and accountability mechanisms remain weak.[26,27]

In Nagpur, where one of India's most prominent urban water PPPs is located, labour unions and civil-society groups have documented opposition linked to affordability concerns, employment impacts, and the prioritization of commercial objectives over universal service provision.[28]

Climate risk, caste, and unequal vulnerability

Climate change is increasingly testing the resilience of water and sanitation systems. A national assessment finds that over 40 percent of districts face high or very high climate risk to water, sanitation and hygiene (WASH) services, with risks concentrated in several populous states.[29]

Vulnerability is shaped by social inequality. Limited sanitation and hygiene access among Scheduled Caste and Scheduled Tribe households, combined with heavy reliance on groundwater-based supply systems, heightens exposure to climate shocks. These patterns illustrate how environmental risk intersects with entrenched disadvantage, turning water access into a justice and human-rights issue rather than a purely technical challenge.[30,31]

3.1.3 Food and agriculture

Key indicators

Indicator	Value
Prevalence of undernourishment (%)	12
Prevalence of anaemia among women (%)	53.7
Cereal yield (kg/ha)	3626.4
Fertilizer use (kg/ha of arable land)	199.1
Employment in agriculture (% of total employment)	44
Value of food imports (% of total merchandise imports)	5

High production alongside persistent hunger

India's food system combines strong aggregate production capacity with persistent food and nutrition insecurity. National cereal yields are relatively high, and overall food availability is sufficient at the national level. Yet undernourishment continues to affect around 12 percent of the population, indicating that hunger in India is driven less by insufficient production than by unequal access, income constraints, and distribution failures.[32,33]

Nutrition outcomes highlight deeper structural issues. Anaemia affects more than half of all women, reflecting inadequate dietary diversity, heavy labour burdens, and gendered inequalities in access to food, health services, and income. These outcomes persist despite improvements in food supply, underscoring the limits of production-centred approaches to food security.[34]

Gendered labour, land access, and nutrition outcomes

Women play a central role in agricultural labour and household food provisioning yet face systematic disadvantages within the food system. Limited land ownership, restricted control over income, and unequal decision-making power constrain women's ability to influence cropping choices, food consumption, and investment in nutrition and health.[35]

These inequalities translate directly into nutrition outcomes. Evidence links women's lack of control over productive resources to poorer dietary diversity and heightened nutritional vulnerability, particularly in rural areas where agriculture remains the primary livelihood.[36]

Smallholders, labourers, and livelihood precarity

Agriculture continues to employ around 44 percent of India's workforce, even as its contribution to GDP has declined. Although more than half of the working population depends on agriculture for their livelihood, the sector contributes less than one-fifth of gross value

added.[37] This imbalance leaves large segments of the population structurally dependent on livelihoods that are highly exposed to environmental stress and economic uncertainty.

These pressures are unevenly distributed. Small and marginal farmers—who account for around 86 percent of all farmers—face persistent constraints in accessing credit, extension services, markets, and improved technologies.[38] At the same time, declining soil fertility, water scarcity, and climate variability heighten production risks, with modelling exercises projecting substantial yield losses under business-as-usual scenarios driven largely by climate change.[39]

Input-intensive growth and environmental constraints

High yields in Indian agriculture have been supported by input-intensive production systems centred on fertilizer use, irrigation, and energy. While this model has underpinned national food availability, it has also intensified pressure on soils and water resources, contributing to nutrient runoff, soil degradation, and groundwater depletion in key agricultural regions. In several major grain-producing areas, irrigation relies heavily on groundwater extraction, raising concerns about long-term water availability and resilience to climate stress.[40,41]

These environmental constraints intersect with existing inequalities in agrarian livelihoods. Input-intensive systems increase dependence on costly external inputs and reliable access to water, amplifying vulnerability where adaptive capacity is limited. As groundwater depletion and climate impacts accelerate, the sustainability of current agricultural growth models is increasingly questioned, alongside growing calls for reform in water governance and agricultural policy.[42,43]

Workers in tea plantation, Munnar, KL, India.

A pair of bullocks pull a cart in a village in Madhya Pradesh that farms Fairtrade cotton.

Rice paddy in Meghalaya.

Photo: Paul Jeffrey/Life on Earth

A woman feeds her water buffalo in Pakistan. In many regions, buffalo outnumber cattle and serve as the country's primary source of milk, making them vital to rural livelihoods and food systems.

3.2 Pakistan

Pakistan's land, water, and food systems are under growing strain from climate change, structural water scarcity, and deep-seated governance and inequality challenges.[44,45] The country is repeatedly identified among those most affected by climate-related extreme events, including floods, heatwaves, and droughts, with impacts concentrated in already vulnerable rural and agricultural regions.[46,47]

These pressures are amplified by Pakistan's high dependence on climate-sensitive natural resource systems. Large segments of the population rely directly on agriculture and irrigation-based livelihoods, while food security, rural employment, and domestic water supply are tightly coupled to the performance of river-fed irrigation systems. As a result, climatic shocks translate rapidly into economic stress, livelihood disruption, and social vulnerability, particularly in rural areas where poverty levels are higher and adaptive capacity is more limited.[48,49]

National-level indicators suggest only moderate aggregate pressure on land and biodiversity but severe stress on water resources and persistent food and nutrition challenges. However, these averages conceal sharp sub-national disparities. Irrigated areas, arid and semi-arid regions, and districts with weak institutional capacity experience far greater exposure to climate risks than national statistics imply. Gender inequality and land tenure patterns further shape who bears the costs of environmental stress, with women, landless households, and small-scale farmers disproportionately affected by declining land productivity, water scarcity, and food insecurity.[50,51]

3.2.1 Land and biodiversity

Key indicators

Indicator	Value
Share of land used for agriculture (%)	46.69
Forest loss rate (%, 2002 baseline)	N/A
Share of degraded land (%)	3.25
Biodiversity Intactness Index (BII), 2030 projected (%)	86.63
Biodiversity Intactness Index (BII), 2014 (%)	86.82
Share of land under protection (% of total area)	19.2
Share of female landowners (%)	2.16

Cultivated landscapes and uneven ecological pressure

Pakistan's land-use profile reflects a highly cultivated landscape, with agriculture occupying a large share of total land area. At the national level, indicators point to only moderate levels of land degradation and forest loss, and the Biodiversity Intactness Index remains above critical thresholds. However, these averages mask pronounced sub-national stress, particularly in arid and semi-arid agricultural regions and intensively irrigated areas, where land productivity is increasingly undermined by climate variability and extreme events.[52]

Climate stress and irrigation-dependent agriculture

Evidence from irrigated areas shows that development investments aimed at boosting agricultural production are being challenged by rising heat stress, more frequent agricultural droughts, and flood damage linked to monsoon variability. In the Gomal Zam Dam Command Area in Khyber Pakhtunkhwa, climate projections indicate sharply increasing heatwave intensity and duration, alongside recurring agricultural droughts that directly affect wheat yields despite the presence of irrigation infrastructure.[53] These dynamics highlight how climate hazards can erode the expected benefits of land and water development projects over time.

Gendered land tenure and long-term resilience

Land tenure inequality further compounds these pressures. The extremely low share of female landowners highlights entrenched gender disparities in land access and control. Research on land and water governance in Pakistan shows that women's limited land rights reduce their influence over farming decisions, constrain access to credit and extension services, and weaken incentives for long-term land stewardship. These inequalities undermine both social justice and ecological resilience, particularly in farming systems already under climate stress.[54]

3.2.2 Water resources

Key indicators

Indicator	Value
Renewable freshwater resources per capita (m³/person/year)	1012.72
Water-stress level (% of renewable resources withdrawn)	109.99
Agricultural water withdrawal (% of total)	93.98
Access to safely managed drinking-water services (%)	45
Urban–rural gap in safely managed drinking-water access (percentage points)	0.7
Access to safely managed sanitation services (%)	N/A

Extreme water stress and irrigation dependence

Pakistan faces extreme water stress, with total withdrawals exceeding renewable freshwater availability. Agriculture accounts for the vast majority of water use, reflecting the country's heavy reliance on large-scale irrigation systems to sustain food production. This dependence leaves both farming and domestic water supply highly sensitive to changes in river flows, reservoir storage, and seasonal rainfall.

Climate variability, floods, and system vulnerability

Reliance on irrigation heightens vulnerability to climate variability. Climate risk assessments indicate that

Photo: Sahar Zafar/CWSA

Massive monsoon flooding impacted 73% of Pakistan's districts in 2022, leaving over 6.4 million people in need of humanitarian assistance.

rising temperatures, shifting monsoon patterns, and increased variability in river flows are likely to intensify both flood and drought risks, placing additional strain on already-stressed water infrastructure.[55]

The August 2022 floods illustrate how even moderate-intensity rainfall events can produce devastating impacts when combined with upstream catchment dynamics and limited system resilience. In the Gomal Zam Dam Command Area, flooding affected roughly one-third of the irrigated area, damaging crops, housing, and irrigation infrastructure and causing significant economic losses.[56] Such events underscore the growing gap between existing water management systems and the scale of climate risks they are now expected to absorb.

Fragmented governance and unequal access

Water governance challenges further exacerbate physical scarcity. Responsibilities for irrigation management, flood control, drinking-water supply, and sanitation are fragmented across federal, provincial, and local institutions, often with limited coordination and uneven capacity at the district level.[57,58] This fragmentation complicates integrated responses to water stress and climate extremes.

Access to water is also shaped by land ownership and social power. Formal participation in irrigation institutions is frequently tied to land tenure, effectively excluding landless households and many women from water-allocation decisions. Evidence from studies on water user associations and gender-inclusive governance in Pakistan shows that these institutional arrangements systematically limit women's participation and voice in water management, reinforcing unequal access to water for both farming and domestic use as water stress intensifies.[59,60,61]

Drinking water access and service reliability

Despite relatively high national coverage of basic drinking-water services, access to safely managed drinking water remains significantly lower. Extreme water stress places growing pressure on both urban and rural supply systems, particularly during periods of drought or flood disruption. Evidence from climate risk assessments indicates that domestic water supply competes increasingly with agricultural and other uses, while institutional fragmentation complicates planning, operation, and maintenance of water and sanitation services at the local level.[62]

Photo: Paul Jeffrey/Life on Earth

A woman washes dishes in a stream near her home in a village in Pakistan.

Gender and social inequalities further shape these dynamics. Women often bear primary responsibility for household water management, yet they remain underrepresented in formal water governance structures, limiting their influence over service provision and adaptation decisions. As climate variability intensifies, these structural constraints risk widening gaps between nominal access and reliable, safe drinking-water availability, particularly for poorer and rural households.[63]

Irrigation systems, institutional limits, and compounding risk

Pakistan's extensive irrigation network has historically buffered agricultural production against rainfall variability, but evidence suggests that this buffering capacity is increasingly strained. Climate projections for irrigated areas indicate that rising temperatures and more frequent heatwaves are intensifying crop water demand at the same time as water availability becomes more uncertain due to variable river flows and reservoir storage.[64,65] Under these conditions, irrigation infrastructure designed for historical climate regimes faces growing operational limits.

Institutional constraints further compound physical risks. Fragmented governance arrangements make it difficult to coordinate water allocation across sectors during periods of scarcity or extreme events, while limited monitoring and enforcement capacity weakens adaptive management at district level.[66] As water stress intensifies, these institutional limitations increase the likelihood that shortages and flood impacts are absorbed unevenly, reinforcing existing social and spatial inequalities.

Gender and land tenure dynamics shape these outcomes. Access to irrigation institutions and decision-making forums is often mediated by land ownership, excluding landless farmers and many women from formal water governance structures. As climate risks grow, such exclusion reduces the effectiveness of local adaptation and limits the ability of vulnerable groups to influence how water is allocated during periods of stress.[67,68]

Photo: Paul Jeffrey/Life on Earth

Women carrying water in the Sindh River valley in Pakistan.

3.2.3 Food and agriculture

Key indicators

Indicator	Value
Prevalence of undernourishment (%)	16.5
Prevalence of anaemia among women (%)	46.5
Cereal yield (kg per hectare)	3634
Fertilizer use (kg/ha of arable land)	160.3
Employment in agriculture (% of total employment)	36
Value of food imports (% of total merchandise imports)	14

Productivity gains under climate pressure

Pakistan's cereal yields are moderate by regional standards and supported by relatively high fertilizer use. However, productivity gains remain uneven across regions and are heavily dependent on irrigation, leaving farmers exposed to climate-related shocks. In irrigated areas, rising temperatures and changing precipitation patterns increasingly threaten yield stability rather than absolute production levels.

Climate risks to staple food production

Research from irrigated agricultural regions shows that wheat, Pakistan's main staple crop, is highly sensitive to both heat stress and agricultural drought. Climate projections for irrigated areas indicate a sharp increase in the frequency and severity of heatwaves, alongside recurring multi-year drought conditions that significantly reduce wheat yields even where irrigation infrastructure exists.[69] These findings underline the limits of irrigation alone as a buffer against climate change.

Agricultural livelihoods and climate exposure

Agriculture remains a major source of employment in Pakistan, engaging more than one-third of the total workforce. This high dependence on agriculture amplifies the social impacts of climate-related shocks, as disruptions to crop production translate directly into income loss, food insecurity, and livelihood instability for rural households. Climate risk assessments highlight that heat stress, drought, and flooding increasingly affect not only yields but also the reliability of seasonal employment in farming and related activities, particularly in irrigated areas where labour demand fluctuates with water availability.[70,71]

Irrigation has historically buffered agricultural livelihoods against rainfall variability, but evidence suggests that this buffering capacity is weakening under rising temperatures and increasing climate variability. As crop water requirements grow and water availability becomes more uncertain, farmers face higher production risks even in irrigated systems. These dynamics disproportionately affect small-scale farmers and agricultural labourers, who have limited capacity to absorb shocks or invest in adaptive measures, reinforcing existing patterns of rural vulnerability. [72]

Food security, gender, and unequal resilience

Food and nutrition outcomes in Pakistan reflect not only aggregate production levels but also deep-seated inequalities within the agri-food system. High levels of undernourishment and anaemia among women of reproductive age point to persistent gaps in access to nutritious food, health services, and productive resources. Evidence from gender-focused analyses shows that women play a central role in agricultural labour and household food provisioning, yet their limited access to land, water, and decision-making power constrains their ability to influence cropping choices, income use, and nutrition outcomes.[73]

These inequalities interact with climate stress in ways that deepen vulnerability. As climate variability increases production risks and income volatility, households with fewer assets and weaker access to resources face greater difficulty maintaining adequate diets. Women's exclusion from land and water governance further limits their capacity to adapt to changing conditions, weakening household-level resilience to food insecurity. As a result, climate change risks reinforcing existing nutrition gaps unless food systems become more equitable and inclusive alongside efforts to increase productivity.[74,75]

Trade exposure and food security

Food imports account for a substantial share of total merchandise imports, reflecting Pakistan's exposure to international price volatility and external supply shocks. This exposure interacts with domestic production risks, reinforcing the importance of resilient and equitable food systems in the face of climate and economic uncertainty.

Photo: Paul Jeffrey/Life on Earth

Pakistani woman carries her crop in Mirpurkhas, Sindh.

Photo: Albin Hillert

Children on their way home through the valley, after a day at the Bindabasini Secondary School in Majhigaon, Kavre district, Nepal.

3.3 Nepal

Nepal's Himalayan mountains, mid-hill regions, and lowland plains form a tightly interconnected land–water–food system shaped by extreme topographic variation. Land use, water availability, and food production are closely interlinked across these zones: land-use change and erosion in upland areas affect sedimentation and flood risks downstream, irrigation demand in the plains shapes national water use, and forests play a critical role in regulating water flows and sustaining agricultural systems. Climate variability increasingly amplifies these interactions, with floods, landslides, droughts, and changing monsoon patterns disrupting infrastructure, agricultural production, and livelihoods across regions.[76,77]

At the national level, Nepal's aggregate indicators suggest relatively moderate pressure on land and water systems. Agricultural land use is limited by mountainous terrain, water withdrawals remain well below renewable supply, and biodiversity indicators remain comparatively strong, supported by an extensive protected-area network. Yet these aggregate conditions obscure significant localized pressures. Land fragmentation, seasonal water variability, and growing climate risks constrain productivity and reliability in both rain-fed and irrigated systems, particularly for smallholders and remote communities.[78,79]

At the same time, inequalities in access to land, water, and productive resources shape how environmental pressures are experienced. Historical land concentration, incomplete land reform, gendered land rights, and land-linked water governance mean that environmental risks and adaptation opportunities are unevenly distributed. Dalits, indigenous communities, women farmers, and land-poor households are disproportionately exposed to livelihood insecurity and climate shocks, and they have relatively limited control over resources and decision-making institutions. These inequalities and patterns of discrimination constitute justice concerns in their own right while also intersecting with recognized human rights commitments related to land, water, food, and non-discrimination.[80,81,82]

3.3.1 Land and biodiversity

Key indicators

Indicator	Value
Share of land used for agriculture (%)	26.12
Forest loss rate (%, 2002 baseline)	0.67
Share of degraded land (%)	8.3
Biodiversity Intactness Index (BII), 2030 projected (%)	76.32
Share of land under protection (% of total area)	23.6
Share of female landowners (%)	34.4

Low aggregate pressure, high localized stress

Nepal's land-use profile reflects its mountainous terrain and ecological diversity. At the national level, the relatively small share of land used for agriculture and the limited extent of degraded land suggest moderate overall pressure. At the same time, land stress is highly localized, particularly in accessible lowland areas and around expanding urban centres, where infrastructure development, settlement growth, and commercial land use intersect with weak land-use planning.[83]

Land fragmentation remains a defining feature of the agrarian landscape. Even where aggregate degradation levels are limited, shrinking and scattered plots constrain productivity, mechanization, and long-term investment for smallholders, reinforcing livelihood insecurity and vulnerability.

Conservation success alongside access constraints

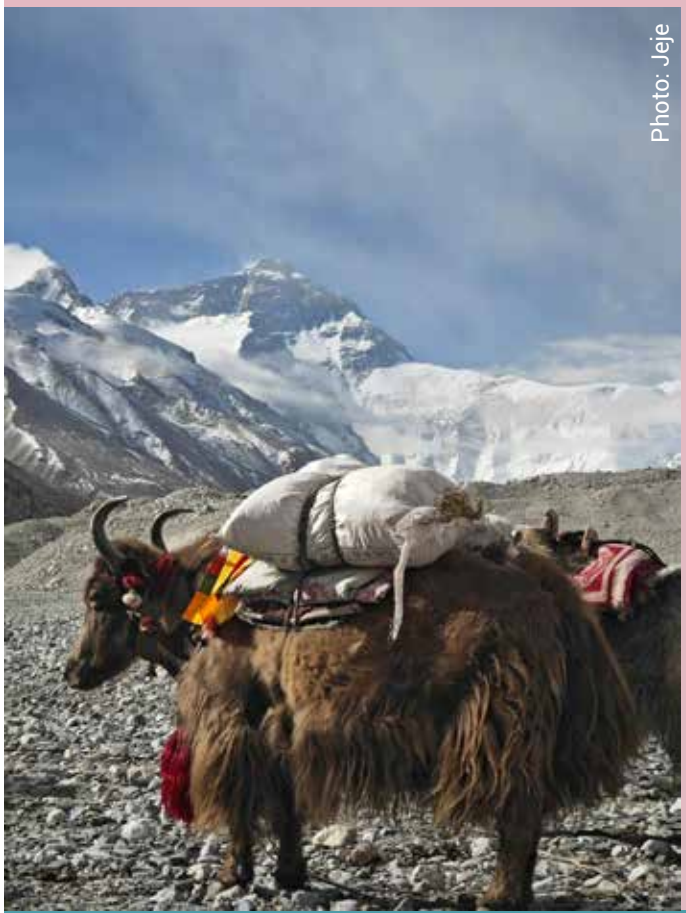
Biodiversity indicators remain comparatively strong. Nepal's projected Biodiversity Intactness Index of over 76 percent suggests that many ecosystems remain relatively intact, supported by an extensive protected-area network covering nearly one-quarter of the national territory. Forest governance and community-based forest management have contributed to reducing deforestation and forest degradation in recent decades, helping to limit habitat loss in several regions.[84]

At the same time, conservation outcomes are uneven. In more accessible areas, biodiversity protection increasingly competes with agricultural expansion, infrastructure development, and extractive land uses. For local communities, conservation restrictions can translate into reduced access to land and forest resources, often without adequate livelihood alternatives or compensation, reinforcing existing social and economic inequalities.[85]

Land tenure reform stalled amid social inequality

Land tenure remains a central social and economic issue. The number of female landowners in Nepal has risen markedly in recent years, driven in part by government incentives such as land registration fee discounts for female ownership. However, cultural norms and household power relations often mean that men continue to make major decisions regarding land use, investment, and transfer. As a result, increases in formal ownership have not consistently translated into effective control over land or improved access to irrigation, credit, and agricultural support services for women farmers.[86,87]

Tenure insecurity deepens existing social inequalities. Households without secure land rights face higher risks of displacement, exclusion from agricultural support, and limited ability to invest in long-term land stewardship. These vulnerabilities disproportionately affect Dalits and indigenous communities, reflecting persistent patterns of discrimination that intersect with broader human rights concerns related to security of tenure, equality, and protection from arbitrary loss of land.[88,89]



Yak climbing pathway with Mount Everest background.

A waterfall flowing down a rocky mountain, Ghandruk, Gandaki Province.

Elderly man filling buckets with water, Lalitpur.

Pots and pan lie to dry in the sun outside a home in Sirsiya Tole, a community inhabited by Santal and Dalit (Musahar) people, who find themselves as the very margin of society in Nepal.

3.3.2 Water resources

Key indicators

Indicator	Value
Renewable freshwater resources per capita (m³/person/year)	7073.76
Water-stress level (% of renewable resources withdrawn)	8.31
Agricultural water withdrawal (% of total)	98.14
Access to safely managed drinking-water services (%)	16.5
Urban–rural gap in safely managed drinking-water access (percentage points)	9.2
Access to safely managed sanitation services (%)	53.4

Abundant water, irrigation-dependent livelihoods

Nepal benefits from high renewable freshwater availability per capita, driven by its Himalayan river systems. National water-stress levels remain low, indicating that total withdrawals are well within renewable limits. At an aggregate level, physical water scarcity is therefore not a binding national constraint.

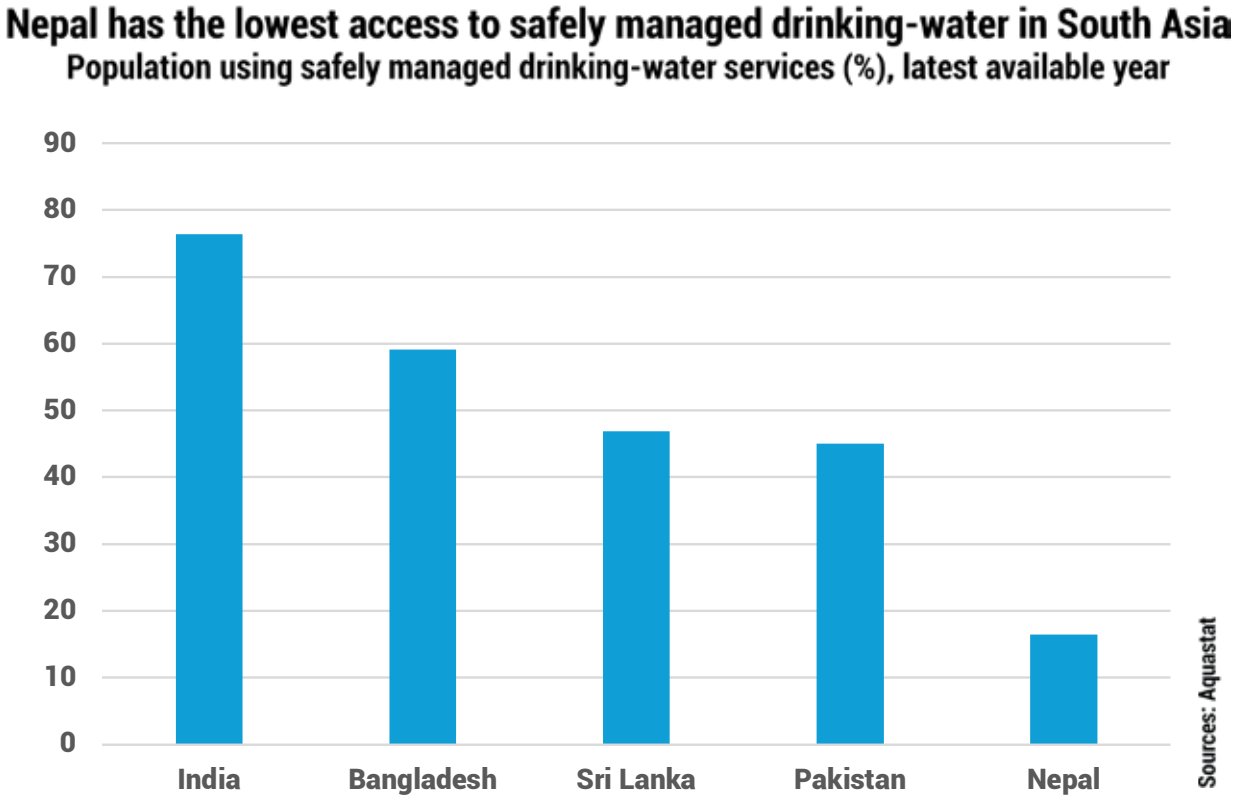
Water use is highly concentrated in agriculture, which accounts for more than 98 percent of total withdrawals. This reflects the central role of irrigation for rural livelihoods and food production, as well as the limited development of water-intensive industrial and energy uses.[90]

Seasonal variability as the binding constraint

Despite high overall availability, water access is shaped by strong seasonal variability and increasing climate-related disruptions. Changes in monsoon patterns, drying springs, floods, and landslides affect the reliability of both irrigation and drinking-water systems, particularly in mountainous and remote areas. Damage to rural water infrastructure during extreme weather events has become more frequent, exposing weaknesses in system resilience and maintenance capacity.[91]

Land-linked water governance and exclusion

Access to at least basic drinking-water services exceeds 90 percent; however, only a small share of the population (16.5%) has access to safely managed drinking-water services, reflecting persistent challenges related to water quality, reliability, and climate resilience. Only about half of the population has access to safely managed sanitation, reflecting persistent gaps in service quality, environmental safety, and long-term sustainability—particularly in areas affected by climate hazards and difficult terrain.[92]



Gender norms and land-linked governance structures further shape access to water. While women's participation in water user groups and local water institutions has increased in formal terms, leadership roles and technical decision-making remain largely male-dominated. Combined with high unpaid care and water collection burdens, this limits women's influence over water allocation, infrastructure maintenance, and climate adaptation priorities.[93,94]

Persistently high rates of anaemia among women reflect not only dietary gaps but also gendered patterns of labour, care responsibilities, and intra-household food distribution. Women's heavy involvement in agriculture and household food provision, combined with limited control over income and productive resources, contributes to nutrition outcomes that lag behind improvements in aggregate food availability.[97,98]

3.3.3 Food and agriculture

Key indicators

Indicator	Value
Prevalence of undernourishment (%)	5.3
Prevalence of anaemia among women (%)	33.2
Cereal yield (kg per hectare)	3344.3
Fertilizer use (kg/ha of arable land)	67.8
Employment in agriculture (% of total employment)	61
Value of food imports (% of total merchandise imports)	18

Improved food access, persistent nutrition gaps

Nepal records relatively low levels of undernourishment, reflecting improvements in food availability and poverty reduction over time. However, anaemia among women remains widespread, affecting roughly one-third of the female population, pointing to persistent gendered nutrition challenges that are not resolved by calorie availability alone.[95,96]

Elderly Man Weaving Basket in Nepali Village.

15 September 2018, Laxmipur, Nepal: Food is served after worship as hundreds gathered at the Nepal Evangelical Lutheran Church in Laxmipur to worship together with ecumenical guests from the Lutheran World Federation.

A woman works her field in a valley in the Kavre district, Nepal.

In the community of Maidan, Kavre district, villagers have started to practice semi-commercial vegetable farming.

Moderate productivity under low-input constraints

Cereal yields are moderate and supported by comparatively low fertilizer use, indicating a less input-intensive agricultural model than in neighbouring countries. While this reduces pressure on soils and water resources, it also constrains productivity gains and income growth for smallholders, especially under conditions of land fragmentation and climate variability.[99]

Agriculture as livelihood trap rather than transition

Agriculture employs over 60 percent of Nepal's workforce, the highest share among the countries covered. Male out-migration has left women carrying primary responsibility for agricultural labour, farm management, and household food security, reshaping rural livelihoods without a corresponding shift in control over land, water, and agricultural decision-making.[100]

Although the share of employment in agriculture has declined slowly, it remains exceptionally high, underscoring limited alternative livelihood options in rural areas and continued dependence on climate-sensitive production systems.[101] Nepal's reliance on food imports—accounting for nearly one-fifth of total merchandise imports—adds an additional layer of vulnerability, exposing domestic food security to external price fluctuations and supply disruptions.[102]

Photo: Paul Jeffrey/Life on Earth

People walk across a bridge in Nopara, a village near Srinagar, Bangladesh.

3.4 Bangladesh

Bangladesh's low-lying delta, densely cultivated floodplains, and heavily populated coastlines create a tightly interlinked pattern of environmental pressures. Extensive agricultural use, riverbank erosion, and land degradation upstream interact with flooding, waterlogging, and salinity intrusion downstream, while climate variability increasingly amplifies these dynamics. Situated within the Ganges–Brahmaputra–Meghna river system, the country's natural abundance of water and fertile soils is offset by extreme land scarcity and growing pressure on ecosystems.[103]

These conditions intensify the links between land, water, and food. Floods and cyclones repeatedly disrupt agricultural production, salinity affects soils and freshwater supplies in coastal areas, and land degradation undermines long-term productivity. With a large share of livelihoods dependent on agriculture and natural resources, environmental stress is closely tied to food security, water access, and economic stability.[104]

At the same time, high population density and unequal access to land and resources shape how these pressures are experienced. Tenure insecurity, fragmented governance, and limited space for conservation constrain long-term stewardship and adaptation, with disproportionate impacts on land-poor and resource-dependent communities.[105] National strategies increasingly emphasize climate resilience and ecosystem-based approaches, but sustained progress will depend on managing both the physical limits of land and water systems and the social conditions that govern access, control, and use.[106,107]

3.4.1 Land and biodiversity

Key indicators

Indicator	Value
Share of land used for agriculture (%)	72.31
Forest loss rate (%, 2002 baseline)	9
Share of degraded land (%)	22.31
Biodiversity Intactness Index (BII), 2030 projected (%)	36.59
Share of land under protection (% of total area)	4.2
Share of female landowners (%)	18*

* International Land Coalition (ILC). Uniting for Land Rights in Bangladesh: How Our Members Are Contributing to Change. Rome, 2022. https://d3o3cb4w253x5q.cloudfront.net/media/documents/ilc_contribution_analysis_2022_6_bangladesh_low_res_J7LyTbr.pdf.

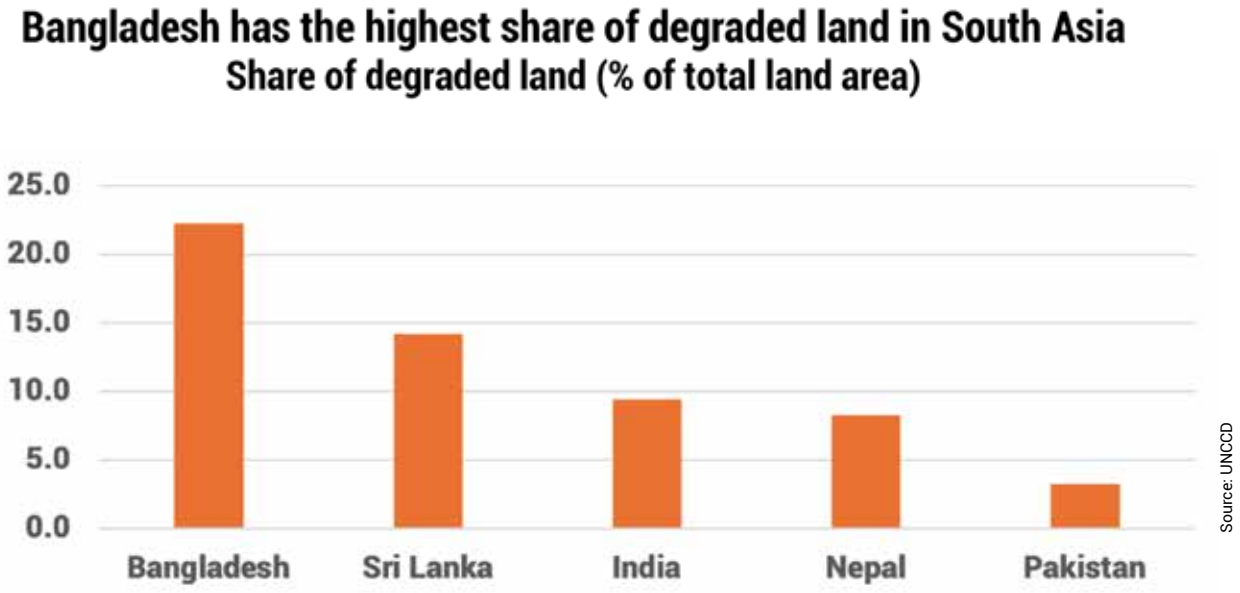
Extreme land pressure and degradation

Bangladesh's land system is shaped by exceptional intensity of use. More than 72 percent of land is used for agriculture, leaving very limited space for forests, wetlands, and other natural ecosystems. This reflects both long-standing agricultural intensification and extreme population density, which together constrain opportunities for land recovery or expansion of protected areas.[108]

Over 22 percent of land is classified as degraded, the highest share among the countries covered. Degradation is driven by continuous cultivation, high fertilizer application, soil nutrient imbalance, and erosion, compounded by flooding, salinity intrusion, and climate variability. The World Bank's Country Climate and Development Report (CCDR) identifies land degradation as a growing constraint on agricultural productivity and climate resilience, particularly in floodplains and coastal zones where soils are increasingly exposed to stress.[109]

Photo: Quang Nguyen Vinh

Harvesting water lilies in wetlands and floodplains of Bangladesh, where seasonal collection supports rural livelihoods.



Biodiversity loss and limited protection

Biodiversity indicators point to severe and persistent ecosystem transformation. The projected Biodiversity Intactness Index (BII) of 36.6 percent suggests that much of Bangladesh's original biodiversity has been lost or significantly altered, with little sign of recovery over time.

Forest ecosystems have been particularly affected. Mangroves, hill forests, and sal tree forests have experienced long-term decline due to encroachment, fuelwood extraction, agricultural expansion, and infrastructure development. Sal forests are dominated by the sal tree (*Shorea robusta)*, a native hardwood species widespread in South Asia and ecologically important for biodiversity and livelihoods. Remaining forest areas face continued pressure from livelihood dependence and weak enforcement, despite their critical roles in flood protection, coastal stability, and biodiversity conservation.[110]

Only about 4.2 percent of land is under formal protection, limiting the scope of conservation efforts. In a context of acute land scarcity, competing demands for food production, settlement, and infrastructure severely restrict the expansion of protected areas and large-scale restoration.[111]

Land governance, elite capture, and stewardship challenges

Beyond physical land scarcity, patterns of land ownership and control strongly shape land-use outcomes in Bangladesh. Land ownership is highly concentrated, and tenure insecurity remains widespread, particularly among smallholders, indigenous communities, and women. A significant share of landholders lack formal documentation, and land disputes dominate civil courts, reflecting fragmented governance and weak land administration.[112]

Although women make up an estimated 73 percent of Bangladesh's agricultural labour force, only 18 percent hold legal land titles, and just 5 percent exercise effective control over land use and decisions. This disconnect between labour, legal ownership, and actual control reflects deeply entrenched gender inequalities in land governance, limiting women's bargaining power, access to credit and extension services, and incentives to invest in long-term land stewardship.[113]

Tenure insecurity further complicates sustainable land management. Communities that have farmed or used land for generations can be labelled "encroachers" if they lack formal deeds, exposing them to eviction and weakening incentives for long-term stewardship. This is particularly evident in the allocation of public (*khas)* land, which is frequently captured by local elites rather than redistributed to land-poor households, and in forest areas where customary and collective tenure systems receive limited legal recognition.[114]

Indigenous and forest-dependent communities are disproportionately affected. In regions such as the Chittagong Hill Tracts and sal tree forest areas, weak recognition of customary land rights has contributed to long-standing disputes, social exclusion, and environmental degradation, as land conversion and commercial interests override traditional land-use practices.

These governance challenges complicate efforts to balance agricultural production, biodiversity conservation, and climate resilience. Marginalized and land-poor communities often bear the costs of environmental degradation while having limited capacity to invest in sustainable land management.

National strategies increasingly recognize the importance of sustainable land management and ecosystem-based approaches. However, national and international assessments caution that without clearer tenure arrangements, stronger safeguards against elite capture, and better coordination across institutions, pressures on ecosystems are likely to intensify, further undermining biodiversity and the ecosystem services on which livelihoods depend.[115,116]

3.4.2 Water resources

Key indicators

Indicator	Value
Renewable freshwater resources per capita (m³/person/year)	7244.05
Water-stress level (% of renewable resources withdrawn)	5.72
Agricultural water withdrawal (% of total)	87.82
Access to safely managed drinking-water services (%)	59.1
Urban–rural gap in safely managed drinking-water access (percentage points)	-8.2
Access to safely managed sanitation services (%)	37.3

Abundance, variability, and flood risk

Bangladesh has high renewable freshwater availability per capita, reflecting its location within the Ganges–Brahmaputra–Meghna river system, and overall low water-stress levels, as total withdrawals remain well below available renewable resources. These aggregate figures, however, mask pronounced seasonal and spatial variability.

Flooding, riverbank erosion, and waterlogging are recurrent challenges during the monsoon season, while dry-season shortages affect irrigation and local water supply in parts of the country. Climate change is intensifying both extremes, increasing flood risks while amplifying dry-season variability and uncertainty.[117]

Salinity, water quality, and coastal vulnerability

In coastal and delta regions, salinity intrusion is a growing constraint on water security. Sea-level rise, storm surges, reduced upstream freshwater flows, and saline groundwater extraction have increased salinity in rivers, soils, and aquifers, particularly in the southwest. These processes directly affect drinking-water quality, agricultural productivity, and ecosystem health.[118,119]

Although national indicators show nearly universal access to at least basic drinking-water services, access to safely managed drinking water remains substantially lower, particularly among poorer households and in flood- and salinity-affected areas.[120] These gaps point to continuing challenges in realizing the human right to safe drinking water, beyond nominal service coverage.

Safely managed sanitation coverage remains limited. In flood-prone areas, sanitation facilities are frequently damaged or inundated, undermining hygiene, dignity, and public health, especially among women and marginalized groups.[121]

Urban water insecurity and inequality

Rapid urbanization is intensifying water and sanitation challenges in major cities, particularly Dhaka. Although formal network coverage has expanded, access to affordable, reliable services remains highly uneven. In informal settlements, households often rely on private vendors or shared connections, paying many times more per unit of water than formally connected users and spending a significant share of household income on basic water needs.[122] These conditions highlight how water insecurity in Bangladesh is shaped not only by physical scarcity but also by inequality in service provision and affordability.

Unlike the other countries covered in this report, Bangladesh records higher rural than urban coverage of safely managed drinking-water services. This counterintuitive pattern reflects the prevalence of household-level tubewells in rural areas that meet JMP service criteria, alongside uneven, intermittent,

A communal water point at the Rohingya refugee camp in Kutupalong, Cox's Bazar, Bangladesh, home to nearly one million Rohingya refugees who fled violence and persecution in Myanmar.

and costly urban service provision—particularly in informal settlements.

Fragmented water governance

The CCDR identifies fragmented water governance as a key structural constraint. Responsibilities for irrigation, flood control, drinking-water supply, sanitation, and ecosystem protection are spread across multiple institutions, complicating integrated water management and increasing the risk of uneven outcomes and maladaptation.[123]

Access to water resources is also shaped by land ownership and local power dynamics, particularly in rural areas where irrigation infrastructure, fisheries, and wetlands are closely linked to land control. These governance and distributive factors influence who benefits from water investments and who bears the greatest water-related risks.[124]

National strategies emphasize climate-resilient water infrastructure, improved service quality, and ecosystem-based approaches. However, both national and international assessments underscore the fact that effective adaptation—along with the realization of the right to water and sanitation—will depend on stronger coordination and governance arrangements that address unequal exposure to water risks across regions and social groups.[125,126,127]

Water use, aquaculture, and local conflict

In coastal Bangladesh, the expansion of export-oriented shrimp aquaculture has reshaped land and water systems. Reported evidence highlights how shrimp farming often involves the deliberate introduction of saline water, which can contaminate soils, freshwater sources, and adjacent rice fields.[128,129]

While shrimp production has generated income for some landowners and investors, its impacts are uneven. Investigative reporting documents show how the expansion of shrimp aquaculture has benefited politically connected elites, while small farmers and land-poor households have lost access to freshwater for drinking and irrigation, contributing to social tensions and localised conflict over land and water use.[130,131]

A man bakes bread in Nopara, a village near Srinagar, Bangladesh.

Red chili peppers drying in the sun. Widely grown across Bangladesh, chili production plays a significant role in rural livelihoods and domestic food markets.

3.4.3 Food and agriculture

Key indicators

Indicator	Value
Prevalence of undernourishment (%)	10.4
Prevalence of anaemia among women (%)	37.6
Cereal yield (kg per hectare)	5159.9
Fertilizer use (kg/ha of arable land)	391.9
Employment in agriculture (% of total employment)	35
Value of food imports (% of total merchandise imports)	17

High productivity under intensive pressure

Bangladesh has achieved high agricultural productivity, with cereal yields exceeding 5100 kg per hectare—among the highest in the region. These gains reflect decades of irrigation expansion, improved seed varieties, and very high fertilizer use, which now approaches 400 kg per hectare of arable land.[132]

While this input-intensive model has helped sustain food availability for a large and growing population, it has also increased pressure on soils and water resources. The CCDR highlights rising risks of soil nutrient imbalance, declining soil health, and water pollution, which may undermine long-term productivity if not addressed through more sustainable practices.[133]

Nutrition gaps and unequal outcomes

Despite strong aggregate food production, nutrition challenges persist. Undernourishment affects just over 10 percent of the population, while anaemia among women remains widespread, affecting more than one-third. These indicators point to persistent dietary and micronutrient deficiencies, shaped by income inequality, gender norms, and limited access to diverse foods.[134]

Nutrition outcomes are closely linked to social and economic inequalities. Poorer households, landless labourers, and women often benefit least from productivity gains, even as they bear a large share of agricultural labour. Women control little land and have limited access to resources and decision-making, contributing to persistent gender disparities in nutrition and health outcomes. These patterns highlight the limits of production-focused approaches in addressing food and nutrition security without complementary social and gender-sensitive measures.

Livelihoods, structural change, and vulnerability

Agriculture continues to employ around 35 percent of the workforce, underscoring its central role in rural livelihoods despite gradual economic diversification. Over recent decades, employment in agriculture has declined steadily, reflecting structural transformation, yet a large share of the population remains directly exposed to climate and market shocks affecting the sector.

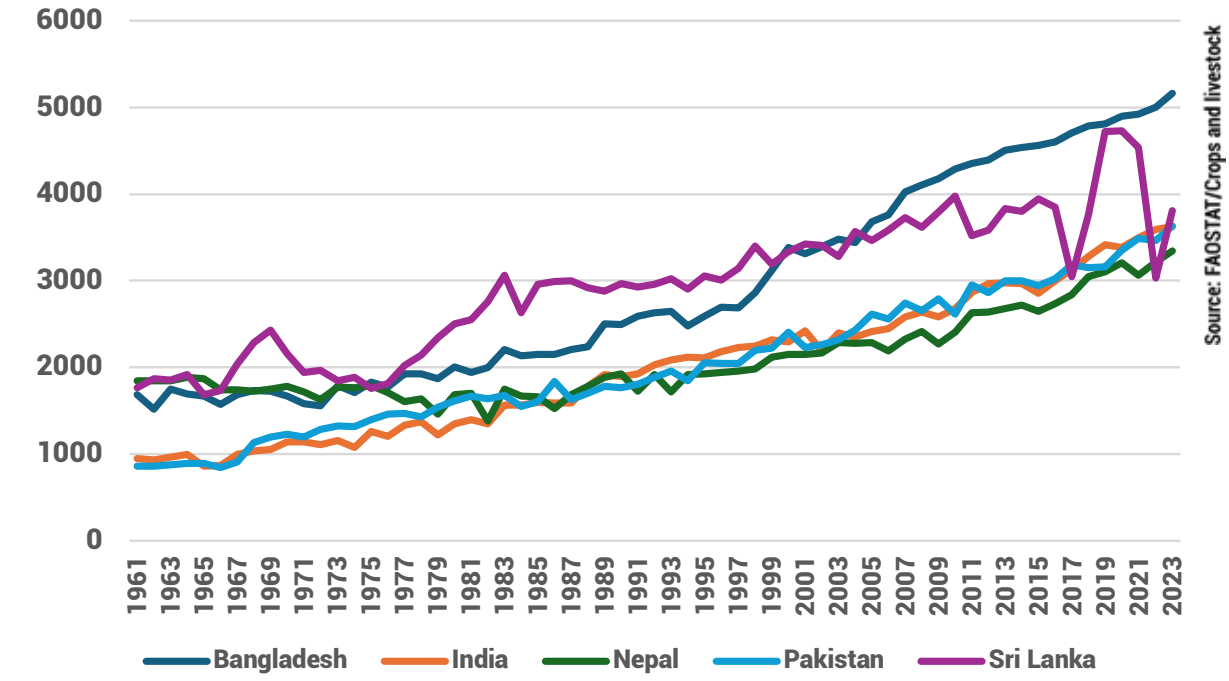
Climate risks pose growing challenges for food systems. Floods, cyclones, salinity intrusion, heat stress, and erratic rainfall increasingly disrupt crop production and incomes, particularly for smallholders and land-poor households. Both the CCDR and the National Adaptation Plan warn that climate impacts could significantly reduce agricultural output and rural incomes without effective adaptation.[135,136]

Trade exposure and resilience

Food imports account for around 17 percent of total merchandise imports, reflecting Bangladesh's partial reliance on global markets to meet domestic demand. Although trade can buffer short-term supply shocks, it also exposes the food system to international price volatility, as highlighted during recent global food crises.[137]

National strategies emphasize climate-smart agriculture, stress-tolerant crops, diversification, and improved water and soil management. However, both national and international assessments demonstrate that the effectiveness of these measures depends on who can adopt them. Inequalities in land access, tenure security, credit, and extension services shape farmers' capacity to invest in resilient practices, reinforcing the importance of addressing structural barriers alongside technical solutions.[138,139]

Bangladesh shows the highest cereal yields in South Asia, but nutrition gaps persist
Cereal yield (kg per hectare), 1961–2023



After displacement during Sri Lanka's civil war, Annaletchumi Velayutham and her husband rebuilt their livelihood in Karadianaru through goat rearing, supported by a small church-backed loan.

3.5 Sri Lanka

Sri Lanka's steep central highlands, dry-zone plains, and densely settled coastal areas form a closely interconnected land–water–food system. Environmental pressures in one part of the country are rapidly transmitted to others: erosion and land-use change in the highlands increase flood risks downstream, irrigation demand in the dry zone shapes national water use, and coastal ecosystems underpin both food production and water regulation. Climate variability increasingly amplifies these dynamics, with floods, droughts, and erratic rainfall repeatedly disrupting agricultural production, infrastructure, and livelihoods.[140]

Although Sri Lanka is often perceived as relatively resource-abundant, nearly half of its land is used for agriculture, water withdrawals approach the limits of renewable supply, and biodiversity indicators point to continuing ecosystem stress. These pressures are closely linked to food security, water access, and rural livelihoods, particularly in irrigation-dependent and rain-fed regions.[141]

At the same time, unequal access to land, water, and productive resources shapes how environmental pressures are experienced. A state-dominated land tenure regime, gender-biased inheritance and land allocation rules, fragmented water governance, and the legacies of armed conflict mean that environmental risks and adaptation opportunities are unevenly distributed. Estate communities, war-affected populations in the north and east, female farmers, and low-income urban households are disproportionately exposed to environmental stress while having more limited capacity to adapt.[142,143,144]

3.5.1 Land and biodiversity

Key indicators

Indicator	Value
Share of land used for agriculture (%)	48.6
Forest loss since 2002 (%)	2
Share of degraded land (%)	14.2
Biodiversity Intactness Index (2030 projected, %)	62.2
Share of land under protection (%)	30
Share of female landowners (%)	16*

*Data from 2002, cited in FAO, Country Gender Assessment of Agriculture and the Rural Sector in Sri Lanka. Colombo: FAO, 2018.

State land control and tenure insecurity

Land governance in Sri Lanka is characterized by extensive state ownership, with large areas administered through permits and leases rather than private freeholding. While this system has enabled large-scale irrigation and settlement schemes, it has also generated widespread tenure insecurity, particularly for smallholders cultivating state land.

Photo: Jayasiri Wickramasinghe

Crested horn lizard on tree trunk in Nuwara Eliya, Sri Lanka.

Restrictions on transfer, inheritance, and use as collateral limit farmers' access to credit and weaken incentives for long-term soil management and climate-resilient investment.[145]

Women face additional barriers. Gender-biased inheritance rules under the Land Development Ordinance and customary laws restrict women's ability to inherit or control land independently, contributing to systematically lower land ownership and weaker decision-making power in agriculture.[146,147,148]

Biodiversity pressure and conservation trade-offs

Sri Lanka retains globally significant biodiversity and a relatively high share of formally protected areas. However, with 48.6 percent of land devoted to agriculture and more than 14 percent classified as degraded, land in Sri Lanka is both intensively used and environmentally stressed. Land degradation reflects long-term intensive cultivation, erosion in the highlands, and land-use change in ecologically sensitive areas. Relatively low aggregate forest-loss indicators mask fragmentation and degradation that undermine ecosystem integrity without registering as outright deforestation.[149]

Even though nearly 30 percent of land is formally designated as protected, environmental outcomes remain mixed. Protected-area coverage has not prevented land degradation, habitat fragmentation, or biodiversity decline, reflecting limits in enforcement and governance rather than coverage alone.[150]

Evidence and national research highlight tensions where conservation and forest protection initiatives have proceeded without adequate consultation or compensation. In such cases, conservation has intersected with unresolved tenure claims, particularly affecting small-scale farmers and communities relying on customary or informal land rights.[151]

Post-war land conflicts and unequal restitution

Land inequality is most acute in the northern and eastern provinces, where large areas of land seized during the civil war remain under military or state control. Detailed legal and political analysis documents how incomplete restitution, continued militarization, and administrative land acquisition have constrained the ability of war-affected Tamil and Muslim communities to reclaim land essential for housing, farming, and livelihoods.[152,153,154]

The Centre for Policy Alternatives has documented how land alienation has also occurred through development, conservation, and heritage protection initiatives, including the expansion of forest and wildlife reserves and the involvement of central government agencies. These processes have disproportionately affected small-scale farmers and war-affected communities, reinforcing historical inequalities in land access and undermining trust in land governance institutions.[155,156]

These governance blind spots are particularly evident in the treatment of wetlands, where ecological, cultural, and spiritual values are rarely reflected in formal land-use decision-making (see text box).

The religious and cultural dimensions of wetlands

Wetlands are central to the land–water–food nexus: they regulate floods, store and filter water, support biodiversity, and sustain agriculture and livelihoods—functions that are increasingly critical in climate-vulnerable settings such as Sri Lanka.

Beyond these ecological roles, wetlands across Sri Lanka carry deep religious and cultural significance. Lakes, village tanks, marshes, and floodplains are woven into ritual life, spiritual practice, and local cosmologies, shaping long-standing relationships of care, gratitude, and restraint in how communities engage with water and land. These relationships have historically underpinned collective management practices, particularly in irrigation- and wetland-dependent farming systems.

Sri Lanka has an extensive but fragmented legal framework for wetland protection, spanning more than 30 laws and numerous policies. However, cultural and spiritual relationships with wetlands remain largely undocumented and inadequately recognized within formal environmental governance. They persist primarily in collective memory and everyday practice rather than being reflected in planning, conservation, or land-use decision-making.

Source: International Water Management Institute[157]

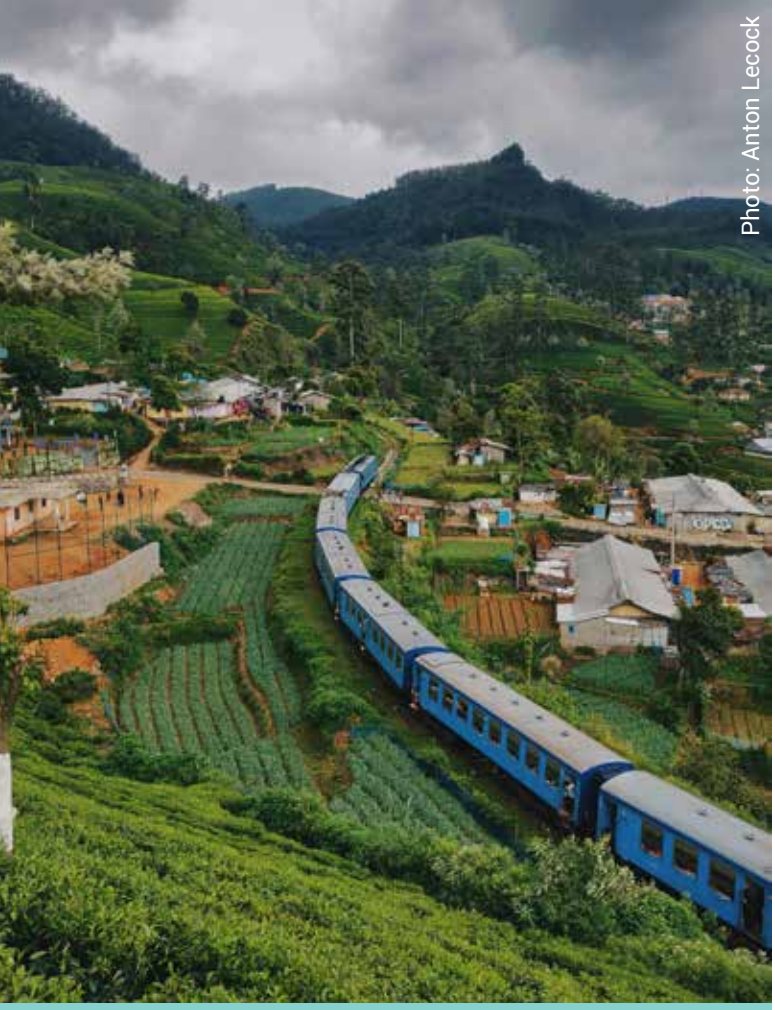


Photo: Anton Lecock

A train running through Nanuoya, Sri Lanka.


Photo: Ruwan Lakmal

Beach in Unawatuna, Sri Lanka.

3.5.2 Water resources

Key indicators

Indicator	Value
Renewable freshwater resources per capita (m³/person/year)	2312
Water-stress level (% of renewable resources withdrawn)	90.8
Agricultural water withdrawal (% of total)	87.4
Access to safely managed drinking-water services (%)	46.9
Urban–rural gap in safely managed drinking-water access (percentage points)	41.2
Access to safely managed sanitation services (%)	N/A

Variability, extremes, and climate risk

Although renewable freshwater availability per capita remains relatively high, Sri Lanka withdraws more than 90 percent of its renewable water resources, signalling acute management stress rather than absolute scarcity. This pressure reflects heavy irrigation demand, seasonal variability, and limited buffering capacity under climate extremes. Droughts recurrently affect large parts of the dry zone, while floods increasingly damage infrastructure and contaminate water sources elsewhere. Climate change is projected to intensify both extremes, increasing uncertainty for agriculture and domestic water supply.[158]

Flood-related losses are already substantial, with recurrent flooding in urban and peri-urban areas contributing to significant economic damage and service disruption, particularly in and around Colombo where wetland loss has reduced natural flood buffering capacity.[159]

Irrigation dependence and institutional exclusion

Agriculture accounts for nearly 87 percent of total water withdrawals, reflecting heavy reliance on irrigation. Access to irrigation water is closely tied to land tenure: formal membership in irrigation organizations typically requires documented land rights, effectively excluding landless cultivators and many female farmers from water allocation decisions.[160,161]

These institutional arrangements reinforce inequality. Women cultivating land registered in a male relative's name often lack formal rights to irrigation water, while smallholders outside major schemes depend on informal or unreliable sources, leaving them more vulnerable during droughts.[162]

Photo: Paul Jeffrey/Life on Earth

A child washes his hands in a preschool run by the Church of the American Ceylon Mission in Kudathanai, Sri Lanka.

Water quality, health, and rural vulnerability

While access to basic drinking-water services is relatively high, fewer than half of Sri Lankans (46.9%) have access to safely managed drinking water services, revealing a significant gap between nominal access and service quality.[163]

The exceptionally large urban–rural gap in safely managed drinking-water access exposes deep inequalities affecting rural and estate communities. Rural and estate communities face particular challenges, relying on unsafe or intermittent sources. In the dry zone, poor water quality has been linked to chronic kidney disease among agricultural communities, where groundwater contamination, agrochemical exposure, and heat stress interact.[164,165]

Urban flooding and displacement

In urban areas, flood risk disproportionately affects low-income households living in informal settlements in flood-prone zones. Research and investigative reporting document cases in which flood-management and urban development responses have prioritised eviction and clearance over in-situ service improvement, raising concerns about tenure security, equity, and the realization of the right to water and sanitation under climate stress.[166,167]

3.5.3 Food and agriculture

Key indicators

Indicator	Value
Employment in agriculture (%)	26
Cereal yield (kg/ha)	3804
Fertilizer use (kg/ha)	154
Prevalence of undernourishment (%)	7.4
Anaemia among women (%)	20.9
Food imports (% of merchandise imports)	15

Livelihoods under structural and climate pressure

Despite moderate cereal yields and continued reliance on food imports to stabilize domestic supply, agriculture remains a central livelihood for around one-quarter of the workforce, particularly for women and older workers in plantation and smallholder systems. Estate communities, many of whom are descendants of Tamil plantation labourers, continue to experience low wages, insecure employment, and limited access to land, contributing to persistent poverty and food insecurity.[168,169]

Climate impacts further exacerbate these vulnerabilities. Climate-related production losses have been significant in recent years, affecting staple crops and export commodities alike. Rain-fed farmers and agricultural wage labourers with limited savings or insurance are particularly exposed to droughts, floods, and rising temperatures, which disrupt production and income stability.[170]

Policy shocks and unequal capacity to recover

Recent policy and economic shocks have exposed structural weaknesses in Sri Lanka's food system. Abrupt changes in input availability, combined with climate stress, have resulted in production losses and income declines that disproportionately affected smallholders and agricultural labourers with limited capacity to absorb shocks or recover from failed harvests.[171,172]

These impacts were compounded by rising food prices during the economic crisis, reducing households' ability to purchase sufficient and nutritious food. Assessments indicate that food insecurity increased rapidly among low-income households and estate communities.[173,174]

Nutrition gaps and inequality

Despite moderate aggregate production, nutrition outcomes remain uneven. Anaemia among women and undernourishment persist, reflecting income inequality, gender norms, and limited access to diverse diets. Estate communities and conflict-affected regions consistently record worse nutrition outcomes than national averages, highlighting the limits of production-focused approaches in addressing food security without complementary social and equity-focused measures.[175,176]

Trade exposure and adaptive capacity

Food imports account for around 15 percent of total merchandise imports, reflecting Sri Lanka's reliance on global markets to complement domestic production. While trade can buffer short-term supply shocks, it also exposes the food system to international price volatility and macroeconomic instability.[177]

National strategies emphasize climate-resilient agriculture, improved water management, crop diversification, and stress-tolerant varieties. However, evidence indicates that the effectiveness of these measures depends on who can adopt them. Insecure land tenure, limited access to credit and extension services, and unequal control over productive resources constrain farmers' capacity to invest in resilient practices, reinforcing the importance of addressing structural and governance barriers alongside technical solutions.[178,179]

Photo: Paul Jeffrey/Life on Earth

Widows from Sri Lanka's bloody civil war work in a cooperative restaurant in the northern town of Kilinochchi.

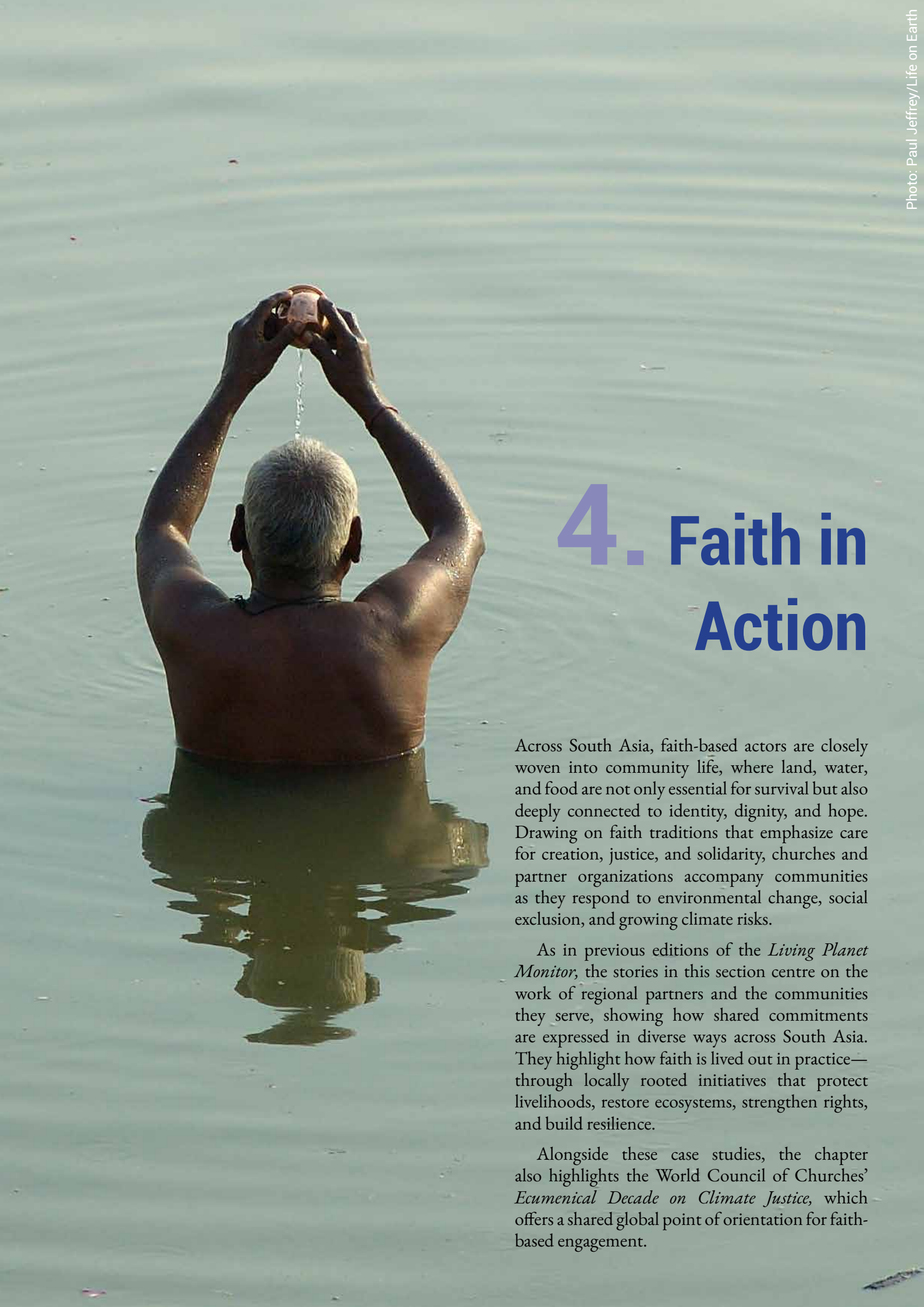


Photo: Paul Jeffrey/Life on Earth

4. Faith in Action

Across South Asia, faith-based actors are closely woven into community life, where land, water, and food are not only essential for survival but also deeply connected to identity, dignity, and hope. Drawing on faith traditions that emphasize care for creation, justice, and solidarity, churches and partner organizations accompany communities as they respond to environmental change, social exclusion, and growing climate risks.

As in previous editions of the *Living Planet Monitor,* the stories in this section centre on the work of regional partners and the communities they serve, showing how shared commitments are expressed in diverse ways across South Asia. They highlight how faith is lived out in practice—through locally rooted initiatives that protect livelihoods, restore ecosystems, strengthen rights, and build resilience.

Alongside these case studies, the chapter also highlights the World Council of Churches' *Ecumenical Decade on Climate Justice,* which offers a shared global point of orientation for faith-based engagement.

4.1 Church in action: the Ecumenical Decade of Climate Justice Action (2025–34)

A Call Rooted in Faith

The Earth groans under the weight of exploitation, and vulnerable communities bear the heaviest burdens of a crisis they did not cause. Yet our faith proclaims good news for all creation!

The **Ecumenical Decade of Climate Justice Action (2025–2034)** is a bold invitation from the World Council of Churches and ecumenical partners worldwide: a pilgrimage of repentance, renewal, and action to confront the climate emergency with courage, hope, and love.

Why This Decade?

The climate crisis is not only an environmental emergency—it is a spiritual and moral crisis.

- Rising temperatures, floods, fires, and droughts are destroying lives and livelihoods.
- Injustice deepens as the poorest and most marginalized suffer most.
- Greed and consumerism corrode creation and community alike.

As churches and faith communities, we have both moral authority and global presence. Now is the time to lead—by repenting of complicity, resisting ecological sin, and reclaiming our vocation as caretakers of God's creation.

This Decade is our shared response: a call to ecological metanoia—a turning of hearts, communities, and systems toward life.

What the Decade Is About

The Decade is not just a campaign or a project. It is a spiritual pilgrimage and a prophetic movement of churches worldwide.

- **Spiritual Journey:** Lament, repent, and renew discipleship rooted in care for creation.
- **Prophetic Witness:** Speak truth to power, challenge injustice, and advocate for systemic change.
- **Practical Action:** Transition churches to renewable energy, build resilience in communities, and support adaptation and biodiversity.
- **Living Witness:** Become sanctuaries of sustainability, centres of resilience, and voices of hope.

Together, we proclaim: **System change, not climate change!**

Our Vision for 2034

By the close of this Decade, we envision:

- **Churches Leading by Example:** Eco-sanctuaries, climate-centred worship, and pensions invested in life.
- **Policy Breakthroughs:** Ecocide recognized as a crime, fossil fuel phase-out underway, climate finance, justice and reparations advanced.
- **Resilient Communities:** Indigenous, youth, women, and frontline communities shaping solutions.
- **An Economy of Life:** Alternatives to extractive capitalism rooted in equity, justice, and sustainability.

Photo: Paul Jeffrey/Life on Earth

How We Will Journey

The Decade will move forward through six concrete pathways:

1. **Transform Theology and Worship**—eco-theologies, creation liturgies, and spiritual disciplines.
2. **Promote Holistic Analysis**—connecting climate with justice, economics, race, and gender.
3. **Equip Faith Communities**—toolkits, trainings, and climate chaplains.
4. **Mobilize Collective Action**—pilgrimages, days of action, and global campaigns.
5. **Advocate for Systemic Change**—prophetic witness in courts, policies, and public spaces.
6. **Invest in Grassroots Solutions**—funding local adaptation, biodiversity protection, and renewable energy.

Who Is Involved

This is a whole-church, whole-world journey:

- **WCC member churches** and global ecumenical partners leading locally and globally.
- **Regional and national ecumenical bodies** contextualizing action.
- **Denominations and seminaries** shaping theology and discipleship.
- **Interfaith partners** joining in shared action.
- **Youth, women, Indigenous peoples, migrants, and emerging leaders** at the heart of vision and leadership WCC member churches leading locally and globally.

An Invitation to Hope in Action

We stand at a crossroads. Continuing with business as usual condemns future generations to despair. But with repentance and courage, we can journey together toward renewal.

This Decade is our Exodus from greed and destruction, and our pilgrimage toward life abundant. Guided by the Spirit, we act in faith, knowing that in Christ all things are being made new (Revelation 21:5).

Join Us

Together we commit:

- To repent and transform
- To stand with the vulnerable
- To transition from fossil fuels to renewable, life-giving energy
- To advocate for systemic change
- To embody the Economy of Life
- To renew the church's witness
- To walk together in hope

Will you join this prophetic pilgrimage of climate justice action?

To learn more about the Decade or to share a faith-rooted climate justice action, visit https://oikoumene.org/what-we-do/care-for-creation-and-climate-justice/ecumenical-decade-of-climate-justice-action.

Photo: Marcelo Schneider/WCC

Photo: Photo: Simon Chambers/ACT


Photo: CCDB

Halima Begum (25) collects drinking water from a household rainwater storage system in Patharghata, Barguna district, Bangladesh.

4.2 From water collectors to water managers: women leading climate resilience in Bangladesh

In the climate-vulnerable coastal village of Vamia in southwestern Bangladesh, water scarcity and rising salinity have long shaped daily life. Women have carried the heaviest burden, walking long distances each day to collect safe drinking water for their families while coping with declining agricultural livelihoods and growing climate uncertainty.

Through a community-led approach supported by the Christian Commission for Development in Bangladesh (CCDB), women in Vamia have moved from being water collectors to water managers. By leading local water governance structures and combining improved access to safe water with climate-adaptive livelihood practices, they are strengthening resilience, dignity, and long-term security for their households and community—offering a powerful example of faith-based action in the face of climate change.

Water scarcity, livelihoods, and vulnerability

Vamia is a small village located in Shyamnagar Upazila of Satkhira District, on the southwestern coastal edge of Bangladesh. Surrounded by rivers, fields, and open skies, the village displays a quiet natural beauty. Yet beneath this beauty lies a daily struggle shaped by climate change.

For years, the people of Vamia have lived with increasing water scarcity and climate uncertainty. Climate change has intensified cyclones and storm surges, exacerbating water salinity and making access to safe drinking water ever more difficult. Rising salinity, irregular rainfall, and frequent climate shocks have affected agricultural activities, health, education, and overall livelihoods. In particular, the acute shortage of safe water severely constrained irrigation, contributing to declining agricultural production and growing unemployment.

Women bore the heaviest burden of this crisis. Responsible for household water

management, they walked long distances each day to collect potable water, often in extreme heat. In many cases, women also carried water to agricultural fields. Safe water was so scarce that men, women, children, and even the elderly were forced to spend hours each day collecting water, turning survival into a constant physical strain.

At times, men migrated temporarily in search of work outside the village. During these periods, families depended largely on food brought in from outside, with little control over their own food security, income, or future.

Faith in action: women-led water governance

Change began when CCDB started working with the climate-vulnerable community of Vamia. CCDB supported the community in claiming their human rights and accessing justice, while promoting sustainable livelihoods with dignity. Central to this work was the principle of "Bring People in Action," emphasizing local leadership and community ownership.

To address the potable water crisis, CCDB installed Pond Sand Filters (PSFs) and rainwater harvesting systems within walking distance of households. Rather than providing short-term relief, the focus was on building a locally led and sustainable water management system.

Women from the village were mobilized to form a 30-member, women-led Management Committee responsible for overseeing the water systems. Through participatory decision-making, the committee established a community water governance system that now ensures equitable access to safe drinking water for nearly 200 vulnerable families. The committee developed clear rules for water distribution and introduced a small monthly maintenance fee, managed transparently to ensure that the systems remain functional throughout the year.

From 2017 to 2025, eight consecutive years of successful operation have demonstrated the strength and sustainability of women's leadership. As Sufia, the committee leader, explains, "We, the women, were always treated as water collectors; now people call us water managers." Taslima Begum, the committee's treasurer, highlights how regular monthly meetings ensure transparency and how surplus funds are reinvested in women's welfare initiatives.

What once required long and exhausting walks is now available closer to home, bringing relief, dignity, and improved health outcomes—particularly for women and children.

Strengthening livelihoods through climate-adaptive practices

Alongside improved water access, CCDB supported the community through the Community Climate Resilience Center, within which a Climate Adaptive Learning Center was established. This space allowed community members to see and learn about climate-adaptive technologies suited to their local conditions.

With hands-on training and awareness building, villagers began adopting climate change adaptation practices in agriculture and alternative income-generating activities. Crop production increased, new livelihood options emerged, and resilience gradually took root. Women played a particularly important role in this transformation. When men were away fishing, women took the lead in farming activities and home gardening.

Using improved seed varieties, fertilizers, and climate-adaptive techniques, women expanded

Community members collect drinking water from a CCDB-supported pond–sand filter in Morrelganj, Bagerhat, Bangladesh.

Hasina Begum (45) collects drinking water from a community rainwater storage system in Patharghata, Barguna district, Bangladesh.

food production through methods such as sack gardening, ladder-based vertical cultivation, and floating cultivation in waterlogged areas. Salt-tolerant crop varieties and soil conservation practices further strengthened agricultural resilience. Many women also began producing vermicompost, using organic fertilizers for their own fields and selling the surplus to other farmers.

Income from agricultural production now supports essential family needs, including education, healthcare, housing improvements, and daily food consumption, reinforcing both food security and economic stability.

Engaging Youth for Climate Resilience

Youth engagement formed an important element of the community's resilience efforts. Through the Community Climate Resilience Center, young villagers received training in farming techniques, disaster preparedness, and sustainable agriculture, equipping them with essential skills for the future.

Younger farmers showed strong motivation to adopt adaptive technologies, contributing to increased productivity and innovation. Field officers worked closely with the community to ensure that training was translated into practice. Even children still in school began learning and practising climate adaptation, preparing themselves to face future climate challenges with confidence.

A community shaping its own future

Today, Vamia stands as a living example of community-led climate resilience. While climate change continues to bring new challenges, the people of Vamia now face these realities equipped with knowledge, appropriate technologies, and strong collective leadership.

Women's leadership in water governance has not only reduced daily hardship but also strengthened dignity, confidence, and social cohesion across the community.

Beyond reducing climate risks, the community continues to improve livelihoods, safeguard health, and invest in education for the next generation. Each step reflects a determination to build a more secure and empowered future, even in the face of ongoing climate uncertainty.

4.3 From hidden assets to new opportunities: participatory planning in Sri Lanka and India

In coastal communities in Sri Lanka, many families believe that their land has little to offer beyond what it has always provided. Poor soils, salinity, and recurring climate shocks made vegetable production seem unrealistic—especially in small household gardens.

Through the Participatory Integrated Plan (PIP) approach—supported by faith-based organizations Woord en Daad and Help a Child International, working through their local partners in Sri Lanka and India—families are beginning to discover assets they did not know they had, including the potential of their own land and the capacity to shape their future together.

From uncertainty to agency

In Sri Lanka, the PIP approach was introduced by Woord en Daad and its local partner, the Organization of People for Engagement and Enterprise (OPEnE), as part of a shift toward income diversification, building on earlier work focused on sustainable fisheries. The PIP is a community-led planning methodology that supports families in analyzing their own resources,

The PIP Plan is a drawing or vision of a better future, which together with an action plan motivates families to act and transform their reality.

Ganesh, 25, is part of a farmer group exploring crops and small-scale livestock to cope with annual flooding.

Photo: Help a Child, Pandian S.

A farmers' meeting.

defining a shared vision for their future, and developing step-by-step plans for land use, livelihoods, and wellbeing.[180]

When the first trainers arrived in Madhu, an inland village in Sri Lanka's Northern Province, many households were sceptical. Vegetable production in home gardens seemed impossible, and few believed that small plots of land could contribute meaningfully to food security or income.

In communities already facing economic pressure and environmental stress, the invitation to join a new training programme was often met with hesitation. Some families initially declined, unsure whether the effort would be worthwhile.

Perspectives quickly shifted, though. Families realized how much could be achieved with small, practical steps, and their confidence grew. What once seemed to be unproductive land started to look different—not as a limitation, but as a starting point.

How the PIP approach works

According to Dico van den Noort, the transformation seen in Madhu reflects something they observe across PIP projects in different regions.

"The right mindset is important for implementing the PIP approach," Dico explains. "We don't come with ready-made answers. We don't tell farmers what to do. We're not here to create dependencies. Instead, we act as mentors—helping families analize their own challenges and find their own solutions."

The PIP approach is simple but powerful: families reflect on where they are now, what their dream is, and the concrete steps they can take to move toward that dream. The method was developed by Wageningen University. In PIP, farmers lead the process, with the entire family involved as the planning unit for their land, livelihoods, and future.

The effect is strengthened by PIP's train-the-trainers model, which enables organic, community-level growth. In Sri Lanka, the first "core farmers" trained through the programme have already begun to train a second generation, reaching around 60 households so far. Farmers regularly visit the farm of a local organic

agriculture expert who developed a successful food forest model—a living demonstration of what unused land can become.

"It's a way of showing what's possible," Dico says.

Discovering hidden assets

"People become aware of what they already have—their land, their skills, their networks," says Dirk-Jan Otte from Help a Child International about his experience with the PIP approach through local partners in India. "They learn how to make better use of what is already there, and that brings hope."

One example comes from the flood-prone parts of northern India, such as Purnea district in the state of Bihar, where families live with months of inundation each year as rivers fed by Himalayan meltwater and monsoon rains overflow their banks. Here, 25-year-old farmer Ganesh leads a local farmer group navigating severe annual flooding. Instead of giving up on their land, the group looks for what can grow in these conditions—such as maize—and experiments with new ideas like raising ducks as an additional source of food and income.

Together, they save money to purchase a boat so that they can reach their fields during floods, and they make joint decisions about which innovations to test. Their approach mirrors the core principles of PIP: recognizing existing assets, planning collectively, and seeing possibilities where others see limits.

Surveys conducted by Help a Child International show that these experiences are not isolated. The large majority of participating families are actively implementing their plans, investing in land restoration and climate-smart practices such as composting, tree planting, mulching, and water harvesting. More than nine in ten households report improvements in income, and nearly as many involve multiple family members in shaping and carrying out their plans—underlining PIP's role not only in improving livelihoods, but in strengthening family-level decision-making and long-term resilience.

From planning together to shared stewardship

Families not only improve land use or income—they often experience a deeper shift in identity. Dirk-Jan notes that PIP is also "changing how families work together."

Couples who once made decisions separately now describe more communication and joint planning. Parents involve their children in shaping the vision for their land. This shared process strengthens the family unit and deepens their commitment to long-term stewardship.

"Many start to see themselves as custodians of the land," Dirk-Jan says. "They want to pass it on better than they found it."

A network of "learners"

PIP has evolved from a set of pilot projects into a shared, standard approach used by a growing network, including many faith-based organizations. Woord en Daad and Help a Child International are both members of the PIP Platform in the Netherlands, which serves as a learning community, exchanging tools, experiences, and monitoring insights.

"We're really a network of learners," says Dirk-Jan Otte.

The platform works in close collaboration with Wageningen University, strengthening the evidence base and supporting continuous improvement of the PIP methodology.

You can read about PIP at: https://pipapproach.com

Photo: The Leprosy Mission

Farmers holding their poultry.

4.4 From exclusion to expertise: leprosy-affected people leading climate resilience in Sri Lanka

Twenty-six years ago, in a small village in northern Sri Lanka, a group of people affected by leprosy were barred from drawing water at the community well. The well was the only source of clean water in the area, but fear and stigma caused neighbours to insist they stay away. When Rev. T. S. Joshua, then a pastor of the local congregation of the Church of South India, witnessed the humiliation they endured, he realized that the discrimination they faced could not be addressed through charity alone. It required solidarity, empowerment, and a community willing to imagine a different future.

Rev. Joshua left parish ministry to accompany these families full-time, founding Kaveri Kala Manram (KKM) as a cultural and social initiative to break down stigma and rebuild community. Over the years, the small groups he formed grew into a national movement, the Leprosy People's Association (LPA) of Sri Lanka, which now includes more than 600 members across six districts. This work is supported through a partnership with The Leprosy Mission Great Britain (TLMGB). What began with an act of exclusion at a shared water source has grown into one of Sri Lanka's most compelling stories of resilience, leadership, and faith-driven inclusion.

A reversal of roles: from marginalized to indispensable

Today, the very people once excluded from public life are recognized as knowledge bearers and community leaders. In many villages, LPA members train neighbours in climate-resilient agriculture, lead disaster-preparedness activities, advise local health authorities, speak publicly about stigma, and help shape district-level planning processes. Their presence—visible, confident, and deeply rooted in community life—is transforming how leprosy is understood and how inclusion is practiced.

The change is measurable. In districts such as Anuradhapura and Polonnaruwa, local stigma indicators have dropped as LPA branches have expanded. Across the project area, 23 village-level LPA societies now collaborate with more than 100 community-based organizations and 27 other district or national organizations. As Rev. Joshua notes,

"We see villages moving away from false beliefs and misconceptions about leprosy, with communities and families gaining a better understanding of the disease."

For many, this social acceptance is deeply connected to their growing role in climate resilience—an area where their experience, creativity, and commitment have positioned them at the forefront of community adaptation.

Growing resilience—and confidence—from the ground up

In northern Sri Lanka's dry-zone villages, climate change is a daily reality affecting crops, income, and food security. Many LPA members come from farming families and have been among the hardest hit.

Through KKM's partnership with the University of Jaffna's Faculty of Agriculture, farmers and students work together to test drought-tolerant crops, adopt mulching and agroforestry techniques, experiment with onion and millet varieties, and introduce water-saving methods. Students document farmers' practices and learn through field-based research.

The results are striking. Across the districts, farmers report higher yields and greater stability as they adopt new practices such as moisture-conserving mulching, drought-tolerant millet and onion varieties, and diversified cropping. LPA branches now maintain seed banks to keep resilient cultivars in local circulation, and more than 250 families have begun integrating climate-smart methods into their home gardens and farms.

For some farmers, the change has been transformational. One LPA member in Jaffna, Mahendran, reported that his coconut income tripled after he implemented moisture conservation. Another farmer, Parameshwary, shifted to cultivating drought-tolerant pearl millet and saw her monthly income rise from Rs. 2,000 to over Rs. 60,000.

Climate resilience has become a pathway into stronger livelihoods—and also, for many, into greater confidence in community life. As income improves and expertise grows, community attitudes shift.

Playback theatre for awareness and inclusion

One of the most powerful tools in this transformation is playback theatre, a creative, participatory method that allows people affected by leprosy to voice experiences that were often kept silent for years. LPA drama teams perform real stories drawn from community life—stories of stigma and discrimination, of resilience in the face of hardship, and of responding to disasters such as floods or droughts. By centring lived experience on stage, playback theatre offers visibility to people who were previously hidden and creates a shared emotional understanding within the community.

Theatre works particularly well in rural settings: it requires no literacy, invites audience participation, and transforms silence into a collective narrative. It reduces fear and shame, challenges misconceptions, and helps neighbours see one another with greater compassion. For LPA members, performing or seeing their stories enacted becomes a moment of recognition—an affirmation that their experiences matter and can be spoken in public.

Psychosocial wellbeing as a foundation for inclusion

Many people affected by leprosy have lived with isolation, internalized stigma, anxiety about disclosure, and diminished confidence. The project responds to these realities through peer support and wellbeing training, creating safe spaces where members can share experiences and support one another. These efforts

Farmer in her garden.

Two community members at the water source.

help to rebuild emotional resilience and equip LPA members with the confidence needed to take on public roles, participate in community processes, and step into leadership.

Changing realities, one community at a time

The journey from exclusion to expertise is still unfolding, but its impact is visible across Sri Lanka. LPA members are reshaping their communities through leadership, environmental stewardship, and public engagement. They are cultivating crops that withstand drought, running seed banks, contributing to disaster committees, and supporting food security.

They are also sharing experiences that were once kept quiet, helping their communities understand leprosy with greater clarity and compassion. And perhaps most powerfully, the people once denied access to a communal well are now teaching their villages how to conserve water and face climate uncertainty.

Interfaith leadership for inclusion

Faith leaders have become key partners in the LPA's work to reduce stigma and strengthen social belonging. What began in Christian pastoral ministry has grown into a broad interfaith effort in which churches, temples, and mosques collaborate actively with KKM and the LPA. Religious leaders host awareness events, open their community spaces for gatherings, and speak openly about compassion, dignity, and the importance of welcoming those affected by leprosy.

Their visible support has helped to shift perceptions in many villages and helped families feel safer allowing leprosy-affected family members to join LPA groups. This interfaith leadership has become an essential force for inclusion and a powerful catalyst for change.

Photo: Church of South India

As part of their "green wedding " ceremony, the newly-wed couple plants a fruit-bearing sapling together.

4.5 From preaching sustainability to living it: The Church of South India's green ministry

In the dry months across South India, schoolchildren in church-run classrooms are building something unexpected: hope. Guided by the Church of South India's (CSI) Green School Programme, they dig rainwater pits, track their school's water use, grow vegetables, and learn how to compost food waste.

Their efforts are part of a wider movement led by CSI—a Protestant union of over 4.3 million members—that has become one of the most influential faith voices on environmental justice in South Asia. Under the leadership of Prof. Dr Mathew Koshy Punnackadu, a science professor–turned–environmental theologian, CSI has become one of the most committed faith actors for environmental justice in South Asia.

From uncertainty to action

CSI's green journey began in the early 1990s with a simple but bold idea: environmental care should be central to the church's mission. This spiritual and ethical vision recognizes creation care as an integral part of Christian discipleship—a "covenant with the Earth" akin to our covenant with God. What followed was the creation of India's first synod-level Eco-Ministry, which today reaches thousands of parishes, schools, and youth fellowships with practical tools for creation care. Over the years, CSI has trained hundreds of "green clergy" and eco-teachers who integrate ecological themes into sermons, Sunday schools, and curricula across its institutions.

But the work goes far beyond theology. From tree planting at weddings to banning single-use plastics at church events, CSI's Green Protocol guides communities in turning good intentions into real change.

School children tend to their school garden in the Church of South India's climate resilient schools programme.

Harvest time at the school garden.

Students proudly presenting their harvest.

School children tend to their school garden in the Church of South India's climate resilient schools programme.

A parish in the state of Kerala was the first one to hold a "green wedding" in 2018. The couple planted jackfruit saplings as part of their vows and gave vegetable seeds to each guest. The ceremony became a joyful demonstration of how the Green Protocol can shape even deeply rooted community traditions. Every church is encouraged to harvest rainwater, reduce energy use, and create small "green oases" on their land.

Nurturing a new generation of creation care leaders

In the schools, the transformation is even more visible. Students conduct environmental audits, grow pesticide-free food, and champion local biodiversity. The church runs an extensive "Green Campaign" through its 94 colleges, 341 high schools, 1,704 primary schools, and numerous technical and medical institutes, offering education on climate change, sustainable agriculture, nutrition, energy saving, and more. One school replaced all plastic pens with seed-filled alternatives; another launched a district-wide awareness campaign on sustainable farming practices.

In another instance, students at a CSI school in Mundakayam, Kerala learned about the tragic effects of Endosulfan pesticide contamination in nearby Kasaragod (which for decades caused soil and water poisoning and a spike in cancer cases). Determined to help, the children created a puppet show and a street play about soil conservation, and they toured 11 districts to raise funds for the affected farming communities. Their efforts not only provided financial relief to victims but also spread awareness regarding responsible farming and the importance of uncontaminated land and food.

One of the most striking examples comes from CMS Lower Primary School in Ennooramvayal, Kerala, where children between the ages of 5 and 11 have planted more than 50,000 trees over the past decade. This student-led afforestation has revitalized the local ecosystem, attracting birds and other wildlife back to the area. Students also grow organic vegetables for the school kitchen and even manage a small fish pond—a living classroom that links caring for food, land, and water with daily life.

Caring for land, food, and water

CSI's ecological theology is rooted in justice. In 2018, it was one of the only Christian voices in India to support the contested Western Ghats conservation plan, speaking up for both biodiversity and marginalized farming communities. In its schools and congregations, the church promotes organic farming, celebrates local harvests, and helps families understand the long-term value of sustainable food systems. Students and parents alike are invited to see land not as a burden but as a gift.

Water is another area where CSI puts faith into practice. At the CSI Synod Centre in Chennai, a greywater treatment system recycles over 20,000 litres of water per day for gardens and recharge. One congregation even saw a 40 percent drop in water use after implementing audit-based changes. "Our members are planting as many trees as possible, and also plants like vetiver, jatropha, and mangroves," explains Prof. Koshy. "That improves the green cover, which is important for replenishing groundwater, controlling erosion, and reducing global warming."

This work is often deeply local and intergenerational. In one Green School, children traced water leaks through a simple audit and helped their families adopt water-saving habits at home. Elsewhere, youth volunteers organize community cleanups, tree planting drives, and climate-awareness campaigns.

Global recognition and local impact

CSI's efforts haven't gone unnoticed. The church has received international awards from the United Nations Development Programme (UNDP) and the Alliance of Religions and Conservation (ARC). It was a finalist for the UNESCO-Japan Prize on Education for Sustainable Development.

The Eco-Ministry's training model has drawn global interest through its recognition by UNESCO and partnerships with international networks such as the World Council of Churches and the Anglican Communion Environmental Network. Meanwhile, on the ground, more than 100,000 students have been reached since 2014, supported by thousands of clergy and educators.

As Prof. Koshy reflects, "Our faith calls us to protect the land we till, the food we grow, and the water we share. These are sacred gifts—and our shared responsibility."

4.6 Making the invisible visible: how faith helps communities cope with climate shocks in South Asia

Across South Asia, faith communities play a crucial role in helping people when climate disasters strike. They often offer material support as well as emotional, spiritual and social care long before formal systems respond. Through its work on faith and climate migration, the Joint Learning Initiative on Faith and Local Communities (JLI) seeks to highlight these lived practices, ensuring that they are recognized as a vital part of climate resilience.

Moments of calm in a time of chaos

When the floods swept through Sindh province in Pakistan in 2022, whole villages were submerged in a matter of hours. Families fled however they could—wading through waist-deep water, climbing onto tractors or small boats, and in some cases using charpoys, their traditional woven beds, as makeshift rafts to keep children and belongings above the rising currents. When they finally reached a temporary shelter on higher ground, they were exhausted from carrying what little they had managed to save.

Among the first things people did, as they settled into the shelter and organized themselves, was to come together in prayer.

Inside the shelters, local imams would lead small *Salah-e-Tauba* gatherings. This Muslim prayer of repentance is often performed individually but is commonly held together in times of shared distress and is often followed by duʿā—a direct, personal supplication asking for God's help. Families sat together on the floor; some held their children close while others joined in quiet recitation. The prayer brought a moment of calm in the middle of the upheaval, giving people a chance to breathe and steady themselves after the chaos of displacement.

Across the region, these small gatherings became an anchor—moments where people could acknowledge their fear and grief without feeling alone, and where spiritual practices created space to begin imagining the next day.

From shock to collective strength

Further west, in the flood-affected districts of South Punjab, similar scenes unfolded. As families arrived

Photo: Sahar Zafar/CWSA

The floods left over 6.4 million people in need of humanitarian assistance.

exhausted from days of displacement, local religious scholars organized short *du'ā* gatherings in the evenings. Unlike the Salah-e-Tauba, these are informal circles of shared supplication without a prescribed structure or length. Sometimes they lasted only a few minutes. Sometimes a recitation turned into a conversation about who had seen which neighbours, who still needed to be reached, or who had managed to save livestock or grain.

What began as a ritual often became a quiet form of coordination. Often people stayed after the prayers to help one another—sharing food, watching over children, and offering practical support where they could.

These informal networks mattered enormously. Before formal assistance reached the area, they helped families stretch limited food supplies, support the elderly and widows, and keep track of who was missing or stranded.

Why documenting the invisible matters

None of this activity appeared in formal disaster reporting, but it shaped how families coped in the first days when official relief was delayed.

This is the visibility gap JLI highlights: intangible forms of support are central to community resilience, yet they are often invisible in formal disaster reporting.

Across Pakistan, Bangladesh, and Nepal, faith-rooted responses are often the first stabilizing forces after a climate shock, offering both tangible assistance and intangible support that shapes how people cope. They help people make sense of what has happened, reconnect after chaos, and regain enough emotional grounding to organise the practical tasks of survival.

But because these forms of support—from prayer gatherings and moments of shared reflection to the informal coordination that naturally unfolds when people come together—are intangible, they rarely appear in humanitarian reports or adaptation plans.

This invisibility creates a blind spot: official frameworks risk assuming that psychosocial and spiritual support is secondary, when for many communities it is the foundation that enables everything else.

How JLI helps surface what is already there

This is where JLI plays a crucial role. Through its work on faith and climate migration, JLI has focused deliberately on what most formal assessments overlook: the spiritual and psychosocial practices that communities draw on instinctively in moments of distress.

To develop its 2025 evidence review and guidance, JLI used its Mind–Heart methodology—an approach that brings together rigorous evidence gathering ("mind") with deep listening to communities ("heart"). Listening dialogues create space for people to articulate not only what they did, but why these practices mattered during moments of upheaval.

Through this process, JLI helps make visible the forms of material, emotional, and spiritual support that communities already rely on, ensuring that they are recognized in policy spaces where resilience and adaptation strategies are shaped.

Loss of Land, Loss of Place

Not all climate impacts arrive with the drama of a flood. Across South Asia, many families face a slower and more devastating rupture: the loss of land itself. In parts of

Massive monsoon flooding impacted 73% of Pakistan's districts in 2022.

Distribution of hygiene kits, jerry cans, mosquito nets, and shelter kits during the floods in 2022.

Sindh and South Punjab, farmland that once sustained generations is now too saline to cultivate or has been eaten away by shifting riverbanks. In Bangladesh's char regions and Nepal's unstable hillsides, entire settlements describe their land as "vanishing under their feet."

For families whose identity is tied to place—to ancestral soil, to the graves of elders, to memories rooted in specific landscapes—losing land is not only an economic shock. It is also an intangible loss: a break in continuity, belonging, and the spiritual connection to home.

In Tando Hafiz Shah, a village in Pakistan's Thatta district in Sindh province, repeated flooding and land degradation have forced families to confront exactly this kind of loss. As livelihoods eroded and displacement became a recurring reality, local faith leaders organized small prayer gatherings and acts of *sadaqa* (charitable giving). These moments created space for people to speak openly about what was being lost—not only land and income but identity, stability, and a sense of their future.

In these gatherings, faith did not erase the hardship people faced, nor did prayer restore the land itself. But participants described the practices as helping them regain emotional grounding and a sense of collective strength. By naming their loss together and framing it within shared spiritual language, communities found ways to support one another through grief and uncertainty.

This is where faith-based responses can become transformative. They help communities process loss that has no clear technical solution, and they offer meaning in situations where adaptation measures alone fall short.

From local practice to wider recognition

JLI's work highlights these forms of loss as essential to understanding climate migration in the region. By documenting how communities make sense of land disappearance and cultural dislocation, JLI helps ensure that these realities are reflected in broader discussions on resilience, adaptation, and just transitions. Without recognizing these non-material losses—the loss of place, identity, and spiritual grounding—policies risk addressing only half of what climate change takes from people.

By bringing lived practices and experiences to the fore, JLI frames them as integral to resilience rather than as cultural footnotes. This recognition strengthens the role of faith actors in emergencies, improves coordination with humanitarian agencies, and encourages adaptation strategies that reflect real community priorities.

Connecting local wisdom to global learning

The Joint Learning Initiative on Faith and Local Communities (JLI) is a global network that brings together researchers, faith actors, and humanitarian and development organizations to strengthen evidence on the role of faith in community wellbeing. Its work spans a wide range of themes, including climate resilience, gender justice, disability inclusion, child wellbeing, and localization.

Working across global, national, and local levels, JLI helps to draw attention to community knowledge, document lived experience, and highlight faith-based contributions that are often overlooked or under-recognized in formal reporting. Its Mind–Heart methodology combines rigorous evidence gathering with deep listening to people's lived realities.

As Noor Ur Rehman, JLI's Regional Coordinator for South Asia, puts it, "JLI is like an octopus—we gather knowledge from everywhere and share it in ways that strengthen work from global to local levels."

Through its thematic learning hubs, collaborative research, and partnerships, JLI connects insights across regions and ensures that lived practices and community wisdom inform policy and strengthen resilience.

Find out more at https://jliflc.com/ or read the Evidence Brief on Faith and Climate Migration at https://jliflc.com/resources/evidence-review-on-faith-and-climate-migration/.

Photo: Paul Jeffrey/Life on Earth

A boy at play, rolling an old tire through the dusty streets of Irula, a small village in southern India's state of Tamil Nadu.

Photo: Paul Jeffrey/Life on Earth

Bishnu Kumari Banjara herds some of her goats in Dhawa, a village in the Gorkha District of Nepal. Following the 2015 earthquake that ravaged Nepal, she received several baby goats from Dan Church Aid, a member of the ACT Alliance, as a way to earn a livelihood and restart the village economy. Helping people in this and other largely Dalit villages has been a priority for ACT Alliance agencies.

5. Theological Reflection: Water, Justice, and the God Who Sees

This theological reflection draws on and adapts excerpts from Rev. Dr. Raj Bharat Patta's reflection "Stigma and discrimination: an impediment to the human right to water, with specific reference to casteism in India," prepared for Seven Weeks for Water 2019.

Raj Bharat Patta is an Indian Dalit theologian and ordained minister whose scholarship and ministry engage questions of faith, justice, and the public sphere in postcolonial contexts, including in his book Subaltern Public Theology: Dalits and the Indian Public Sphere.

Throughout this report, indicators have traced patterns of land degradation, water stress, food insecurity, and climate vulnerability across South Asia. Together, they reveal not only mounting ecological pressure but also deep social inequalities in how environmental harm and risk are experienced. Again and again, the analysis has shown that access to land, water, and food is shaped by power relations, discrimination, and exclusion—raising questions that are not only technical or political but profoundly ethical.

These realities invite theological reflection. In the biblical tradition, water is never merely a resource. It is a condition of life itself. Denial of water is therefore never neutral: it is a matter of survival, dignity, and justice.

In 2019, Rev. Dr. Raj Bharat Patta reread the biblical story of Hagar (Genesis 21:8–21) through the lived realities of caste-based discrimination and water injustice in India. By giving voice to Hagar—a woman cast out, denied protection, and left to face death by thirst with her child—the reflection brings Scripture into dialogue with contemporary struggles for water, dignity, and life.

Hagar's story is one of abandonment and near death. Cast into the desert with only a skin of water, she faces the slow violence of thirst. Speaking in Hagar's voice, the reflection begins:

> Early in the morning, long before the sunrise, when it was still dark, Abraham . . . deserted us and sent us away into the desert. All that he gave was some left-over food and a skin of water and left us into the dark.

As the water runs out, thirst becomes unbearable. Life itself hangs in the balance:

> I realized without water, life is nearly death. For I have seen it with my own eyes, for my son was nearing death from thirst, and was longing for fresh water.

This experience of thirst is not presented as accidental or natural but as bound up with power, patriarchy, and exclusion. Hagar is a woman, a slave, a foreigner—disposable within a social order that denies her security and dignity. Yet the biblical narrative also bears witness to a God who sees and hears—*El-Roi*—a God attentive to the cries of those pushed to the margins:

> The God of Hagar is a God who sees and is a God who hears, for the God of justice sees and hears the cries and tears of communities who have been living under stigma, discrimination and exclusion.

Water, in this story, is life restored. A well appears. Thirst is quenched. Survival becomes possible. The reflection insists that this divine response is neither abstract nor delayed, but concrete and timely:

> God's response is accurate, timely and relevant . . . . God gave us waters of life so that we become a stream of life for many generations.

Read alongside the findings of this report, Hagar's story resonates deeply with contemporary realities across South Asia. As the country spotlights have shown, many communities live with chronic water insecurity even where national indicators suggest progress. Dalit communities in India, landless agricultural workers, female-headed households, informal settlement residents, and indigenous peoples are often those most exposed to water scarcity, contamination, flooding, or unreliable supply—and they are also the ones least able to influence decisions about water allocation and governance.

Rev. Patta's reflection makes this connection explicit by linking Hagar's experience to caste-based discrimination in India today:

> One of the ways through which the casteist people expose their segregation and discrimination to Dalits is by denying the access to water . . . denial of access to water means denial of right to life. The violation of a basic human right such as water reveals the cruel indignity of the caste system today.

A powerful theological insight emerges here that echoes the report's analysis: water injustice is never only about water. It affects food production, livelihoods, health, and survival. When access to irrigation determines whether crops can be grown, or when women must walk long distances to fetch water at the cost of their time, safety, and health, denial of water becomes a denial of life chances. It undermines not only wellbeing but the realization of fundamental human rights, including the right to water, food, health, and dignity.

The story of Hagar thus exposes both the violence of exclusion and the possibility of transformation. It names the structures—patriarchy, caste, and disposability—that produce thirst, while also affirming a vision of justice rooted in care, presence, and life-giving response. Theology, in this sense, does not stand apart from evidence. Rather, it interprets evidence ethically. It asks what it means, morally and spiritually, when entire communities must struggle for access to the most basic conditions of life.

The faith-in-action stories presented in this volume offer glimpses of how such a response can take shape in practice. Across South Asia, faith-based actors accompany communities facing water stress, land loss, climate shocks, and exclusion. They support women's leadership in water governance, strengthen livelihoods, challenge stigma, and work to transform institutions and practices. In theological terms, these initiatives can be understood as ways of becoming what Rev. Patta's reflection calls "water angels"—agents of life and justice in contexts of thirst.

To speak of *El-Roi*, the God who sees, is to affirm that lives pushed to the margins by caste, gender, poverty, and environmental stress are neither invisible nor insignificant. It challenges faith communities to align their own ways of seeing with this divine attentiveness to injustice.

Within the framework of the World Council of Churches' Ecumenical Decade of Climate Justice Action, this calling takes on renewed urgency. Care for creation cannot be separated from care for people, and justice for planet Earth is inseparable from justice for those most affected by environmental harm. Faith communities are called not only to respond to immediate need but to challenge the structures that deny access to land, water, and food, and to work toward systems that uphold dignity, rights, and life.

The story of Hagar ends not with despair but with survival and promise. Life continues, not because injustice disappears but because God's response affirms life in the midst of exclusion. As this report has shown, the challenge for our time is not a lack of water alone but a lack of justice. To listen to Hagar today is to hear the cries of those living with thirst—for water, for dignity, for rights—and to respond with commitment, courage, and compassion. In a region marked by profound ecological stress and deep inequality, the call is clear: to help uncover wells of life and to become bearers of living water in a thirsty world.

Photo: Albin Hillert/LWF

Women clean dishes after a shared meal in Biruwa, Nepal. As Dalits are among the most marginalized communities in Nepal, members of other castes often refuse food offered by them. On this day, however, visitors—including local authority officials—sat and ate together with Dalit families, affirming the equality and dignity of all people.

Photo: Mike Swigunski

Bhutan Mountain terrain.

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The *Living Planet Monitor* gives you an overview of the situation in a particular continent in the world by monitoring indicators on food security, water resources, land use, and climate resilience. It is a key instrument for faith communities to stay informed on the current situation, share good practices and projects led by church-based organizations, and give hope and courage to transform the situation.

If you have an interesting story or a good practice to share on the issues of land, water, and food or its nexus, please write to us at infowcc@wcc-coe.org.

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