



REVIEW AND COMPENDIUM OF ENVIRONMENTAL POLICIES AND LAWS IN BHUTAN

*Input to the Asian Judges Network
on Environment*

Prepared by Antonia Gawel and Irum Ahsan

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Foreword

Bhutan is at an important crossroads. As our country accelerates its pace of development, we have important choices to make regarding how such development will impact our environment, wildlife, culture, and people. The National Environment Strategy of 1998 emphasized that Bhutan would pursue a middle path of development, that is, development that recognizes the need to develop our economy while still maintaining our rich cultural heritage and traditional values—as well as preserving our natural resources base. How this is achieved—how we meet the social and economic needs of our people while still conserving the environment—may even be more important today than it was 16 years ago.

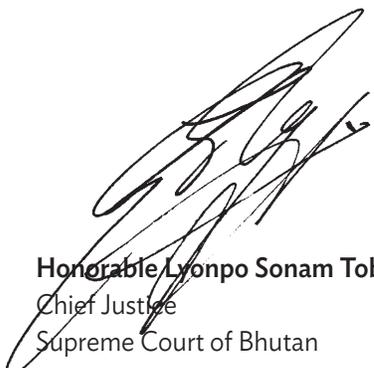
Bhutan has developed many policies and laws to preserve our vast, diverse natural resources. They outline procedures for ensuring the sustainable management of our forests, waterways, wildlife, and plants, while economic activity—from mining to infrastructure development to industry—is undertaken in such a manner that environmental impacts are minimal and properly managed. Although these well-developed laws are an important first step, adherence to these laws by the people of Bhutan, as well as appropriate monitoring and enforcement, is also key to ensuring that the intended sustainable development outcomes are achieved. The National Environment Commission plays a critical role in this regard.

The Royal Court of Justice can also play a unique supporting role. With the capacity to protect environmental rights and obligations outlined in the Constitution, support the introduction of international environmental law into national law, and render decisions that prevent environmental harm, our judges can ensure that environmental justice is delivered to the people of Bhutan. As Chief Justice, I am committed to supporting this endeavor.

Achieving the ideal balance between economic development and environmental protection is not unique to Bhutan, as our neighboring countries face many of the same challenges, often on a much larger scale. For this reason, from 30 to 31 August 2013, the Royal Court of Justice, in partnership with the Asian Development Bank, hosted and convened the Second South Asia Judicial Roundtable on Environmental Justice in Thimphu. During this meeting, chief justices, senior court officials, and environmental experts from South Asia were brought together to talk about the issues that we face as a region and to discuss the development of environmental justice. The meeting's key objectives included developing an enhanced understanding of shared environmental challenges

within South Asia, sharing experiences on environmental adjudication challenges and successes in various South Asian countries, and furthering cooperation between South Asian judiciaries. As a key outcome of this important process, the Royal Court of Justice committed to sharing information and building capacity related to environmental policies and laws.

This review and compendium of our country's environmental laws, policies, and regulations aims to enhance the accessibility to information by judges, lawyers, government officials, and stakeholders interested in ensuring the preservation of Bhutan's natural resources. By increasing access to information and the dissemination of knowledge, we also hope to empower our citizens to take action in support of environmental protection in Bhutan.



Honorable Lyonpo Sonam Tobgye
Chief Justice
Supreme Court of Bhutan





Abbreviations

ADB	-	Asian Development Bank
EIA	-	environmental impact assessment
GDP	-	gross domestic product
GHG	-	greenhouse gas
km ²	-	square kilometer
m	-	meter
NEC	-	National Environment Commission
NEPA	-	National Environment Protection Act
RSPN	-	Royal Society for the Protection of Nature
SEA	-	strategic environmental assessment
UNFCC	-	United Nations Framework Convention on Climate Change

Glossary

<i>drangpon</i>	-	justice
<i>dungkhag</i>	-	subdistrict
<i>dzongkhag</i>	-	district
<i>gewog</i>	-	village group
<i>thrimpon</i>	-	judge

Currency Equivalents

Currency unit	-	ngultrum (Nu)
Nu1.00	=	\$0.01621
\$1.00	=	Nu61.79





1 Background

1.1 ENVIRONMENT

Bhutan is a landlocked country in the Eastern Himalaya region of South Asia, located between the People's Republic of China to the north and India to the south. It is home to a population of 748,303 persons,¹ within a landmass of 38,394 square kilometers (km²). Bhutan's highest mountains in the north reach up to 7,570 meters (m), and altitudes drop to as low as 100 m above sea level in the south. Its harsh, mountainous terrain has given it natural inaccessibility, helping ensure the preservation of the country's pristine environment and resources.

The glaciers in the north, and the significant altitude differential between the north and south over a short distance of 140 kilometers, also give Bhutan one of its more important natural resources endowments: glacier-fed rivers that flow through the country and into bordering India.

Bhutan is home to a diverse ecosystem, ranked among the top 10 countries in the world with the highest species density and recognized as a biodiversity hot spot.² It also has the highest proportion of land in protected areas, with five national parks, four wildlife sanctuaries, and a nature reserve, covering an area of 16,396.4 km²—42.7% of the country. Bhutan also has the highest proportion of forest cover in Asia at 72%.

Due to its vast forests, Bhutan currently enjoys negative carbon emissions, as current greenhouse gas (GHG) emissions are below the sequestration capacity of the country's forest carbon sink. Accordingly, ambient air and water quality are considered very good to excellent, but with growing urbanization, industrialization, and a rapid increase in vehicle transport, they are deteriorating in some urban and industrial areas. Other key environmental challenges include unsustainable agriculture, deforestation, overgrazing, infrastructure development and mining, increasing solid waste, and stress on water resources.³

¹ Bhutan National Statistics Bureau. <http://www.nsb.gov.bt/main/main.php>

² According to the United Nations Environment Programme, biodiversity hot spots are areas of particularly high species richness and endemism, which are under particular threat (http://www.unep.org/geo/GEO3/english/pdfs/chapter2-4_biodiversity.pdf).

³ Government of Bhutan. 2012. *Bhutan: In Pursuit of Sustainable Development—National Report for the United Nations Conference on Sustainable Development, 2012*. Thimphu.

1.2 HUMAN DEVELOPMENT

Bhutan is one of the least populated countries in Asia, with a population density of 18 people per km². Habitable land is confined to low valleys given the harsh, mountainous terrain and dense forest cover; thus, the population density on habitable land is much higher.

Rapid urbanization is an important development challenge for Bhutan. The estimated average annual growth of the urban population during 2000–2005 was 7.3%. In Thimphu, the capital city, annual population growth was estimated at 12.6% in 2008.⁴ The rate of urbanization has further accelerated since that time.

Although Bhutan's poverty rate has been markedly reduced over the years due to its sustained gross domestic product (GDP) growth and improvements in key indicators and macroeconomic figures, poverty still remains a key development challenge. The poverty rate is higher in rural areas (16.7% compared to 1.8% in urban areas), where more than 90% of the country's poor reside. Poverty rates also vary between districts.⁵

The Gini coefficient, which measures the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from equal distribution, has remained almost the same at the national level (i.e., 0.35 in 2007 and 0.36 in 2012). However, it has slightly increased for both urban (0.32 to 0.35) and rural areas (0.32 to 0.34), indicating that much more needs to be done to allow Bhutan's increasing GDP to reach all levels of society, especially those living in poverty (footnote 5).

1.3 ECONOMY

Bhutan has one of the smallest economies in the world, but it has seen exceptional progress in development over the past decade, largely due to electricity export revenues to India. Hydropower has also provided environmental benefits, given clean power production, and an electricity security advantage due to the abundance of the domestic resource.

Bhutan's GDP grew at an average rate of 8.4% between 2001 and 2011, with the GDP growth in 2007 reaching 21.0% after the operationalization of the Tala hydropower project.⁶ This rate of growth is comparable with those of the fastest-growing economies in the world.

Hydropower has also eclipsed agriculture as the largest contributor to the economy, representing 22% of GDP in 2010.⁷ With only about 5% of available hydropower resources being exploited, the continued sustainable development of the hydropower sector as seen in Bhutan's 10th Five-Year Plan, will certainly bring continued financial benefits to the country. An additional 10,000 megawatts of hydropower capacity are slated for development, which upon completion

⁴ Ministry of Works and Human Settlement, Government of Bhutan. 2008. *Bhutan National Urbanization Strategy*. Thimphu.

⁵ National Statistics Bureau, Government of Bhutan, and World Bank. 2012. *Bhutan Poverty Analysis 2012*. Thimphu.

⁶ International Monetary Fund. 2013. World Economic Outlook Database. <http://www.imf.org/external/pubs/ft/weo/2014/01/weodata/index.aspx> (accessed 9 September 2014).

⁷ ADB. 2010. *Asian Development Outlook 2010: Macroeconomic Management Beyond the Crisis*. Manila.

will represent more than a sevenfold increase in existing power capacity, which is currently just below 1,500 megawatts.

While the hydropower sector provides the most important contribution to GDP, it employs less than 1% of Bhutan's workforce. About 60% of the population currently works in the agriculture and forestry sectors, but increased urbanization and a move away from traditional agriculture activities is placing pressure on the economy to absorb those looking to shift industries, as well as young graduates entering the workforce. The economic transition away from agriculture-based subsistence and increasing reliance on imports to meet growing consumer demand will require Bhutan to explore new local employment opportunities that enhance economic autonomy by meeting domestic needs. To achieve this objective, domestic industries have to develop alongside job seekers, who need the appropriate skills to meet changing market demands.

In 2010, Bhutan's balance of trade also shifted significantly, with large sums of capital flowing to neighboring India to meet accelerating consumer goods and fossil fuel consumption demands. In 2010, Bhutan had a negative balance of trade in the order of Nu9,760 million, increasing to Nu20,162 million when trade in electricity is excluded.⁸

⁸ Department of Revenue and Customs, Government of Bhutan. 2011. *Bhutan Trade Statistics, 2011*. Thimphu.



2 Environmental Law Background

2.1 ENVIRONMENTAL LAWS

Bhutan has elected to pursue a middle path of development, as outlined in the National Environment Strategy of 1998. In line with the philosophy of sustainable development, a traditional Bhutanese proverb sets the context for this strategy: “It is better to have milk and cheese many times, than beef just once.”⁹ The opening letter of this strategy, accordingly, states:

“ His Majesty King Jigme Singye Wangchuck has recognized that Bhutan must follow the middle path to development. This is development that recognizes the need to develop our economy, to progress technically, mechanically and scientifically while still maintaining our rich cultural heritage and our traditional values, as well as preserving our natural resource base. How do we meet social and economic needs of our people while still conserving the natural environment? This is the challenge of sustainable development for Bhutan (footnote 9).

This philosophy is reiterated in the Constitution:

“ [e]very Bhutanese is a trustee of the Kingdom’s natural resources for the benefit of present and future generations and it is the fundamental duty of every citizen to contribute to the protection of the natural environment, conservation, and rich biodiversity of Bhutan and prevention of all forms of ecological degradation including noise, visual, and physical pollution through the adoption and support of environment friendly practices.¹⁰

The Constitution also mandates that 60% of forest cover be maintained for perpetuity,¹¹ and that the government has the specific responsibility to preserve, conserve, and improve the environment; prevent pollution; secure ecologically balanced sustainable development; and enable a safe and healthy environment.¹²

⁹ National Environment Commission, Government of Bhutan. 1998. *The Middle Path: National Environment Strategy for Bhutan*. Thimphu.

¹⁰ Government of Bhutan. 2008. *Constitution of Bhutan Article 5(1)*. Thimphu.

¹¹ Government of Bhutan. 2008. *Constitution of Bhutan Article 5(3)*. Thimphu.

¹² Government of Bhutan. 2008. *Constitution of Bhutan Article 5(2)*. Thimphu.

The National Environment Protection Act of 2007 (NEPA) sets the overarching legal framework for environmental protection and management in Bhutan. It outlines the following:

- (i) principles of application to environmental protection;
- (ii) the Constitution, functions, and powers of authority under the National Environment Commission (NEC);
- (iii) protection of environmental quality by managing hazardous substances, environmental pollutants, and managing waste;
- (iv) protection of forests, biodiversity, and ecosystem integrity;
- (v) the rights to environmental information and citizen participation; and
- (vi) procedures for environmental inspections, verification, enforcement, and penalties.¹³

With these as guiding frameworks, a number of sector-specific acts, supported by regulations and guidance documents, have been developed. Section 4 provides a brief review of these, with the policies, laws, and regulations included in the accompanying CD.

2.2 INSTITUTIONAL FRAMEWORKS

The NEC was established under the NEPA as the highest decision-making body on all matters relating to the environment and its management.¹⁴ It is a cross-ministerial independent body, chaired by the Prime Minister, with four to five “highest-ranking officers representing relevant ministries” (generally the ministers), nominated by the Chair, and three “eminent persons” or representatives from civil society. The secretariat is responsible for the implementation of policies, regulations, and directives issued by the NEC and for administering the provisions of the NEPA.

The mandate of the NEC is as follows:¹⁵

- (i) Develop policies, plans, and programs:
 - (a) develop, review, and revise environmental policies, plans, and programs;
 - (b) formulate, review, and revise environment-related laws and acts, and monitor their enforcement;
 - (c) adopt, review, and revise environmental standards for the country; and
 - (d) develop and facilitate the implementation of the National Sustainable Development Strategy.
- (ii) Raise environmental awareness:
 - (a) promote environmental awareness among all levels of society, including dissemination of environmental policies, strategies, acts, rules, regulations, and standards through print, audio-visual, and other appropriate means; and
 - (b) receive representations on environmental matters from members of civil society.
- (iii) Mainstream the environment into planning processes:
 - (a) institutionalize the environmental impact assessment (EIA) process as an integral part of the development planning process through enforcement of the Environmental Assessment Act, 2000; and

¹³ Government of Bhutan. 2007. *National Environmental Protection Act, 2012*. Thimphu.

¹⁴ Government of Bhutan. 2007. *National Environment Protection Act*. Thimphu. p. 6.

¹⁵ NEC, Government of Bhutan. <http://www.nec.bt.org>

- (b) mainstream the environment into the country’s developmental policies, plans, and programs.
- (iv) Monitor compliance:
 - (a) monitor ambient air and water quality and land-use changes, and inform all sections of society of these through print, audio-visual, and other appropriate means.
- (v) Undertake research and collect data:
 - (a) promote and ensure an efficient system of gathering and sharing environmental information;
 - (b) publish state of environment reports for submission to Parliament once every 5 years, with findings disseminated to the general public; and
 - (c) promote and conduct environmental research.
- (vi) Coordinate and facilitate implementation of environmental policies:
 - (a) coordinate and facilitate the implementation of bilateral and multilateral environmental agreements, conventions, treaties, and declarations;
 - (b) coordinate and monitor cross-sector issues related to water, forestry, mineral resources, and waste management in the country, with the line ministries and agencies responsible for their implementation and enforcement; and
 - (c) participate in all environment-related regional, subregional, and international conferences and negotiations.

As noted, the NEC has the authority to designate any ministry, organization, agency, or committee as a competent authority to carry out its functions. The responsibilities of these authorities can range from the development of sector-specific regulations and guidelines (which must be approved by the NEC for formal adoption), issuance of environmental clearances, monitoring of compliance, imposition of penalties within a specified limit, decisions to halt economic activities in cases of noncompliance, and authority to raise concerns with the NEC in environmentally sensitive situations. Should these competent authorities be unable to resolve disputes or environmental cases, the NEC is to review and decide on these matters. In practice, a number of unresolved cases have been taken to the courts, including cases involving corruption charges.

On environmental disputes or noncompliance, the NEC can issue fines and/or suspend or revoke environmental clearances in part or whole, thereby halting project activities. If required, it can also call for the establishment of an environmental tribunal to hear specific environmental disputes. These tribunals are to be composed of three experts in environmental adjudication, including one person qualified to be appointed as a judge of the High Court or Supreme Court as chair, on the recommendation of the Chief Justice. The environmental tribunal is a “quasi-judicial authority with the power to hear, take evidence, investigate, issue summons, request information, and pass its decision on the issues heard before it.”¹⁶ Decisions taken by an environmental tribunal can be appealed to the High Court.¹⁷

¹⁶ NEC, Government of Bhutan. 2007. *National Environment Protection Act Bhutan*. Thimphu.

¹⁷ As of the date of this publication, no environmental tribunals are reported to have been established under the NEC.

A photograph of two ibex deer in a natural, grassy setting. One deer is on the left, facing right, and the other is on the right, facing left. They appear to be interacting or sniffing each other. The background is slightly blurred, showing more of the natural environment.

3 Judiciary

3.1 OVERVIEW OF THE JUDICIARY

The earliest recorded code in Bhutan was developed in 1651 under Zhabdrung Ngawang Namgyal, the country's then-leader.¹⁸ However, the modern legal system was not formally introduced under the monarchy until the early 1950s. The adoption of Thimzhung Chenmo (Supreme Laws) was initiated under the leadership of the Third King, Jigme Dorji Wangchuck (1952–1972), soon after he came to power. A draft was vetted with the newly formed National Assembly from 1953 to 1959, and then was formally adopted.

With the formation of the High Court in 1967, *thrimpon* (judges) were appointed in all districts, relieving lead district administrative officials of the responsibility to decide on local disputes (footnote 18). Then, in 2008, the new Constitution established the Supreme Court as the highest authority within the judiciary, leading to today's four-tiered court system. The Supreme Court is the highest in the hierarchy, followed by the High Court of Justice. Below these, each *dzongkhag* (district) and select *dungkhags* (subdistricts) have courts located in administrative centers.

There are no courts or tribunals of special jurisdiction in Bhutan. However, other courts and tribunals can be established by the King upon the recommendation of the National Judicial Commission, which was formed in 2003 by Royal Decree, and is composed of the Chief Justice as the chair, the most senior *drangpon* (justice) of the Supreme Court, the chair of the Legislative Committee, and the attorney general. Parliament may also establish impartial and independent administrative tribunals and alternative dispute resolution centers as required.

The Supreme Court exercises appeal, advisory, and extraterritorial jurisdiction. It also has final authority on the interpretation of the Constitution and presides over cases that are not covered, or only partially covered, under existing law. The court is presided over by the Chief Justice, who is nominated from the *drangpons* by the King for a 5-year term, or until the age of 65, whichever comes first. Under the Chief Justice, four *drangpons* are nominated by the King in consultation with the National Judicial Commission, for 10-year terms.

¹⁸ R. Whitecross. 2002. The Thrimzhung Chenmo and the Emergence of the Contemporary Bhutanese Legal System. In *The Zhabdrung's Legacy: State Transformation, Law and Social Values in Contemporary Bhutan*. Edinburgh: University of Edinburgh.

The High Court of Justice is made up of two benches, with a minimum of two judges per bench. Like the Supreme Court, the High Court exercises appellate and extraterritorial jurisdiction. It is presided over by the Chief Justice of the High Court.

Each of Bhutan's 20 *dzongkhags* has a *dzongkhag* court, presided over by a *dzongkhag drangpon*. In the majority of cases, these courts are made up of one bench, although some have division benches. The *dzongkhag* courts exercise original jurisdiction.

The *dungkhag* court is the first-level court in Bhutan, presided over by a *dungkhag drangpon*. There are currently 15 such courts in the country, exercising original jurisdiction in all cases in their judicial territory.

Decisions of lower courts can be appealed upward, and each level of the court system maintains its independence. The High Court and *dzongkhag* and *dungkhag drangpon* justices are nominated by the National Judicial Commission, and confirmed by the King.

3.2 JUDICIAL ACTION IN SUPPORT OF ENVIRONMENTAL PRESERVATION

Almost all violations and disputes related to environmental laws and regulations were reported to have been addressed directly by the NEC or competent authorities. In very few instances have environment-related cases been brought before the courts. However, given the rapid pace of development, with infrastructure expansion, construction, hydropower development, and enhanced extraction of natural resources, it is expected that the number of environment-related cases will increase in the future.

Limited access to information related to specific cases at the district and national levels impeded the effective evaluation of environmental cases and their outcomes, but it was reported through discussions that cases mainly dealt with illegal use of forest resources, noncompliance with mining and mineral regulations (e.g., lack of mine restoration), poaching, and wildlife trade. While the courts have heard few environment-related cases, officials recognized broader challenges related to a lack of implementation and enforcement of existing environmental laws, even before they reach the courts.

However, the lack of environmental cases before the courts does not mean that Bhutan's judiciary has not taken any action in support of environmental preservation. As noted during the presentations and discussions at the Second South Asia Judicial Roundtable on Environmental Justice, several capacity-building measures are being undertaken by the judiciary, including establishment of a research and training bureau, a judicial conference every 2 years, consultative meetings and coordination workshops with relevant agencies, and a law college where environmental law will be incorporated. Judges from Bhutan add that since the magistrates are Buddhists, they are thus charged with protecting life and the environment through their judgments.

3.3 CHALLENGES TO THE IMPLEMENTATION OF ENVIRONMENTAL LAW

Bhutan has developed comprehensive policies, laws, and regulations to support the management and sustainable use of its environment. It is also broadly recognized that the implementation of these are challenging, and in a number of cases, the intended outcomes are not achieved. The Royal Society for the Protection of Nature (RSPN) stated that “[p]ractical issues contribute to the widening gap between policy and practice.”¹⁹

Three draft studies by the RSPN evaluated the detailed impacts of hydropower development, farm road construction, and mining and quarrying activities on the environment. In particular, the studies point to the gaps between policies and implementation and significant impacts of poorly executed EIAs and unresolved regulatory noncompliance.²⁰ The combination of policy implementation gaps and broader economic development is causing Bhutan to encounter a number of environmental pressures, including land degradation and loss of forest cover, threats to biodiversity, degrading water quality and quantity, increasing waste issues, and air pollution.

As noted in another study by ADB, this is not a challenge unique to Bhutan:

Environmental laws and regulations need to be better and more efficiently implemented, enforced, and complied with. The compliance aspect of this process begins with the inspector collecting water samples, or the forest official apprehending illegal loggers (the upstream phase), and extends to the environmental regulator or public interest litigator starting legal action, and to judges adjudicating these cases (the downstream phase). The process of compliance and enforcement of environmental laws and regulations—in both its upstream and downstream phases—needs attention.²¹

Based on discussions with environment officers within the government, representatives from civil society organizations, and experts in the environmental field, the following key challenges in Bhutan’s implementation of environmental laws were outlined.

Bureaucracy and related implications. With numerous procedures and steps required to begin business operations (including those in addition to environmental clearances), it was reported that project developers are urged to bypass rules and regulations, or choose not to comply given the associated high transaction costs. Further, project developers recognize that the monitoring and verification capacity within the government is weak, and therefore risk bypassing regulations under the assumption that no remedial action will be taken by authorities.

Human and technical capacity constraints. With the rapid pace of development, the number of projects ready for environmental approval has accelerated, presenting challenges for government environment officers who are unable to effectively review, approve, and follow up on compliance, given limited resources. For example, the central office of the Ministry of Works

¹⁹ RSPN, Government of Bhutan. 2011. *Strategic Plan, 2011–2015*. Thimphu.

²⁰ Based on a review of forthcoming studies: RSPN, Government of Bhutan. *Impacts of Hydropower Development in Bhutan, Impacts of Mining and Quarrying on the Environment in Bhutan, and Impacts of Farm Roads on the Environment in Bhutan*. Thimphu.

²¹ ADB. 2010. *Asian Judges: Green Courts and Tribunals, and Environmental Justice*. Manila.

and Human Settlement has only one environment officer responsible for issuing all central agency environmental clearances, monitoring compliance, and following up on any issues identified. This lack of human resources inhibits the appropriate implementation of provisions under existing laws and regulations. Further, it was highlighted that the technical knowledge of officials remains insufficient to comprehensively assess the impacts of prospective projects on the environment.

Conflicts of interest. The current delegation of responsibility for issuing environmental clearances and monitoring compliance may present a conflict of interest. Given that line ministries and regional authorities are designated with the dual responsibility of managing environmental impacts of projects while also pursuing economic development goals, effective evaluation of potential harm or dangers to the environment may suffer. Further, district environmental officers sit one representative (often relatively junior staff) among colleagues of the general district administration, making it challenging to maintain autonomy and question decisions and proposals of more senior colleagues.

Ministry coordination. Poor coordination and collaboration between government agencies was noted as an important challenge in effectively developing and implementing policies and laws.

Lack of data. Poor environmental data present a challenge for setting baselines and monitoring progress when conducting EIAs, and more broadly implementing environmental policies and regulations.

Traditional hierarchies. Bhutan is a relatively small society, which has advantages, but can also present challenges with respect to ensuring an arm's-length approach between private project developers and government authorities. The RSPN states that "Bhutanese society is small and closely-knit wherein most of the people, especially at the bureaucracy and business levels, are known to the other and bound by traditional social obligations. Such relations at the level of the empowered and affluent often get in the way of official undertakings, making policy enforcement difficult."²² A number of cases tried in the courts related to mining and quarrying operations deal specifically with corruption between project developers and government officials in the issuance of required clearances.

Limited capacity of project developers. Many private project developers have little knowledge about the potential environmental implications of their desired activities. In submitting requests for environmental clearance, information from these developers is seldom of the required technical and professional level. Professional EIA practitioners are rarely used in undertaking evaluations for small to medium-scale projects. The relevant ministry, the NEC, and district environment officers are therefore required, to the best of their ability and capacity, to either reject proposals or guide project developers in completing their clearance request documents.

In summary, these challenges have significant implications on the effective implementation and enforcement of environmental policies and laws. Challenges relate not only to effectively monitoring the compliance of existing projects, but also to ensuring that projects receiving environmental clearance are truly environmentally sustainable through the conduct of a scientifically robust EIA process.

²² RSPN, Government of Bhutan. 2011. *Strategic Plan, 2011–2015*. Thimphu.



4 Review and Compendium of Environmental Policies and Laws

As noted earlier, the National Environment Strategy, 1998²³ and the NEPA set the overarching framework for environmental management and conservation in Bhutan. In addition, Bhutan's 5-year plans outline the development priorities and strategies for the country. The 11th Five-Year Plan, 2013–2018 notes that

Our country has been a victim of natural disasters, some of which are attributed to climate change. In the last five years, earthquake[s], cyclone[s], windstorm[s], floods, landslides, and fires have been a frequent occurrence. Ensuring a balance between our environmental aspirations and development needs are also increasingly challenging due to persistent human–wildlife conflict and the growing demand for natural resources.²⁴

The plan places specific importance on the conservation of the natural environment, improved disaster resilience, and the sustainable use of Bhutan's natural resources.

Based on these, a series of sector-specific strategies, policies, acts, and regulations have been drafted (Table 1). Copies of the key strategies, policies, and laws are included in the attached CD. The National Environment Strategy, 1998; NEPA; the Constitution of Bhutan; and the 11th Five-Year Plan, 2013–2018 are included in Appendix 1 on the CD.

4.1 ENVIRONMENTAL APPROVALS AND ASSESSMENTS

Environmental clearances and more in-depth EIAs have been used internationally as successful tools to protect the environment from unsustainable projects and potential harm and degradation. On the other hand, EIAs can directly act to the detriment of the environment if not undertaken properly or are not critically reviewed and assessed by technical experts. Project developers can also see them as an expensive, inconvenient distraction that slows their projects' progress. Further, from the perspective of the government, it often lacks the expertise and monetary resources

²³ The National Environment Strategy is currently being revised and updated by the NEC, with support from the United Nations Development Programme.

²⁴ Gross National Happiness Commission, Government of Bhutan. 2013. *11th Five-Year Plan*. Thimphu. p. 7.

Table 1 Overview of Environment-Related Policies, Acts, Regulations, and Guidelines in Bhutan

Area	Policies/Strategies	Acts	Regulations/Rules	Guidelines
Environment Assessment		Environment Assessment Act, 2000	Regulation on Environmental Clearance of Projects, 2002	Sector Environmental Assessment Guidelines: Forestry, Hydropower, Mines, Tourism, Highways and Roads, Transmission Lines, Urban Development, Industry
Waste Prevention and Management	National Strategy and Action Plan-Integrated Solid Waste Management	Waste Prevention and Management Act, 2009	Waste Prevention and Management Regulation, 2012	Not applicable
Water	Water Policy, 2003	Water Act of Bhutan, 2011	Water Regulation, 2012 (Draft)	Not applicable
Forest and Agriculture	National Forest Policy, 1974 (revised draft under development)	Forest and Nature Conservation Act, 1995	Forest and Nature Conservation Rules, 2006	Procedure for felling of trees in registered lands
	National Irrigation Policy, 2012	Pesticides Act, 2000	Forest Fire Rule, 2012	Guidelines on import of timber
		Seeds Act, 2000	Rules on Biological Corridor, 2006	Guidelines for surface collection of stones
Biodiversity	Biodiversity Action Plan, 2009	Biodiversity Act, 2003	Rules and regulations under development: Traditional Knowledge Plant Variety Protection	Not applicable
Mines and Minerals	Mineral Development Policy, 2013 (Draft)	Mines and Minerals Management Act, 1995	Mines and Minerals Management Regulation, 2002	See Environment Assessment Guidelines
Climate Change	National Strategy and Action Plan for Low Carbon Development, 2012			
Health and Safety	National Occupational Health and Safety Policy, 2012	Labour and Employment Act, 2007	General Rules and Regulations on Occupational Health and Safety (OHS) in Construction, Manufacturing, Mining and Service Industries, 2006	Not applicable

for carrying out baseline studies, effectively assessing impacts, and reviewing the quality of the assessments submitted. Some say that the EIA is often used as a means to an end rather than as a beneficial planning tool in itself.²⁵

Bhutan has a comprehensive approach to requiring EIAs and clearances for a wide range of economic activities related to tourism, urban development, hydropower, transmission lines, forestry, mines, industrial projects, and highways and roads. Full EIAs are required for hydropower projects, projects within protected areas or other areas of national significance, large-scale mines and quarries, and mega projects (e.g., high-tension transmission lines, education cities, urban development, industrial estates, and national highways). However, the RSPN notes that “EIA and clearance processes for projects have suffered at various stages including lack of public consultation, compliance, monitoring, and enforcement to the extent that the processes have become more of a rubber-stamping exercise.”²⁶ Further, EIAs are often not effectively carried out or implemented for related projects.

For a more holistic perspective, strategic environmental assessments (SEAs) serve to ensure that policies consider broader environmental and sustainability impacts in their formulation and development. Further, they can complement project-specific environmental reviews to promote environmentally sustainable proposals. While Bhutan introduced the SEA Regulation in 2002, to date, only two SEAs have been conducted: the first for the Punatsangchhu II Hydroelectric Project, and the second for the Dhamdhum Industrial Estate. The limited implementation of the regulation is attributed to the fact that the government is not only simultaneously developing many policies, but it also lacks human and financial resources to fully carry out SEAs.²⁷

Table 2 Overview of Environmental Clearance and Assessment Act and Regulations

Document	Type	Purpose	Lead Responsible Authority
Environment Assessment Act, 2000	Act	Establishes procedures for the assessment and reduction of potential effects of strategic plans, policies, and projects on the environment.	National Environment Commission
Regulation for Environmental Clearance of Projects	Regulation	Defines responsibilities and procedures for the implementation of the Environmental Assessment Act, 2000 concerning the issuance and enforcement of environmental clearances.	National Environment Commission
Strategic Environmental Assessment Regulation, 2002	Regulation	Defines responsibilities and procedures for the implementation of strategic environmental assessments.	National Environment Commission
Guidelines for Environmental Clearance	Guideline	Outlines the information for preparing the application for environmental clearance in key sectors.	Relevant competent authority, National Environment Commission

²⁵ C. Briffett. 1999. Environmental Impact Assessment in Southeast Asia: Fact or Fiction? *GeoJournal*. 49. pp. 333–338.

²⁶ RSPN, Government of Bhutan. 2011. *Strategic Plan, 2011–2015*. Thimphu.

²⁷ L. Brown et al. 2012. Towards Environmental Assessment of Policy in Bhutan. Paper presented at the 32nd Annual Meeting of the International Association for Impact Assessment. Porto, Portugal. 27 May–1 June 2012.

The Environmental Assessment Act, 2000 establishes procedures for the assessment of the potential effect of strategic plans, policies, programs, and projects on the environment; the determination of policies and measures to reduce potential adverse effects; and the promotion of environmental benefits.²⁸ The NEC is the lead agency responsible for adopting regulations under the act, deciding on the issuance of environmental clearances, monitoring and controlling compliance, highlighting violations, and reporting on enforcement. Competent authorities can also be given the responsibility for issuing environmental clearances, under appointment by the NEC.

The Regulation for Environmental Clearance of Projects, 2002 defines in more detail the responsibilities and procedures for the implementation of the Environmental Assessment Act, 2000, concerning the issuance and enforcement of environmental clearances for individual projects.²⁹ More specifically, it outlines the specific project activities for which competent authorities can issue environmental clearances directly and those that require the NEC itself to undertake evaluation and issuance of environmental clearance. Competent authorities include the ministries of Economic Affairs, Works and Human Settlement, Agriculture and Forests; and district environmental committees. The NEC must, however, issue clearances for larger-scale industrial activities (e.g., mining operations larger than 3 hectares); projects within protected areas; projects within 50 m of a public park, human dwellings, hospitals, schools, or sacred landscapes or sites; or other sensitive areas designated by the NEC secretariat. The regulation also outlines the procedures for undertaking an environmental assessment, requirements related to public consultation, evaluation procedures for new and existing projects, and requirements related to monitoring, handling of offenses, appeals processes, sanctions, and compensation in case of noncompliance.

Eight guidelines were further developed to support regulation in the following sectors: forestry, hydropower, mines, tourism, highways and roads, transmission lines, urban development, and industry. Each outlines the specific requirements for environmental clearance for the specified industry or undertaking. Any activity within these sectors, unless otherwise exempt, must be granted an environmental clearance by the relevant competent authority or the NEC prior to project approval.

Monitoring and enforcement are to take place on a regular basis, with warnings and fines (often ranging from Nu5,000 to Nu500,000) issued in case of noncompliance. The NEC or competent authorities can revoke environmental clearances where remedies are not suitably implemented by project developers.

The (i) Environmental Assessment Act, 2000; (ii) Regulation for Environmental Clearance of Projects, 2002; (iii) Application for Environmental Clearance: Guideline for Forestry Activities, 2004; (iv) Application for Environmental Clearance: Guideline for Hydropower, 2004; (v) Application for Environmental Clearance for the Preparation of Industrial Project Reports, 2004; (vi) Application for Environmental Clearance: Guideline for Mines, 2004; (vii) Application for Environmental Clearance: Guideline for Highways and Roads, 2004; (viii) Application for Environmental Clearance: Guideline for Tourism, 2004; (ix) Application for Environmental Clearance: Guideline for Transmission and

²⁸ Government of Bhutan. 2000. *Environmental Assessment Act, 2000*. Thimphu. p. 1.

²⁹ Government of Bhutan. 2000. *Regulation for Environmental Clearance of Projects*. Thimphu. p. 1.

Distribution Lines, 2004; and (x) Application for Environmental Clearance: Guideline for Urban Development, 2004 are included in Appendix 2 on the CD.

4.2 WASTE PREVENTION AND MANAGEMENT

Waste management is a growing challenge for Bhutan, as in most developing economies. With rising urbanization, a lack of municipal facilities, and inadequate infrastructure planning, waste threatens to have negative impacts on Bhutan’s water, air, and soil quality. The RSPN highlights that indiscriminate, open dumping of solid waste is creating unsightly surroundings, choked drains, and will result in polluted waterways. This will not only contaminate the natural environment, but also pose serious hazards to public health.³⁰

Key contributors to the challenge of solid waste management include³¹

- (i) change in the consumption pattern of urban residents,
- (ii) lack of public awareness and advocacy,
- (iii) lack of civic responsibility among the public,
- (iv) lack of coordination among institutions responsible for waste management,
- (v) lack of a strong legal framework and implementation mechanisms, and
- (vi) rural–urban migration contributing to a rise in urban populations.

Table 3 Overview of Waste Prevention and Management Strategy, Act, and Regulation

Document	Type	Purpose	Lead Responsible Authority
National Strategy and Action Plan, Integrated Solid Waste Management, 2007	Strategy	Provides guidance on how waste, which may have a negative impact on public health and the environment, can be removed regularly and affordably.	Ministry of Works and Human Settlement, National Environment Commission
Waste Prevention and Management Act, 2009	Act	Reduces generation of waste at source; promotes segregation, reuse, and recycling; disposes of waste in an environmentally sound manner; and ensures effective functioning and coordination among implementing agencies.	Ministry of Works and Human Settlement, city corporation, <i>dzongkhag</i> and <i>gewog</i> (village group) councils supported by their respective administrations
Waste Prevention and Management Regulation, 2012	Regulation	Establishes procedures to implement the Waste Prevention and Management Act, 2009.	Ministry of Works and Human Settlement, city corporation, <i>dzongkhag</i> and <i>gewog</i> councils supported by their respective administrations

To address solid waste management challenges, the National Strategy and Action Plan, Integrated Solid Waste Management was drafted in 2007 by the Ministry of Works and Human Settlement in collaboration with the NEC. This document recognizes the important challenges presented by increasing solid waste, particularly in urban centers. It discusses options for reducing, reusing, and recycling waste; appropriate collection and disposal; handling of hazardous waste; composting; introducing tariffs for waste removal; and monitoring and enforcement mechanisms. It also highlights the potential for public–private collaboration in the solid waste management sector.

³⁰ Global Environment Facility. <http://www.thegef.org/gef/>

³¹ RSPN, Government of Bhutan. Solid Waste Management. <http://www.rspnbhutan.org/component/content/article/47-emerging-issues/224-solid-waste-management.html>

To effectively implement the proposed actions in these areas, a community mobilization program, capacity-building program, and specific activities in each of the discussed areas are outlined. The NEC is in the process of updating this document, supported by a working group of representatives from relevant stakeholders and a more detailed baseline waste survey.³²

Following this strategy, the Waste Prevention and Management Act, 2009 was developed as the key legislative framework in this area, supported by the Waste Prevention and Management Regulation, 2012. The lead agencies responsible for the implementation of these are the Ministry of Works and Human Settlement, the city Corporation, and *dzongkhag* and *gewog* (village group) councils supported by their respective administrations. These lead implementing agencies must further coordinate waste management with collaborating agencies, which include the ministries of Economic Affairs, Health, Education, Agriculture and Forests, Finance, and Information and Communications; civil society organizations; the Drug Regulatory Authority; *Dratshang Lhentshog* (the Commission for the Monastic Affairs); Office of the Armed Forces; and Royal Bhutan Police.

The purpose of the act is to protect the environment by

- (i) reducing the generation of waste at the source;
- (ii) promoting the segregation, reuse, and recycling of waste;
- (iii) disposing of waste in an environmentally sound manner; and
- (iv) establishing effective functioning and coordination among implementing agencies.³³

The regulation was developed to support the implementation of the act, stipulating specific procedures for the management of medical, municipal, industrial, and electronic waste, as well as waste within government-reserved forests, protected areas, and *dzongkhags*.

The National Strategy and Action Plan, Integrated Solid Waste Management, 2007; Waste Prevention and Management Act, 2009; and Waste Prevention and Management Regulation, 2012 are included in Appendix 3 on the CD.

4.3 WATER

Bhutan is endowed with vast water resources, with four major river basins flowing from north to south into neighboring India (i.e., Amochhu, Drangmechhu, Punatshangchhu, and Wangchhu). Despite the abundance of water resources and the benefits that they have brought to the country, a number of important challenges threaten to impact the long-term sustainability of this resource and Bhutan's economy as a whole. These challenges include the following:

- (i) **Climate change.** This poses an important risk to water resources for two important reasons. First, with all of Bhutan's waterways fed by glaciers, glacial retreat may threaten the long-term sustainability of water flows. Further, glacial lake outburst floods³⁴ also present dangers to downstream inhabitants and infrastructure, with some 2,674 glacier-fed lakes in the country.

³² NEC, Government of Bhutan. <http://www.nec.gov.bt>

³³ NEC, Government of Bhutan. 2009. *Waste Prevention and Management Act 2009*. Thimphu.

³⁴ These are a phenomenon constituting a sudden discharge of a huge volume of water from glacial lakes created by a moraine. A moraine is material left behind by a moving glacier, such as a mass of rocks and sediment deposited typically as ridges at its edges or extremity.

- (ii) **Flash floods.** Especially in the eastern and southern regions of Bhutan, these occur due to the steep terrain and fragile geology. Flash floods have become more frequent and have intensified in the last decade due to the increasing intensity of rainfall. Landslides are also a recurring problem, and are closely linked with floods.
- (iii) **Water pollution.** Water pollution is increasingly a problem as populations urbanize and waste is more challenging to manage. A 2013 study of upstream and downstream water from Thimphu found deteriorated water quality in the study area.³⁵
- (iv) **Competition for resources.** This is growing among different sectors, as the economy develops and water demand increases within households and the agriculture and industry sectors. The country also faces localized water shortages due to uneven distribution of water resources over the landscape.
- (v) **Seasonality of precipitation and water flows.** These lead to localized shortages and a drop in hydropower generation, as river flows slow in winter months. Bhutan, in fact, imports electricity from neighboring India during this time.
- (vi) **Environmental impacts of hydropower development.** Given the pace of development, such impacts may present important long-term threats on rivers and ecosystems. A draft RSPN study emphasizes a number of challenges, including that all the major river basins and the majority of the river systems in the country are either built or planned for hydropower developments, environmental assessments are inadequately undertaken, compliance and adherence to the environmental standards lack quality and commitment, and existing environmental laws are inadequately implemented.³⁶ With the scale of hydropower development in the country, these issues threaten to have a major impact on Bhutan’s waterways and surrounding ecosystems.

Table 4 Overview of Bhutan’s Water Policy and Act

Document	Type	Purpose	Lead Responsible Authority
Water Policy, 2003	Policy	Ensures that water is available in abundance to pursue socioeconomic development in Bhutan.	National Environment Commission
Water Act, 2011	Act	Ensures that water resources are protected, conserved, and/or managed in an economically efficient, socially equitable, and environmentally sustainable manner.	National Environment Commission

The Water Policy was developed in 2003 with the vision that

Water will continue to be available in abundance to pursue socio-economic development in Bhutan. Present and future generations of Bhutanese people will have assured access to adequate, safe, and affordable water to maintain and enhance the quality of their lives.³⁷

³⁵ N. Giri and O. P. Singh. 2013. Urban Growth and Water Quality in Thimphu, Bhutan. *Journal of Urban and Environmental Engineering*. 7 (1).

³⁶ RSPN, Government of Bhutan. 2013. Impacts of Hydropower on the Environment in Bhutan. Thimphu. Draft.

³⁷ Government of Bhutan. 2003. *Bhutan Water Policy, 2003*. Thimphu.

It then discusses the priorities of use among various water users and proposes principles of water resources development and management along with the required institutional frameworks to enable sustainable water resources development and management. The NEC has the responsibility of ensuring effective coordination of water resources management at the national level.

Subsequently, the Water Act of Bhutan, 2011 works to “ensure that the water resources are protected, conserved, and/or managed in an economically efficient, socially equitable, and environmentally sustainable manner, and to establish suitable institutions.”³⁸ Significantly, the act enshrines the internationally accepted concept of integrated water resources management, and prioritizes management of water for drinking and sanitation, then for agriculture and hydro energy. In the context of energy, it sets standards for maintaining minimum environmental flow requirements. The NEC is responsible for exercising powers and delegating the discharge of functions conferred under the act to relevant competent authorities, including the ministries of Works and Human Settlement, Health, Agriculture and Forests, and Economic Affairs.

A draft water regulation was developed in 2012, but this has yet to be published. Many of the functions and activities outlined under the act have, therefore, yet to be implemented in practice.

The Water Policy, 2003 and Bhutan Water Act, 2011 are included in Appendix 4 of the CD.

4.4 FORESTRY AND AGRICULTURE

Bhutan is known for its vast forest resources. They offer watershed protection; provide timber and nontimber products, food, and medicines; and are an important driver for tourism. In addition, forests prevent soil erosion, help maintain the water cycle, serve as an important carbon sink, and are home to diverse flora and fauna.

While Bhutan’s unique terrain and history of forest conservation has protected much of the country’s forests, a number of challenges remain, as follows:³⁹

- (i) **Fuelwood.** Fuelwood is estimated to constitute about 90% of energy use in the residential sector, placing pressure on forest resources near settlements.⁴⁰
- (ii) **Timber demand for construction.** As this has increased considerably in urban centers and near settlements, overexploitation of forests has led to degradation in some areas. At the same time, regulations outlined below have helped carefully manage the extraction of domestic timber for construction purposes by promoting alternatives and meeting excess demand through imports.
- (iii) **Demand for conversion.** The demand for conversion of forestland in urban and peri-urban areas is growing, as urbanization accelerates and the rate of housing construction increases.

³⁸ Government of Bhutan. 2011. *The Water Act of Bhutan, 2011*. Thimphu.

³⁹ SAARC Forestry Centre. 2012. *SAARC Forestry Today*. Thimphu.

⁴⁰ Department of Energy, Ministry of Economic Affairs, Government of Bhutan. 2010. *Integrated Energy Management Master Plan for Bhutan*. Thimphu.

- (iv) **Forest fires.** These also contribute to significant loss of forest resources. According to the latest statistics published by the Department of Forests and Park Services, 39 incidents of forest fires were reported in 2010, covering an area of 10,433.151 hectares.⁴¹

Despite the large share of the population working in the agriculture and livestock sector, the low share of GDP is due to the fact that subsistence agriculture dominates, there is a lack of sufficient irrigation facilities, and there is limited use of mechanization. These factors have led to low agricultural productivity. While traditional agriculture practices have resulted in comparatively light impacts on the environment, there are challenges that may become increasingly important as the sector evolves. For instance, in several parts of the country, the number of livestock exceeds the natural carrying capacity of the land. This can lead to species loss, reduction of productivity, and increased erosion. Farming is also undertaken in steep geographic terrain, with some 31% of agriculture land located on slopes of more than 50 degrees, making soil erosion an important challenge. Finally, wildlife presents a challenge to farmers, with 126 kilograms of crops per household lost annually from pests and wild animals. This human-wildlife conflict results in risks to wildlife surrounding agricultural lands and to the livelihood of farmers.

Table 5 Overview of Forestry and Agriculture Policies, Act, and Regulations

Document	Type	Purpose	Lead Responsible Authority
Forest and Nature Conservation Act, 1995	Act	Provides for the protection and sustainable use of forests, wildlife, and related natural resources of Bhutan for the benefit of present and future generations.	Ministry of Agriculture and Forests
Forest and Nature Conservation Rules, 2006	Rules	Provides detailed rules to guide the implementation of the Forest and Nature Conservation Act.	Ministry of Agriculture and Forests
National Forest Policy, 2010	Policy	Sets the framework for the scientific management of the country's forests, and lays out approaches for forest conservation, afforestation, resource survey, forest utilization, wildlife management, recreation, forest administration and training, investment and government revenue, forest research, and publicity.	Ministry of Agriculture and Forests
National Irrigation Policy, 2012	Policy	Provides policy direction in the irrigation subsector, including direction on measures needed to increase irrigated area, improve irrigation water management, and optimize use of national water resources for crop production.	Ministry of Agriculture and Forests
Seeds Act of Bhutan, 2000	Act	Regulates the import and export of agriculture seeds to prevent introduction of plants and disease and to promote the seed industry.	Ministry of Agriculture and Forests
Pesticides Act of Bhutan, 2000	Act	Regulates the safe use and handling of pesticides to prevent public health and environmental hazards.	Ministry of Agriculture and Forests
Livestock Act of Bhutan, 2000	Act	Regulates livestock breeding, health, and production aimed at enhancing their productivity and preventing diseases.	Ministry of Agriculture and Forests

⁴¹ <http://www.dofps.gov.bt/node/112>

Many policies and laws more broadly relate to forestry and agriculture, not all of which touch specifically on environmental issues. The Compendium of Renewable Natural Resource Sector Policy and Legislation Framework developed by the Ministry of Agriculture and Forests in 2010 provides a more general overview of policies and laws in the forestry, livestock, and agriculture sectors. The key overarching environmental policies and laws within the forestry and agriculture sectors are highlighted below.

With the Bhutan Forest Act of 1969, the country nationalized its forests. In 1974, the first National Forest Policy was drafted, which set the goal of maintaining 60% of the land under forest cover in perpetuity. This document set the framework for the scientific management of the country's forests, and laid out approaches for forest conservation, afforestation, resource survey, forest utilization, wildlife management, recreation, forest administration and training, investment and government revenue, forest research, and publicity. A draft update to this strategy was completed in 2010.

The Forest and Nature Conservation Act, 1995,⁴² and the Forest and Nature Conservation Rules, 2006 (with amendments made in 2008) later provided the main legal frameworks for forest management and conservation in the country.

The Forest and Nature Conservation Act replaced the Bhutan Forest Act, 1969 and addresses issues related to forest management; government-reserved forests; social and community forestry; transport and trade of forest produce; the establishment of protected areas; the conservation of wildlife, soil, and water; and enforcement and penalties related to noncompliance. Significantly, it recognizes traditional and cultural rights of local people to forest use, thereby maintaining their access to forest resources, and provides for private forestry in privately registered lands and community forestry on government forestland.⁴³ The Department of Forestry within the Ministry of Agriculture and Forests is responsible for implementing the act. The Forest and Nature Conservation Rules set out the detailed procedures to support the implementation of the act.

Additional regulations related to forestry and conservation include the Forest Fire Rules, and Rules on Biological Corridors, 2006; the Bhutan National Human–Wildlife Conflict Management Strategy, 2008; and the National Strategy for Community Forests: The Way Ahead, 2009–2019. These provide detailed forest management and conservation practices. The Ministry of Agriculture and Forests is the key competent authority responsible for overseeing the implementation of acts and rules related to forest conservation and management.

In addition to the above-mentioned policies and laws that touch on the agriculture sector, the National Irrigation Policy, 2012; Seeds Act of Bhutan, 2000; Livestock Act of Bhutan, 2000; and the Pesticides Act of Bhutan, 2000 provide important guidance to the sustainable management of the agriculture sector. The implementation of these acts also falls under the responsibility of the Ministry of Agriculture and Forests.

⁴² This law is currently undergoing revision, with support from the Food and Agriculture Organization of the United Nations.

⁴³ SAARC Forestry Centre. 2013. *SAARC Forestry Today*. Thimphu.

The Forest and Nature Conservation Act of Bhutan, 1995; Forest and Conservation Rules, 2006; National Irrigation Policy, 2012; National Forest Policy, 2010; Seeds Act of Bhutan, 2000; Pesticides Act of Bhutan, 2000; and Livestock Act of Bhutan, 2000 are included in Appendix 5 on the CD.

4.5 BIODIVERSITY

As previously mentioned, Bhutan's ecosystem is among the top 10 in the world and is recognized as a biodiversity hot spot.⁴⁴ More specifically, it is home to 5,603 flowering plant species, including 579 wild orchids, 46 rhododendrons, and over 300 medicinal plants; close to 200 species of mammals; 800–900 species of butterfly; 50 freshwater fish species;⁴⁵ and 23 species of reptiles and amphibians.

The country is rich in bird and crop diversity, with 678 bird species recorded, 78% of which are resident and breeding, with 7% migratory and 8% winter visitors. There are about 80 species of crops known to occur in the country, including cereals (rice, maize, barley, millet, wheat, and buckwheat); fruit (apple, orange, and pear); vegetables (potatoes, beans, and cabbage); and spices (chili, cardamom, garlic, and ginger).⁴⁶

Challenges faced regarding biodiversity include the following:

- (i) **Animals and plants.** Bhutan is home to a number of endangered mammal and bird species, including 1 critically endangered mammal species, 11 endangered species, and 15 vulnerable species.⁴⁷ It is also home to 1 critically endangered bird species (i.e., the white-bellied heron), 1 endangered bird species, and 13 vulnerable species. Further, the poaching of Bengal tigers, bears, leopards, musk deer, wild boar, porcupine, python, and pheasants present important challenges to the species' well-being and survival. Medicinal plants and other non-wood forest product species, such as ferns, bamboo, and cane, which used to be collected in abundance, are also becoming increasingly rare.
- (ii) **Agriculture.** As noted previously, human-wildlife conflict in agriculture areas presents a risk to wildlife that destroy agriculture crops and livestock. Further, degradation of forestlands surrounding settlements can have a negative impact on biodiversity.
- (iii) **Wetlands.** Finally, the conversion of wetlands to meet infrastructure and agricultural demands poses threats to habitats and the survival of associated species. In addition, the quality of wetlands is vulnerable to pollution from chemical fertilizer runoffs and other effluents.⁴⁸

⁴⁴ NEC, Government of Bhutan. 2011. *Second National Communication to the UNFCCC*. Thimphu.

⁴⁵ The overall fish fauna of the country has not yet been properly assessed.

⁴⁶ RSPN, Government of Bhutan. Biodiversity. <http://www.rspnbhutan.org/about-bhutan/biodiversity.html>

⁴⁷ According to the International Union for the Conservation of Nature, a taxon (or species) is critically endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, it is endangered when it is facing a very high risk of extinction in the wild in the near future, and it is vulnerable when it is facing a high risk of extinction in the wild in the medium-term future. International Union for the Conservation of Nature. IUCN Red List. <http://www.iucnredlist.org/>

⁴⁸ RSPN, Government of Bhutan. 2011. *Strategic Plan, 2011–2015*. Thimphu.

Table 6 Overview of Biodiversity Strategy and Act

Document	Type	Purpose	Lead Responsible Authority
National Biodiversity Strategy and Action Plan	Strategy	Proposes a series of biodiversity conservation objectives and associated actions.	Ministry of Agriculture and Forests
Biodiversity Act, 2003	Act	Ensures national sovereignty of the government over genetic resources; ensures conservation and sustainable use of biochemical and genetic resources; promotes equitable sharing of benefits derived from genetic resources; promotes technology transfer and capacity building; recognizes and protects traditional knowledge, innovation, and practices of local communities associated with biodiversity; regulates the collection of genetic resources and prevents illegal access; recognizes and protects farmers' and breeders' rights; and regulates plant variety and property rights and use.	Ministry of Agriculture and Forests

In an effort to ensure the continued preservation of Bhutan's biodiversity wealth, biodiversity action plans have been developed, with the third edition published in 2009. This document outlines the status of biodiversity in Bhutan, current biodiversity conservation efforts, trends affecting biodiversity, and proposals for a series of biodiversity conservation objectives and associated actions, which include⁴⁹

- (i) protecting natural ecosystems from degradation and fragmentation as a consequence of environmentally intrusive human activities and their impacts;
- (ii) protecting species and genetic diversity in general, but more specifically those species and their genetic variants that have immense ecological, economic, scientific, and cultural value;
- (iii) integrating poverty reduction and enhancement of local livelihoods in biodiversity conservation programs in a mutually reinforcing manner;
- (iv) creating public appreciation and support for biodiversity conservation through nature-based recreation and education; and
- (v) using biodiversity resources as development capital for national economic growth within the limits of environmental sustainability.

The Biodiversity Act, 2003 was developed as key legislation to support the implementation of the action plans. The act covers biodiversity access and benefits, plant variety protection, protection of traditional knowledge, and offences and penalties. The law touches on environmental, cultural, and scientific considerations, property rights, economic implications, and trade and investment considerations.

Rules and regulations under the act are being developed and have yet to be finalized at the time of publication.

The National Biodiversity Strategy and Action Plan, 2009 and Biodiversity Act, 2003 are included in Appendix 6 on the CD.

⁴⁹ Ministry of Agriculture and Forests, Government of Bhutan. 2009. *Biodiversity Action Plan, 2009*. Thimphu.

4.6 MINING AND MINERALS

Bhutan's mining and minerals industry remains relatively small, given a cautious approach to the sector's development to manage its potential negative environmental and social impacts. Total mineral production, which mainly consisted of limestone, coal, graphite, gypsum, slate, and dolomite, was 4.8 million metric tons in 2011.⁵⁰ Mines are operated using open-cast mining techniques, with 55 registered firms in the sector operating over about 15,000 km². Further development of the mining sector is highlighted as a key objective of the 11th Five-Year Plan to support economic development and to enhance exports. At the same time, the plan notes that management of environmental and social impacts, as well as intergenerational equity issues, will be taken into consideration.

A Bhutan National Council study on the socioeconomic and environmental assessment of mining and activities (2013) pointed to a number of important environmental challenges in the sector: deterioration in air quality, increases in water turbidity and pollution, and negative impacts on local vegetation surrounding the mines. In particular, the study emphasized poor implementation of existing policies and laws to address these issues (e.g., lack of spraying to suppress dust, no restoration of vegetation, and dumping of soil). Accordingly, the National Council, which forms part of Parliament, called upon the government to undertake seven key actions prior to the issuance of further mining licenses, as follows:⁵¹

- (i) Prioritize conducting detailed geological mapping of the country before embarking on further mining and quarrying activities;
- (ii) Delineate clear responsibilities among various agencies involved in leasing, monitoring, and supervision of mines and quarries, and hold them accountable for any lapses;
- (iii) Revisit the existing policies, legislations, guidelines, and standards for licensing, operation, and management to ensure that the mines and quarries are operated according to the laws;
- (iv) Carry out cost-benefit analysis and socioeconomic and EIAs of mining and quarrying;
- (v) Review the effectiveness of environmental restoration measures currently under practice;
- (vi) Ensure that all mining and quarrying companies properly file the annual tax return, and ensure proper coordination between the Department of Revenue and Customs and the Ministry of Economic Affairs; and
- (vii) Include in the next annual report that the NEC secretariat is mandated to produce all the above and other measures necessary to carry out mining and quarrying activities in line with the middle path strategy and intergenerational responsibility as enshrined in the NEPA, to inform the NEC and the public according to the law for further consideration.

A draft RSPN study on the environmental impacts of mining on the environment in Bhutan also emphasized similar environmental challenges within the sector, concluding that “[e]xisting mines and quarries are not regulated and managed to optimize equitable public socio-economic benefits and lack environmental soundness.”⁵²

⁵⁰ Gross National Happiness Commission, Government of Bhutan. 2013. *11th Five-Year Plan*. Thimphu.

⁵¹ National Council of Bhutan. 2013. *Social-Economic and Environmental Assessment of Mining and Activities in Bhutan*. Thimphu.

⁵² RSPN, Government of Bhutan. 2013. *Impact of Mining Activities on the Environment in Bhutan*. Thimphu. Draft.

Table 7 Overview of Mines and Minerals Act and Regulation

Document	Type	Purpose	Lead Responsible Authority
Mines and Minerals Management Act, 1995	Act	Ensures the exploitation of mineral resources in a manner compatible with the social and economic policies of the Government of Bhutan and within the framework of sustainable development, protection of the environment, and preservation of religious and cultural heritage.	Ministry of Economic Affairs, Department of Geology and Mines
Mines and Minerals Management Regulation, 2002	Regulation	Sets out specific procedures to enable the implementation of the act, including setting boundaries, registering mineral titles, exploration, issuing mining leases, royalties, mineral and surface rent, mining operations establishment and management, keeping of records and reports, monitoring offenses and sanctions, and occupational health and safety and environmental regulation.	Ministry of Economic Affairs, Department of Geology and Mines

Geological exploitation is governed by the Mines and Minerals Management Act, 1995, which is supported by the Mines and Minerals Management Regulation, 2002. The act recognizes that

[s]ince minerals are an important component of the natural resource endowment of the Kingdom of Bhutan, the exploitation of this resource has to be carried out in a manner compatible with the social and economic policies of the Royal Government of Bhutan and within the framework of sustainable development, protection of the environment, and preservation of the Kingdom’s precious religious and cultural heritage.⁵³

The act stipulates the roles and responsibilities of related authorities, management of exploration and mining activities, appropriate conduct of mining operations, levies to be collected from mining operations, restoration requirements for mines and quarries, and offenses and penalties resulting from noncompliance. Implementation of the act and the related regulation is under the responsibility of the Department of Geology and Mines, Ministry of Economic Affairs, with the environmental clearance for large-scale projects (i.e., above 3 hectares) to be granted and monitored directly by the NEC.

In a further effort to ensure mine and quarry restoration, an environmental restoration bond was established in 2008 as a security deposit for restoration activities required to be carried out at the end of the mining and quarrying activity. Payments are collected on an annual basis from mine and quarry owners based on total target production for the year.

The 2010 Economic Development Policy also recognizes the potential for expanded discovery of minerals in Bhutan in support of economic development, and requires that a mineral development policy be established in that same year. While a policy has been drafted, it has yet to be endorsed by the government.

The Mines and Minerals Management Act, 1995 and the Mines and Minerals Management Regulations, 2002 are included in Appendix 7 on the CD.

⁵³ NEC, Government of Bhutan. 1995. *Mines and Minerals Management Act of the Kingdom of Bhutan*. Thimphu.

4.7 CLIMATE CHANGE

Bhutan is fueled by clean hydropower electricity, is home to a relatively small population, and has a nascent industrial sector. As a result, GHG emissions are relatively low. Emissions in 2000 were 1,559.56 gigagrams carbon dioxide equivalent,⁵⁴ and taking into account the carbon sequestration effect of its vast forests, Bhutan actually has negative carbon dioxide emissions, estimated at -4,750.04 gigagrams carbon dioxide equivalent in 2000. While the constitutional requirement to maintain Bhutan's forest cover will help preserve Bhutan's status as a carbon sink, emissions have been growing in the energy (in particular transport) and industry sectors. The management of this growth in emissions, while still small, will be significant over the longer term.

While Bhutan is not a large contributor to global climate change, it does suffer the consequences of this phenomenon, as shown below:

- (i) **Natural disasters.** Bhutan's glaciers are reported to be receding at a rate of 30–60 m per decade. The melting ice from these receding glaciers is increasing the volume of water in glacial lakes, and the melting of ice-cored dams is destabilizing them. This increases the hazard of glacial lake outburst floods, posing an important risk to development and livelihoods.⁵⁵
- (ii) **Water resources.** With the country's rivers fed by the Himalayan glaciers, their retreat and other changes in hydrological cycles poses a threat to river flows, potentially impacting hydropower production and water resources used for agriculture and the daily water needs of the population.
- (iii) **Agriculture.** Fluctuating rainfall patterns risk severe drought and flooding. Changing temperatures can also impact the agriculture sector.
- (iv) **Forests and biodiversity.** Increasing temperatures may cause species and ecosystems to shift, or to become extinct where migration is not possible.
- (v) **Human health.** An increase in the geographic range and incidence of vector-borne diseases, particularly malaria and dengue, and an increase in the incidence of waterborne diseases, can result in negative impacts on human health.⁵⁶

Table 8 Overview of Climate Change Strategy

Document	Type	Purpose	Lead Responsible Authority
National Strategy and Action Plan for Low Carbon Development	Strategy	Outlines climate mitigation options to manage emissions from energy-intensive industries, crop production, livestock raising, municipal solid waste, road transport, and the residential sector.	National Environment Commission

⁵⁴ NEC, Government of Bhutan. 2011. *Second National Communication to the United Nations Framework Convention on Climate Change*. Thimphu.

⁵⁵ United Nations Development Programme. Reducing Climate Change Risks and Vulnerability from Glacial Lake Outburst Floods in Bhutan. http://www.bt.undp.org/content/bhutan/en/home/ourwork/crisispreventionandrecovery/successstories/Sample_Success_Story_1/

⁵⁶ World Health Organization. Climate Change and Human Health: Climate Change Adaptation to Protect Human Health. <http://www.who.int/globalchange/projects/adaptation/en/index2.html>

While Bhutan has no specific policy, act, or regulation related to climate change, at the 15th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) in 2009, the government committed to remaining carbon-neutral into the future. In support of this commitment, the National Strategy and Action Plan for Low Carbon Development was drafted in 2012, outlining a number of specific measures to support low carbon development in the country. This document focuses particularly on climate mitigation options to manage emissions from energy-intensive industries, crop production, livestock raising, municipal solid waste, road transport, and the residential sector.

As a signatory to the UNFCCC, Bhutan is required to submit a national communication, which provides an inventory of GHG emissions in the country and actions that will be taken to implement the convention. For Bhutan, the Second National Communication to the UNFCCC, submitted in 2011, includes information related to national circumstances, an inventory of GHG emissions, climate vulnerabilities, technology needs, education, training, and public awareness. The document also outlines various climate change mitigation and adaptation measures to help curb potential future impacts of climate change. The NEC is responsible for developing the national communication, with data inputs from various ministries.

To date, GHG emissions have been based on estimates from data provided by various government departments (e.g., the National Statistics Bureau and the Department of Revenue and Custom of the Ministry of Finance), with efforts being made to establish a more systematic and accurate GHG data collection process. Finally, as noted earlier, the 11th Five-Year Plan emphasizes the importance of managing the current and future impacts of climate change, with a focus on increasing disaster resilience and sustainable use of Bhutan's natural resources.

Actions are currently underway within the NEC to operationalize elements of these plans. The NEC is also advancing a number of activities to address climate change adaptation, including the management of glacial lake outburst floods, with support from development partners.

The National Strategy and Action Plan for Low Carbon Development, 2012 and Second National Communication to the UNFCCC, 2011 are included in Appendix 8 on the CD.

4.8 HEALTH AND SAFETY

Environmental degradation, the negative consequences of unsustainable development, and impacts of human development do not only present threats to mammals, ecosystems, wildlife, and birds, but can also have drastic impacts on human health. In particular, the impacts of air and water pollution and unmanaged waste can be significant. The World Health Organization estimates that about one-quarter of diseases facing humankind today occur due to prolonged exposure to environmental pollution. Managing environment-related health problems through prevention can be much more effective than trying to treat health problems once they arise.

The acts and regulations outlined in the sections above aim to ensure the preservation of a clean and healthy environment for Bhutan's population. As previously noted, the increase in waste in the country presents a challenge not only to the environment, but also to human health. The health and safety of Bhutan's workforce is also dependent on, among other things, a clean environment free of health hazards that may be caused by environmental pollutants.

While a number of acts and regulations have been developed to specifically protect workers from environmental and health hazards, the current situation of worker health and safety is difficult to assess given the lack of data. A 2012 World Health Organization and Bhutan Department of Labour report notes that there are no systems or procedures of identification and assessment of environmental factors that affect workers' health, such as the state of workplace hygiene and sanitation, use of personal protective equipment, and control system.⁵⁷ The occupational health surveillance systems that focus on accident and disease prevention, including psychosocial factors among workers, is also absent (footnote 57).

Table 9 Overview of Health and Safety Policy, Act, and Regulation

Document	Type	Purpose	Lead Responsible Authority
National Occupational Health and Safety Policy, 2012	Policy	Facilitates the provision of effective occupational health and safety institutions, legislation, and implementation programs, recognizing that occupational safety, health, and welfare are essential elements for happiness at work, at home, in society, and toward the alleviation of poverty.	Ministry of Labour and Human Resources
Labour and Employment Act, 2007	Act	Governs the regulation of employment and working conditions, including occupational health and safety.	Ministry of Labour and Human Resources
Rules and Regulations on Occupational Health and Safety in Construction, Manufacturing, Mining, and Service Industries, 2006	Regulation	Sets out specific regulations that aim to assure safe and healthy working conditions for working men and women as well as persons present at workplaces from work-related risks to their health, safety, and well-being. This includes the management of occupational health systems; inspections, notices, and reports; self-inspections and reporting procedures; rights and responsibilities; requirements related to personal protective equipment; compensation; and offences and penalties.	Ministry of Labour and Human Resources

The Ministry of Labour and Human Resources developed the National Occupational Health and Safety Policy, 2012, with the vision to ensuring “a nation with safe, healthy, and happy working environments free from exposure to physical, chemical, and psychological hazards for the workforce.”⁵⁸

The Labour and Employment Act, 2007 includes provisions that are supported by the Rules on Occupational Health and Safety, 2006. While not directly related to environmental issues, the act and related regulations outline requirements for ensuring a safe and healthy working environment for employees, including an environment free of potential hazardous wastes and other similar pollutants.

The National Occupational Health and Safety Policy, 2012; Labour and Employment Act, 2007; and Rules on Occupational Health and Safety, 2006 are included in Appendix 9 on the CD.

⁵⁷ World Health Organization and Department of Labour, Government of Bhutan. 2012. *Profile on the Occupational Health and Safety of Bhutan*. Thimphu.

⁵⁸ Ministry of Labour and Human Resources, Government of Bhutan. 2012. *National Occupational Health and Safety Policy, 2012*. Thimphu. p. 4.



Review and Compendium of Environmental Policies and Laws in Bhutan *Input to the Asian Judges Network on Environment (AJNE)*

This *Review and Compendium of Environmental Policies and Laws in Bhutan* aims to facilitate access to information for all stakeholders engaged in the environment sector, in particular for the Judiciary and administrative officials responsible for overseeing the protection of the country's natural resources. Moreover, it seeks to empower citizens to take action in support of environmental protection. It provides background information on Bhutan, as well as an introduction and overview of key environment, natural resources, and climate change, laws, rules, policies, and regulations of the country. This publication is one of the key proposals of the Royal Court of Bhutan as a follow-up action to the Second South Asia Judicial Roundtable on Environmental Justice held in Thimphu, Bhutan on 30–31 August 2013.

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