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# INTEGRATING SUSTAINABLE CONSUMPTION AND PRODUCTION (SCP) AND CLIMATE CHANGE POLICY

## A Strategic Contribution to Strengthening Bhutan's Nationally Determined Contributions (NDC 3.0) and Long Term - Low Emission Development Strategy (LT-LEDS)

White Paper

**Acknowledgement**

This White Paper on *Integrating Sustainable Consumption and Production (SCP) and Climate Change Policy: A Strategic Contribution to Strengthening Bhutan's Nationally Determined Contributions (NDC 3.0) and Long Term - Low Emission Development Strategy (LT-LEDS)* was prepared on behalf of the EU SWITCH-Asia Policy Support Component (PSC) by Tenzin Wangmo under the supervision of Ranga Pallawala, Key Expert on Climate Change and Environment Policy, Sachin Joshi, Key Expert on SCP Policy Options and SDG12 Progress, and Dr Zinaida Fadeeva, Team Leader, SWITCH-Asia Policy Support Component.

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# Abbreviations

| | |
|---|---|
| **13th FYP** | 13th Five Year Plan |
| **CE** | Circular Economy |
| **CSI** | Cottage and Small Industries |
| **EU** | European Union |
| **GDP** | Gross Domestic Product |
| **GNH** | Gross National Happiness |
| **GNHC** | Gross National Happiness Commission |
| **GST** | Global Stocktake |
| **IRP** | International Resource Panel |
| **LDCs** | Least Developed Countries |
| **LT-LEDS** | Long Term - Low Emission Development Strategy |
| **LTS** | Long-term Low GHG Emission Climate Resilient Strategy |
| **MICE** | Meeting, Incentives, Conference and Exhibition |
| **NAP** | National Adaptation Plan |
| **NDC** | Nationally Determined Contribution |
| **NRDCL** | Natural Resource Development Corporation Limited |
| **NRS** | National REDD+ Strategy |
| **PSC** | Policy Support Component |
| **REDD+** | Reducing Emission from Deforestation and Forest Degradation |
| **RNR** | Renewable Natural Resources |
| **RGoB** | Royal Government of Bhutan |
| **SCP** | Sustainable Consumption and Production |
| **SDG** | Sustainable Development Goals |
| **SMES** | Small and Medium Enterprises |
| **SYB** | Statistical Year Book |
| **TA** | Technical Advisory |
| **UNDP** | United Nations Development Programme |
| **UNFCCC** | United Nations Framework Convention on Climate Change |
| **VNR** | Voluntary National Report |
| **WWF** | World Wildlife Fund |

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# Executive Summary

This paper provides an assessment of the integration of Sustainable Consumption and Production (SCP) in the current Nationally Determined Contribution (NDC), SCP-linked NDC within the framework of the 13th Five Year Plan (FYP) of the Royal Government of Bhutan to assess key potential areas for integration in the NDC 3.0.

The assessment on SCP integration in the current NDC presents close linkages across various sectors including agriculture, industry, energy, and waste management. Education and training, water management, and the tourism sector are priorities in SCP but are not reflected in the NDC. Other key NDC priority sectors including forest conservation and sustainable management, human settlement, and surface transport, currently show limited alignment with SCP strategies. Despite forest management and human settlement not being designated as primary SCP focus areas, they can be identified as critical enablers for implementing SCP and circular economy principles within these sectoral contexts.

The key SCP-linked NDC sectors, such as agriculture, industry, energy, waste management, and forest conservation, have been assessed through the lens of the strategic framework of the 13th FYP to explore potential areas for integration in the NDC 3.0. In addition, other sectors such as the construction industry, cottage and small industries, and tourism, which are not directly linked but embedded under other issues, have also been assessed in the context of the 13th FYP framework to explore the potential for integration into the NDC 3.0.

The key findings and recommendations for further assessment to integrate in the NDC 3.0 are presented below.

**Cottage and Small Industries (CSI):** CSI constitute 95% of the industries in Bhutan and serve as the backbone for the country's economy. They drive innovation, economic diversification, employment generation, rural income generation and poverty reduction. CSI are at the forefront of resources and energy-use efficiency and they build economic and social resilience. Both SCP and NDC are embedded within the industry sector and deserve focus assessment for integration in the NDC 3.0.

**Construction Industry:** Construction is another important sector contributing to the economic development of the country: this sector transforms various resources into constructed physical economic and social infrastructure for socio-economic development. It contributed a share of 7.88% to national GDP in 2022. It is a priority in the 13th FYP to promote quality infrastructure, use domestic resources and improve resource efficiency along the value chain of construction materials such as timber, as well as to reduce energy consumption and $CO_2$ emissions.

Despite the importance of the building and construction sector, neither SCP nor NDC highlight the construction industry even though it has obvious high potential for assessment and integration in NDC 3.0.

**Agriculture Sector:** Agriculture is an important sector that supports livelihoods, economic development and employment generation. It contributed 14.67% of national GDP in 2022 and is a major employer. Agriculture and livestock underpin the country's food and nutrition security, and it is a priority sector in the 13th FYP, as well as in the SCP strategy and NDC. Enhancing domestic production through the entire value chain and reduction in food waste, and minimising waste at storage and distribution are key, and should be given priority in NDC 3.0.

**Awareness creation and capacity building:** The level of awareness, knowledge and understanding of SCP and NDC is limited among many stakeholders. There is great need for awareness-raising through media, civil society, and education in order to build capacity and raise awareness on the importance of and necessity for promoting and adopting responsible consumption and production patterns. Creation of a knowledge hub with relevant, easy-to-use enabling tools would be invaluable not only for exchanging knowledge and information, but also for creating consumer demand for greener, cleaner and safer products to deliver needed change.

**Private sector engagement:** While there is private-sector engagement through representatives, the role of the private sector in either the preparation or the implementation of NDC is not clear. Therefore, defining the role of the private sector with adequate means of engagement in the NDC to drive delivery of priorities, notably through resource efficiency and the green value chain, will be crucial in the NDC 3.0.

# 1. Introduction

## 1.1. Switch-asia policy support component

Through the European Union (EU) Green Deal and Global Gateway, the EU is committed to supporting the transition of countries to a low-carbon, resource-efficient and circular economy while promoting sustainable production and consumption patterns.

As part of this engagement, the SWITCH-Asia Policy Support Component (PSC) aims to enhance SCP progress by scaling up and mainstreaming SCP policy in 42 countries spanning from the Middle East and Central Asia to South Asia, Southeast Asia and the Pacific, all of which constitute the target region. The SWITCH-Asia PSC builds on the long and successful track record of the SWITCH-Asia Programme in providing technical assistance. PSC also links with the SWITCH-Asia grants component and connects with programmes and priorities of the EU Delegations (EUDs). Their flexible and on-demand interventions, and their mandate to foster cooperation, strengthen networking and build a platform for exchange mean that the PSC is well-positioned to meet the needs of the target region in addressing the triple planetary crisis and in meeting international commitments, including the SDGs and the Paris Climate Agreement.

As a mode of operation, the PSC liaises with and advises national governments and regional organisations and networks in the target region. Typically, it engages with countries in regional and multi-country approaches to scale up SCP policy and implementation and deliver technical advisory, knowledge exchange, and capacity-building tools in regional institutions. Key points of intervention are SDG 12 as well as progress on and support for SCP-related goals, integrating SCP into the NDCs and climate-related actions, regional stakeholder engagement with particular attention to business and industry representatives, and communicating on SCP.

This report has been developed as a part of an exploratory Technical Advisory (TA) titled 'Sustainable Consumption and Production (SCP)-linked Nationally Determined Contributions (NDC) – Lessons Learning from the Champion Countries and identifying opportunities to capitalise synergies between NDC & SCP', which was carried out in five South Asian countries, namely Bangladesh, Bhutan, Nepal, Pakistan and Sri Lanka.

## 1.2. The Nexus Between Climate Change & Sustainable Consumption & Production

Unsustainable consumption and production patterns constitute the fundamental drivers of three interlinked planetary crises: climate change, biodiversity erosion, and environmental pollution. Evidence demonstrates that strategic modifications to these patterns could substantially reduce global greenhouse gas emissions through both direct and indirect pathways. Deployment of Sustainable Consumption and Production (SCP) frameworks yields significant co-benefits for climate change mitigation and adaptation and sustainable development, particularly concerning natural resource extraction and utilisation. The Global Resources Outlook-2024's International Resources Panels (IRP) present compelling evidence for this relationship. Thus the extraction and processing of material resources (fossil fuels, minerals, non-metallic minerals and biomass) account for over 55% of greenhouse gas emissions (GHG) and 40% of particulate matter health-related consequences. If land-use change is accounted for, climate effects grow to more than 60%, with biomass contributing the highest levels (28%), followed by fossil fuels (18%) and non-metallic minerals and metals (17% combined). Biomass (agricultural crops and forestry) also accounts for over 90% of total land-use related biodiversity loss and water stress.

These findings emphasise the substantial potential for both climate change mitigation and adaptation strategies such as enhanced material resource efficiency and sustainable resource management practices. Integrated action on resource efficiency, climate and energy, and food and land, have a significantly larger positive effect than any one of these policy areas for action would achieve in isolation. Despite its significance, however, the nexus between climate change and sustainable consumption and production remains for the most part underexplored in national climate change policies. However, the Paris Agreement and the Nationally Determined Contributions (NDCs) present a strategic opportunity for countries to explore this critical relationship more comprehensively by integrating SCP strategies into climate plans and actions, and

by developing more holistic and systemic approaches to emissions reduction and climate change resilience building.

Considering how heavily all economies and societies depend on natural resources, the urgency of decoupling economic growth from increasing resource use and environmental impact should be the main motivation for moving away from wasteful linear production and consumption practices. In this context, the nexus between SCP and NDC provides the framework and could be the catalyst for transformative actions through engagement and compromise at all levels, by all concerned stakeholders, government entities, the private sector and consumers. To that end, linkages between SDG12, SDG13 and SDG17 are an excellent opportunity to comprehensively understand the issues at stake, identify priority areas for actions, and implement a sustainable pattern of production and consumption in the NDCs and could enable resource efficiency and their sustainable management to strengthen climate mitigation and adaptation actions, without compromising market access and profitability in the production sector.

## 1.3. Nationally Determined Contribution (NDC)

The Nationally Determined Contribution (NDC) is the building block of the Paris Agreement, which was agreed at the 21st Conference of Parties (COP21) of the United Nations Framework Convention on Climate Change (UNFCCC). This agreement paved the way towards a bottom-up approach for a global agreement to solve world climate-change challenges and an opportunity to integrate national priorities with climate actions. All the parties are supposed to update their NDC progressively every five years in order to achieve the overall objectives of the Paris Agreement. The NDC process has been recognised as an opportunity to address other global commitments in an integrated manner. The United Nations Sustainable Development Goals (SDG), which are a landmark agreement in the 2030 global development agenda, also has recognised the Paris Agreement as a main contributor for achieving the targets. Therefore, the Paris Agreement has opened a window of opportunity for the countries to establish a development pathway that contributes to multiple global and national commitments with a common process including monitoring, reporting and verification.

During the first NDC cycle of the Paris Agreement, many Asia-Pacific countries included SCP-linked NDC targets and championed SCP-NDC integration. Altogether 28 countries in the Asia-Pacific region have a direct reference to SCP within their NDC targets, while in almost all of these countries there are SCP-related targets without, however, direct reference to SCP. Energy efficiency, waste management, value chain improvements, green buildings, building materials with low carbon footprints, promoting sustainable lifestyles – these are some of the common SCP-linked NDC areas in Asia. However, many of these targets have been set as conditional so that achieving them is contingent upon access to international support in the areas of finance, technology, and capacity building.

In 2025, all parties to the Paris Agreement are required to submit their third round of Nationally Determined Contributions (NDC 3.0), which must demonstrate increased climate ambitions guided by the Global Stocktake (GST) outcomes. This update presents countries with a strategic opportunity to integrate their national priorities, including sustainable consumption and production (SCP), into their enhanced climate commitments. The bottom-up approach of the NDCs enables countries to effectively align their domestic objectives with their international climate ambitions, ensuring both national relevance and global climate action.

To make the most of this opportunity, this Technical Advisory (TA), 'Sustainable Consumption and Production (SCP)-linked Nationally Determined Contributions (NDC) – Lessons Learning from 'Champion Countries' and Identifying Opportunities to Capitalise Synergies between NDC & SCP', has been specifically designed and implemented to support target countries in enhancing their NDCs. The TA aims to add value by making the NDCs more relevant and pragmatic, through the appropriate mainstreaming of responsible consumption and production patterns, and helping countries bridge the gap between ambitious climate goals and practical implementation strategies.

## 1.4. Objectives of the Technical Advisory

The TA has been strategically designed as an exploratory and scoping initiative to examine the integration of SCP into Bhutan's climate commitments. The primary objectives are threefold:

- To assess the current status of SCP integration within existing climate ambitions
- To identify the potential opportunities for enhanced integration
- To explore viable pathways for implementing these integration options

This scoping approach has made possible a comprehensive understanding of both existing practices and future possibilities, providing a foundation for more targeted interventions in supporting Bhutan's climate actions.

## 1.5. Methodology

The TA was conducted as an examination to explore potential avenues for integrating SCP in Bhutan's Nationally Determined Contributions (NDCs), and designed as an exploration in which the required information was collected through two main processes:

- studying the relevant policy documents of the country pertaining to SCP and climate change
- holding consultations with key stakeholders

A desk review of policies, strategies, plans and related reports, but not limited to SCP and NDC as well as one-on-one stakeholder consultations, was carried out to assess the integration of SCP in the NDC and explore opportunities for enhancement of integration in the NDC 3.0.

The review of broader polices, strategies, plans and other reports helped to understand the larger strategic priorities of the country as well as the principles of strategic guidance for socio-economic development of the country, in integrating SCP in the NDC.

One-on-one consultations with the relevant stakeholders from the government, civil society organisations, individual experts, and state-owned enterprises helped to understand the levels of awareness of SCP and NDC, SCP practices, key issues, challenges, and potential areas of integration.

A total of 25 stakeholder consultations were held, including twelve from government, seven from civil society organisations, four from state-owned enterprise and two individual experts. A national workshop was held on 5 April 2024 to present the findings and to receive further input from the key stakeholders.

# 2. National Context

## 2.1. Sustainable Development Goals context and Status

The 2030 Agenda for Sustainable Development, along with the 17 Sustainable Development Goals, provide a visionary roadmap for all countries and stakeholders to work towards prosperity, social inclusion and equality while preserving the planet for current and future generations, and leaving no one behind. In September 2015, Bhutan, along with other members of the international community, adopted the 2030 Agenda for Sustainable Development and the SDGs. Along with some other countries in the Asia-Pacific region, Bhutan joined as an early mover for the implementation of SDGs.

With the holistic approach to development based on the principles of Gross National Happiness (GNH), Bhutan's framework to development, implemented through five-year development plans, presents high levels of synergy and potential for integration with the SDGs. A joint assessment, conducted by the United Nations Development Programme (UNDP) and the Gross National Happiness Commission (GNHC) in October of 2015, revealed that out of 143 SDG targets, 134 were prioritised in the 11$^{th}$ five-year plan, which suggest a starting point for Bhutan to implement the SDGs.

The 12$^{th}$ Five-year plan (2018–2023) was prepared on the basis of the principles of GNH and SDGs, and was a major step towards the implementation of the SDGs. The preliminary assessment reported that the 17 National Key Result Areas of the 12$^{th}$ five-year plan were closely aligned with SDGs targets, attributing Bhutan's readiness to achieve SDGs with the prevailing pursuit of GNH development. Currently, the 13$^{th}$ five-year plan (2024–2029), which is focused on the implementation of the SDGs, is considered as 'the last mile' for achieving the SDGs.

Bhutan submitted the first Voluntary National Review report in 2018, in which it was indicated that all SDGs with the exception of SDG 17 were assessed as broadly on track (GNHC, 2021). However, in 2021, when the second Voluntary National Report was prepared, some SDGs were assessed to be at risk due to the profound impact of the COVID-19 pandemic, especially those related to economic vulnerability, development financing, and social outcomes. The second voluntary national assessment covered nine out of seventeen SDGs in detail. SDG-12, Sustainable Consumption and Production, was one among nine SDGs assessed in detail in both the first and the second national voluntary report. The SCP priorities and implementation status are discussed in the next section.

## 2.2. SDG-12, Sustainable Consumption and Production (SCP): Context and Priorities

SDG 12 is about ensuring sustainable consumption and production patterns, which is key to sustaining the livelihoods of current and future generations. It is about ensuring the sustainable management and efficient use of natural resources, and reducing waste generation through prevention, reduction, reuse and recycling. It is about doing more and better with less. It is about decoupling economic growth from environmental degradation, increasing resource efficiency, and promoting sustainable lifestyles. SCP is about increasing the sustainable management of resources and achieving resource efficiency along both the consumption and production phases of a product's life cycle, including resource extraction, production of intermediate inputs, distribution, marketing, use, waste disposal, and re-use of products and services (www.unep.org). SCP promotes the concept of Circular Economy (CE) through a combination of intelligent product design and standardisation, extended product life cycle, reuse, recycling, and remanufacturing. SCP plays an important role in protecting the environment and enhancing economic growth through resource efficiency. By using fewer materials, increasing productivity and efficiency, promoting clean production and demand for greener products, and minimising waste, SCP will result in using less energy and producing fewer emissions of $CO_2$. Integrating SCP in the NDC thus brings immense opportunities for enhancing climate ambitions and actions.

The importance of protecting the environment is enshrined in the Constitution of the Kingdom of Bhutan as a fundamental duty of all Bhutanese people for the benefit of present and future generations. Article 5 of the Constitution reflects this commitment to secure ecologically balanced sustainable development

while promoting justifiable socio-economic development. Equitable socio-economic development and environmental conservation are two of the four pillars of Bhutan's development framework, guided by the philosophy of GNH, for which preserving the environment is critical.

In 2018 and 2021, SDG 12 (Sustainable Consumption and Production) was one of nine SDGs assessed in detail in Bhutan's first and second Voluntary National Reports (VNR) presented to the high-level political forum in New York. The first VNR presented a pattern of high consumption energy and low energy efficiency as a central concern of SCP. There have been several initiatives towards implementation of SCP. Some of them include mainstreaming SCP into policies, plans and programmes; incorporating green elements in the public procurement systems; incorporating the SCP curriculum in the education system including secondary, vocational, and non-formal education institutions; developing several guidelines to promote green practices in tourism industry and public office setting; and youth action for 4Rs (reduce, reuse, recycle, and recovery). Furthermore, to address increase in energy consumption in households and industry, in 2019 the National Energy Efficiency and Conservation policy was developed. The low-emission development strategy for human settlement was prepared, and the Department of Renewable Energy, in collaboration with the WWF-Bhutan, launched an iconic building project to drive energy efficiency. Also in 2019 the National Waste Management Strategy was developed with the aim of moving to 'Zero waste by 2030' by using the 3Rs (reduce, reuse and recycle) and by embarking on the Circular Economy process.

**The development of the National SCP Strategy and Action Plan 2030** in 2020, through a thorough consultative process, involving experts and key relevant officials from government, civil society organisation and private sector representatives, was a major step taken to advance implementation of SCP in Bhutan. The Strategy aims at improving the sustainable use of natural resources, preventing pollution, managing waste sustainably, and decoupling resource use from economic growth through improved efficiency both at national and sectoral level. Although the approval of the Strategy was delayed due to the COVID-19 pandemic, some of the priority activities to assess integration of some of the key elements in the NDC are worth discussing, and a few priority sectors with their corresponding priority activities are highlighted in Table 1.

The integration of the priority sectors will be assessed in the second NDC and potential areas for integration in NDC 3.0.

**Table 1. SCP Priority Sectors/Activities**

| Key sector | Priority Activities |
|---|---|
| **Agriculture** | Increase food production through sustainable farming systems for food security and economic self-reliance<br>• Enhance food production through sustainable agriculture intensification, climate smart practices, reduce food waste, improve harvest and post-harvest interventions, promote agriculture value chain and enterprise development to enhance income and generate employment. |
| **Industries** | Pursue green growth in construction sectors through improved quality infrastructure and promote green and disaster-resilient construction; promote inclusive, green and sustainable growth in the production and manufacturing sector through the promotion of cleaner production processes and efficient use of resources<br>• Implement strategies to reduce construction waste, improve environmentally friendly practices, adopt cleaner technologies, harness and add value to natural resources through increases resource efficiency, apply innovative design, build capacity, and promote and support the use of local products |
| **Tourism** | Promote Bhutan as a green, sustainable, inclusive, high-value, and competitive tourism destination<br>• Promote sustainable tourism, build institutional capacities for SCP of tourism products and services |
| **Waste** | Zero waste by 2030<br>• Implement a national action plan for waste prevention and management. The action plan was prepared with an overall strategy of preventing and minimising waste generation at the source, along with diverting materials to be re-used, recovered, and recycled following the circular economy concept. |

| Key sector | Priority Activities |
|---|---|
| **Energy** | Strengthen energy security through diversification of the energy mix and promoting energy efficiency<br>• Diversify energy supply mix, promote renewable energy and energy efficiency, and strengthen an energy data management system |
| **Education** | Institutionalisation of the principles and concepts of SCP in the formal education system and in non-formal centres.<br>• Mainstream SCP in the formal education system, and integrate SCP in technical vocational education training institutes to ensure sustainable development and practices |

## 2.3. Climate Change context and Priorities

Globally, Bhutan has been recognised as a leader when it comes to sustainable development and environmental stewardship. The importance of protecting the environment is enshrined in the Constitution of the Kingdom of Bhutan as a fundamental duty of all Bhutanese citizens for the benefit of present and future generations. The Constitution mandates that a minimum of 60% of the country's total land surface is to be maintained under forest cover for all time. Currently, 71% of the total land is under forest cover and 51.44% of the total land is under protected areas, biological corridors and wildlife sanctuary. Bhutan is one of the ten top global biodiversity hotspots.

Bhutan's total projected population in 2024 was 777,224, with 59% of the population residing in rural villages. The country's economy has rapidly grown over recent decades, recording a GDP of BTN 227.81 bn (USD 2.74 bn), with GDP per capita of USD 3833.08 in 2022 (RGoB, 2024). However, the economy is based largely on climate-sensitive sectors such as hydropower and agriculture, both highly vulnerable to the impact of climate change. Both the frequency and the intensity of extreme climate events have been projected to increase with a changing climate. This is already being experienced by Bhutan and in the region every year with flash floods, droughts, forest fires, landslides, pest and diseases, etc.

Despite their status as a small, landlocked, fragile mountain ecosystem and a developing nation with many other pressing social and economic development needs and priorities, Bhutan made the commitment to remain carbon neutral at COP15 in Copenhagen in 2009. The 'commitment to remain carbon neutral was made with the view that there is no need greater, or more important than keeping the planet safe for life to continue'.[1] While making the commitment to remain carbon neutral, Bhutan also called on the global community to support its resolve and efforts to fulfil its commitment on mitigation and adaptation measures.

The Third National GHG Inventory[2] shows that Bhutan's greenhouse gas emissions (including forest emissions) in 2015 amounted to 3.8 mn tonnes of $CO_2e$, which is negligible on a global scale. In the same year, Bhutan's forest sequestered 9.4 mn tonnes of $CO_2e$, resulting in net negative emissions of 5.6 mn tonnes of $CO_2e$. In this regard Bhutan continues to remain carbon neutral.

The GHG emission projection to 2050 shows increasing trend reaching 5.222 mn tonnes $CO_2e$ by 2025 and 8.217 mn tonnes $CO_2e$ by 2050 as the result of pressure on forest land for development activities and economic growth, as well as from forest disturbances such as the outbreak of pests and diseases, wildfires, etc. Business-as-usual approaches to development will not work, and would likely put Bhutan's carbon neutral commitment at risk.[3] It is therefore important to explore various approaches including the integration of SCP in the NDC. To that end, it is essential to ensure that industry production processes are less energy intensive and consumption patterns less wasteful.

1 See *inter alia* the letter dated 30 September 2015, sent by the Vice-Chair of the National Environment Commission of the Royal Government of Bhutan to the UN Climate Change Secretariat in Bonn, Germany: https://policy.asiapacificenergy.org/ru/node/2376

2 Third National Communication from the Kingdom of Bhutan to the UNFCCC, 2020.

3 Bhutan's Long-term low GHG Emission and Climate Resilient Development Strategy, 2023.

Some of the key actions undertaken towards low emission and climate resilient development are summarised below:

- ***The Climate Change Policy of the Kingdom of Bhutan 2020:*** The Policy was adopted with a vision for 'a prosperous, resilient and carbon neutral Bhutan where the pursuit of gross national happiness for the present and future generations is secure under a changing climate'. The Policy aims to i) provide strategic guidance to ensure that Bhutan remains carbon neutral and protect the wellbeing of the people of Bhutan by adapting to climate change in an efficient and effective manner; ii) ensure meaningful participation of all relevant stakeholders in climate change action in a coordinated and coherent manner with clear roles and responsibilities; and iii) ensure that the challenges and opportunities of climate change are addressed at appropriate levels, through adequate means of implementation (finance, technology, capacity building and awareness) and integration into relevant plans and policies.

  Because Climate change is a cross-cutting issue that will affect all sectors and stakeholders, the Policy also outlines the roles and responsibilities of various institutions and stakeholders to ensure a coordinated approach to the implementation of climate actions.

- ***Bhutan's Long-term Low Greenhouse Gas Emission and Climate Resilient Strategy, 2023 (LTS):*** The LTS aims 'to make Bhutan a dynamic, prosperous, resilient, inclusive, and sustainable economy by 2050 while continuing to be carbon neutral, where the aspiration for GNH of the present and future generations are secured under a changing climate with a strong emphasis on low carbon and climate resilient approaches to development'. The strategy aims to ensure carbon-neutral development, build climate resilience, ensure the means for implementation, integrate climate action into development plans and processes, and enhance partnership. The LTS also highlights that with the projected increasing trend in GHG emissions resulting from the pressure on forest land for development activities and disturbances in forest land from climate change repercussions, a business-as-usual approach to development will put Bhutan's carbon neutrality at risk.

  The LTS highlights mitigation measures across key sectors: industry, food security, human settlement, surface transport, waste management, energy security, and the protection and enhancement of carbon sinks. While the LTS does not specifically mention SCP, the concept of SCP is embedded in most of the strategies highlighted in each of the sectors. For instance, the section on industry talks about decoupling industrial growth from GHG emissions by improving efficiency in the production process and shifting to renewable energy. Similarly, in human settlement, the strategy highlights adoption of energy efficient building design, appliances, and renewable energy in buildings and waste management through the application of a zero waste, circular economy by reducing, reusing, recycling, and improving technology and capacity building.

  Concerning climate resilience, the strategy highlights integrated water resource management, climate resilient agriculture and livestock production, disaster risk reduction and climate-proofing infrastructure, mainstreaming climate adaptation into development planning, and predicting future climate scenarios and risk via vulnerability assessment.

- ***National Adaptation Plan (NAP) of the Kingdom of Bhutan, 2023:*** Guided by the vision of the Climate Change Policy, the National Adaptation Plan aims 'to protect the health, lives, livelihoods and happiness of the people of Bhutan from the adverse impacts of climate change by building adaptive capacity and enhancing resilience to reduce vulnerability and by integrating adaptation actions into the development planning process at all levels'. The NAP highlights adaptation needs and priorities, institutional arrangements, implementation strategies along with monitoring and evaluations to support the implementation of adaptation plans and priorities. The key sectors identified are water, agriculture and livestock, forest and biodiversity, human settlement, human health, energy, and climate services and disaster risk reduction, which are to be implemented by strengthening policy and institutional support, enhancing the monitoring and evaluation process, doing research and collecting data, building capacity, and educating to raise awareness among the population.

**Table 2. Other climate related policies and strategies**

| Climate Change related Policies and Strategies |
|---|
| • Bhutan's National Environment Strategy, 1998<br>• Economic Development Policy, 2016<br>• The National Energy Efficiency and Conservation Policy, and Energy Efficiency Roadmap 2030<br>• 12th Five-Year Development Plan (2018–2023), 2018<br>• National Waste Management Strategy, 2019<br>• National Environment Strategy (updated), 2020<br>• Sustainable Hydropower Development Policy, 2021<br>• Renewable Natural Resources (RNR) Strategy 2040, 2021<br>• 13th Five-Year Development Plan (2024–2029), 2024 |

## 2.4. Second Nationally Determined Contribution (NDC) and Key Priorities

Bhutan submitted the second NDC to the UNFCCC in 2021 as an enhancement of the first NDC submitted to the UNFCCC in 2015. In presenting both the first and second NDC, Bhutan reaffirmed its pledge in 2009 to remain carbon neutral, meaning that GHG emissions will not exceed the carbon sequestrated by forests. Since Bhutan's NDC is a more than fair share of efforts for climate change mitigations, the country's NDC targets and actions are conditional on receiving adequate means for implementation depending on calls for international support. The key mitigation priorities with potential for SCP integration are presented in Table 3.

**Table 3. NDC priority sectors with the potential for SCP Integration**

| Key sector | Priority Activity |
|---|---|
| **Forest** | Forest conservation and management under the National REDD+ Strategy<br>• Seeks to provide co-benefits including enhancing livelihoods, protecting ecosystem services, and biodiversity conservation<br>• Continue to strengthen conservation of existing forest and increase adaptive capacity to climate change impacts |
| **Agriculture** | Low emission development strategy for food security<br>• Identifies 6 mitigation measures that aims to reduce emission, but at the same time provides co-benefits in increasing carbon sequestration. Example, biogas production, shift to organic fertilisers, improve diary production, agriculture practices<br>• Renewed focus on enhancing food security through enhance food production, improve efficiencies across storage, distribution and consumption chain, etc. |
| **Human Settlement** | Low emission development strategy for human settlement<br>• Key activities considered are across energy in building, transport, land-use, technology<br>• Mitigation measures include roll out of solar PV on buildings, replacement of LPG and firewood by electricity, increase in composting, and recycling, energy efficient and green building design, energy efficient appliances, etc. |
| **Industries** | Low emission developed strategies for industries<br>• Aims to ensure economic growth with a minimum level of related emissions and diversification of industries with higher value-addition and manufacturing products with cross-cutting benefits<br>• Mitigation measures include waste heat recovery, energy efficiency in production processes, conversion of diesel to electric boilers<br>• Industrial diversification and additional processing along value chain such as production of advanced building materials |

| Key sector | Priority Activity |
|---|---|
| **Surface Transport** | Low emission development strategy for surface transport<br>• Mass transit through improvement in bus system, open-bus rapid transit network, light rial transit, electric passenger vehicles, public bicycle systems, sidewalks, etc. |
| **Waste Management** | National Waste Management Strategy 2019<br>• Achieve zero waste so that the current trend of disposing over 80% to the landfill is reversed to less than 20% by 2030, based on the principle of circular economy |
| **Energy** | • Renewable energy from hydropower and aims to enhance resilience through reservoir/storage to ensure energy and water security<br>• Diversify energy, e.g. solar, wind, hydrogen, thermal<br>• Promote energy efficiency in appliances, buildings, industrial processes and technology |

## 2.5. Assessment of SCP/NDC Integration

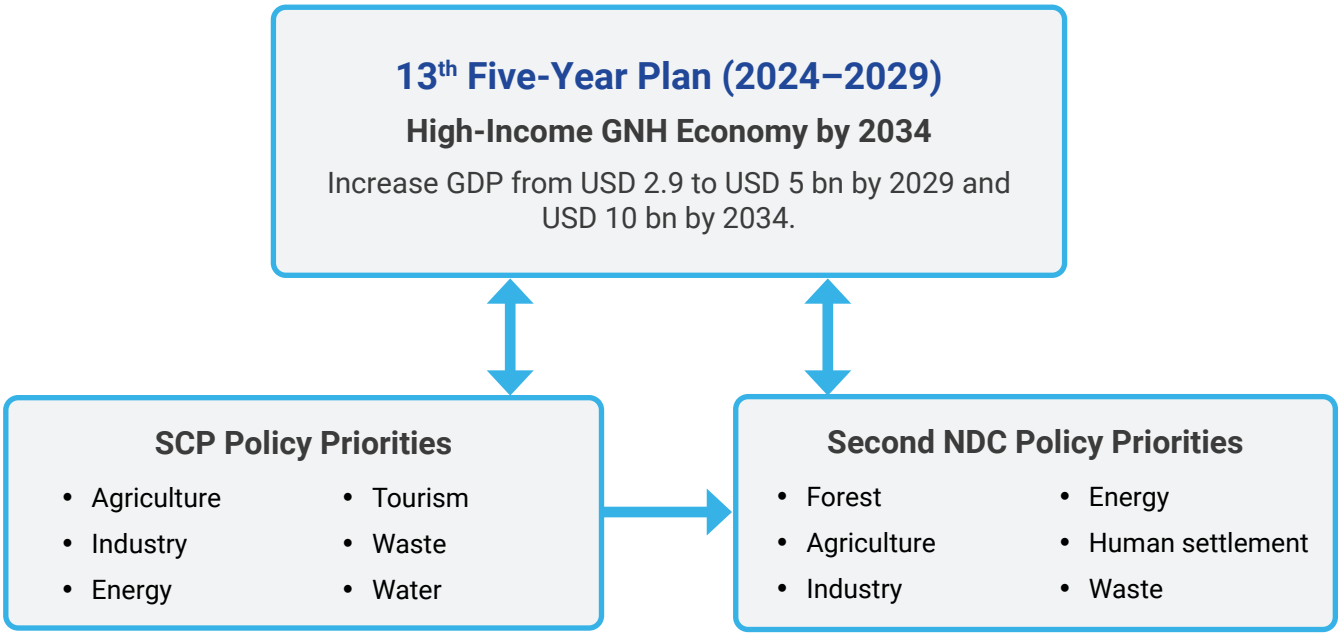
Based on the assessment of key sectors and priorities identified in the two key documents, the National SCP Strategy and Action Plan 2030 and the Second Nationally Determined Contribution, the key areas and priorities of SCP linked with NDC are highlighted in Table 4, which provides a basis for further assessment and potential areas of integration in the NDC 3.0.

**Table 4. SCP/NDC linked priority areas**

| Key Sector | SCP-NDC linked Areas |
|---|---|
| **Forest** | • Sustainable management of natural resources and resource efficiency<br>• Provide co-benefits including enhancing livelihoods, protecting ecosystem services, and conserving biodiversity |
| **Agriculture** | • Ensure food security through enhanced food production; improve efficiencies across the storage, distribution and consumption chain; intensify climate-smart practices; reduce waste; and promote the agriculture value chain and enterprise development to enhance income and employment generation, while also reducing emissions with co-benefits such as scaling up bio-gas production |
| **Industries** | • Industrial diversification along the value chain such as higher-grade steel, production of building materials, reducing construction waste, improving environmentally friendly practices, adopting cleaner technology, promoting innovative design, inducing and supporting the use of local products, etc. |
| **Energy** | • Strengthen energy security through diversification of energy mix, and promote energy efficiency<br>• Diversify energy supply mix such as solar, wind, hydrogen, geothermal, etc.<br>• Promote energy efficiency in appliances, buildings, industrial processes and technology |
| **Human settlement** | • While human settlement is not prioritised in SCP, there are various mitigation measures proposed in NDC that are SCP-relevant such as energy efficiency in building construction, transport, land-use and technology |
| **Waste Management** | • Achieve zero waste so that the current trend of disposing over 80% to the landfill is reversed to less than 20% by 2030 based on the principle of circular economy |

# 3. Assessment Framework and key findings of potential sectors/areas for SCP-NDC integration

The SCP-linked NDC potential areas for integration in NDC 3.0 are assessed within the 13th Five Year Plan (FYP) framework, a long-term Strategic Framework of the Royal Government of Bhutan. The 13th FYP strategic framework is described below to provide the overall strategic direction and focus of the 13th FYP to enable assessment of SCP-linked NDC potential areas for integration in NDC 3.0.




## 13th Five Year Plan (2024-2029)

The 13th Five Year Plan (FYP) sets the ambitious goal for Bhutan to become a 'High-income GNH Economy by 2034' driven by interconnected pillars of People, Progress and Prosperity. To ensure the continuity of interventions that will support the nation's long-term goal of becoming a High-Income GNH Economy by 2034, the 13th FYP has adopted a 10-year strategic framework (2024–2034).

The 13th FYP aims to transform Bhutan into 'a high-income country driven by innovation and sustainability'. While efforts will be enhanced in ensuring the wellbeing and productivity of all sections of society, economic development will be the thrust in the 13th FYP. The target is to increase GDP from USD 2.5 bn to USD 5.0 bn by 2029, and to USD 10 bn by 2034; increase GDP per capita from USD 3,833 to USD 6,174 by 2029, and to more than USD 12,000 by 20234; create full employment (97.5%) with quality jobs by 2027; and quadruple the income of the bottom 40% of the population by 2029.

The refocus on economic development was necessary and urgent, because Bhutan is undergoing a critical challenge in its journey of development with a significant number of prime-age workforce leaving the country in search of better economic opportunities abroad. While GDP reached USD 2.9 bn in 2023 and GDP per capita reaching USD 3833 in 2022, the structural change in the economy has been driven by public sector investment in hydropower. The Bhutanese economy struggles to generate a sufficient number of productive jobs, which has led to high youth unemployment, limited financial security for many of its people, and high inflationary pressures and domestic risks caused by strains in the financial sector. Economic diversification efforts are hindered by geographic challenges, inadequate infrastructure, and institutional barriers.

The Five Year plan is also intended to drive Bhutan's socio-economic and institutional transformation agenda, and will serve as the transition strategy to ensure that graduation from the Least Developed Countries (LDCs) status is irreversible and sustained. Bhutan is also committed to remaining carbon neutral.

# 4. Key findings and Potential Areas for NDC-SCP Integration

## 4.1. Forest Conservation and Management

Bhutan is recognised as one of the 10 biodiversity 'hotspots' worldwide, and ranked among the most biodiverse countries on the planet. Over 70% of the country is covered in natural forest, providing home to around 762 species of birds, over 5400 vascular plants, and to some of the rare animals such as the Golden Langur, Royal Bengal Tiger, Clouded Leopard, Hispid Hare, Sloth Bear, and Red Panda.

Conservation is at the core of Bhutan's development planning. The Constitution of the Kingdom of Bhutan mandates that 60% of the country's land is to be maintained under forest cover for all time. The protected areas and biological corridors cover 51.44% of the country's surface area.

Bhutan's forest serves as the cornerstone of the nation's carbon neutral commitment, and there has been tremendous improvement in estimating forest emissions and removals. The Third National GHG Inventory shows that in 2015, the total emissions were 3.814 mn tonnes of $CO_2e$, with sequestration of 9.386 mn tonnes of $CO_2e$, resulting in a net sequestration of 5.573 mn tonnes of $CO_2e$.

Bhutan's second NDC through the REDD+ framework and National REDD+ Strategy (NRS) continues to focus on strengthening the conservation of existing forest and increasing the country's adaptive capacity to climate change impact without compromising opportunities for future economic development and prosperity. The NDC aims to strengthen this conservation by providing co-benefits including enhanced livelihoods, protected ecosystem services and biodiversity conservation. The NRS aims to achieve these benefits via four strategy options:

- Enhancing forest management and practices
- Promoting climate smart primary production
- Ensuring integrated land use planning
- Improving rural livelihoods

The economic opportunities and livelihood support aspects of the forest resources, including climate-smart primary production, are unpacked and analysed in the NDC. Sustainable management of forest resources and resource efficiency for economic development are the cornerstone of both SCP and NDC.

## 4.2. Construction Industry

Construction is one of the major sectors that contributes to the economic development of Bhutan, transforming various resources into the built physical economic and social infrastructure necessary for social development. The construction industry share of GDP was 7.88% in 2022 (SYB, 2023).

The 13$^{th}$ FYP sets a target to increase revenue from the construction industry from BTN 19 mn in 2024 to BTN 43 mn by 2029. It aims to professionalise the industry to improve the quality of infrastructure with incorporation of international best practices and technological innovations. Use of local raw materials such as timber, sand, boulders, cement, steel, etc. will be prioritised both in raw and processed forms.

For instance, in the forestry sector, a study carried out by Department of Forest and Park Services show that there is potential area of 208,065 hectares for silviculture thinning and total log volume for extraction of almost 30 mn $m^3$ annually. Currently through the Natural Resource Development Corporation Limited (NRDCL) and Department of Forest are extracting around 54.6 mn $m^3$ of timber annually. However, there are many challenges in timber extraction and production. Consultation with the stakeholders revealed that wastage accounts for around 40% of the wood at source, and around 40% at the sawmills. Other issues and challenges include the use of old technology, lack of capacity and skilled human resources, access to finance, and inadequate policy-level coordination among the key agencies.

As a key sector within the circular economy framework, the construction industry has significant potential to drive sustainable economic growth. Enhancing efficiency across its value chain can generate positive impacts throughout the broader economy. This aspect has also been less explored, and was not given priority in either the current NDC or the SCP strategy, even though there are obviously untapped opportunities for efficiency and reduced emissions by drastically reducing the amount of waste, both at the source in extracting timber and during the production of processed timber. Inducing and enabling innovations in the Cottage and Small Industry sector in response to local challenges will unlock development opportunities while enhancing the resilience and sustainability of local ecosystems.

## 4.3. Industry and SMEs

Industrial growth plays an important role in Bhutan's economic development and diversification. Industries in Bhutan are classified according to the scale of their license as large, medium, small or cottage, depending on the amount of capital investment. The industry in Bhutan is categorised as large if the investment is >BTN 100 mn with a minimum of 100 employees, medium if the investment is between BTN 10.0–BTN 100.0 mn with 20-29 employees, and small with investment of between BTN 1–BTN 10 mn with 5-19 employees. Cottage industries invest < BTN 1mn with fewer than 4 employees. See Table 5.

**Table 5. Industries by type and size**

| Industrial establishment | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| **Total number of industries** | **24,595** | **23,133** | **22,267** | **27,290** | **31,399** |
| Industries by size | | | | | |
| **Large** | 127 | 124 | 96 | 101 | 104 |
| **Medium** | 231 | 137 | 173 | 188 | 189 |
| **Small** | 778 | 794 | 881 | 1,394 | 1,140 |
| **Cottage scale** | 1,882 | 1,790 | 1,616 | 1,692 | 2,252 |
| Industries by type | | | | | |
| **Production & manufacturing** | 3,018 | 2,845 | 2,766 | 2,375 | 3,685 |
| **Contract** | 3,295 | 2,269 | 17,371 | 2,387 | 2,293 |
| **Services** | 18,282 | 18,019 | 2,130 | 21,528 | 25,421 |

*Source: Statistical Yearbook, 2023, NSB.*

In 2023 there were about 32,000 active industrial licenses in the country, of which 81% were in the service sector, followed by 12% in the production and manufacturing sector, and 7% in the construction sector. Of the 3,685 production and manufacturing industrial licenses, 92% were cottage and small industries and only around 8% constituted medium or large industries. The manufacturing industry is dominated by small and cottage industries throughout the country engaged mainly in wood- or agri-based activities, or handicraft and textile businesses such as sawmills, furniture-making, traditional paper units, resin tapping, etc. The few large enterprises are energy intensive industries engage mainly in the production of cement, carbide, iron and steel, or ferroalloys.

The Third National Communication (TNC 2020, NEC) reported that industrial processes and other product use is the second largest contributor of GHG emissions in Bhutan accounting for 796.423 Gg $CO_2e$, or about 20.88% of total GHG emissions in Bhutan in 2015. These major industries include those in the 'mineral products' category (e.g. cement production), chemical products (calcium carbide) and metal industry (ferroalloys).

In the NDC the interventions for industry focus on the energy-intensive medium and large companies, concentrating on energy efficiency and technology measures such as waste-heat recovery, conversion of diesel boilers to electric boilers, refuse derived fuels in cement plants, replacing fossil origin reductants with renewable charcoal, etc. Such mitigation measures are detailed in the Low Emission Development Strategy (LEDS) for Industries 2021.

The LEDs for industries also highlights the potential for diversification in the industrial sector from the existing focus on manufacturing of energy-intensive intermediary products such as ferroalloys, steel, cement and so on, towards a production of higher-value added finished goods. For example, the existing cement production could be the input for production of 'ready-made pre-cast' concrete mixes such as autoclaved aerated concrete bricks, ready for use in building construction. It should be noted that the Cottage and Small Industries sector is not covered in the current NDC, which implies potential for integration in NDC 3.0. These details are highlighted in Section 4.4.

## 4.4. Cottage and Small Industries (CSI)

Cottage and small industries make up approximately 92% of the Bhutan's industries, and they are distributed throughout the country. They are major employers, and the backbone of the country's economy. While no studies have been carried out to measure the contribution of this sector to GDP and employment generation, it forms the foundation of the socio-economic development of the nation, driving innovation, economic diversification, employment generation, rural income generation, and poverty reduction. The Low Emission Development Strategy (LEDS) for industries, 2021 also highlights diversification of the industries away from heavy industries with higher value-addition and manufacturing products with cross-cutting benefits in other sectors.

To accelerate the growth of CSI in the economy, the Government adopted the CSI Policy, 2019 and prepared Cottage and Small Industry Action Plan 2019–2023. This was implemented through the start-up and cottage and small industry development flagship programme 2019–2023 during the 12$^{th}$ Five Year Plan. The Department of Industry, via the flagship programme, provided capacity building in business management, product development and packaging, labelling, food processing, etc. to the CSI. They created a platform to share experiences, lesson learned, public-private dialogue, B2B linkages, among others. Additionally, 4 CSI shops were established: two in Bhutan, one in Perth and one in New York, to provide market access for products from the CSIs.

In discussion with the officials from the CSI Division, although so much has been achieved through the flagship programme during the 12$^{th}$ five year development plan, the industry still faces many challenges, including, access to finance, innovation and technology, access to markets, technical know-how of packaging, lack of economies of scale, standardisation and certification, bookkeeping and accounting, pricing, *inter alia*.

The momentum must be continued to support and endorse CSI since it is the major employer and backbone of the country's economy. SCP/CE integration is the most relevant for CSI to ensure the sustainable management of resources while increasing efficiency, innovation, creativity, reusing and recycling, and increase productivity. The NDC 3.0 should include CSI for sustainable development and poverty reduction. A support programme for CSIs and startups, focusing on innovations demonstrating resource efficiency, cleaner technologies, waste-to-resources, providing local jobs to youth and women, and making clear the expected outcomes on emissions reduction, could be actively promoted by the Government in close collaboration with large industries and the financial system to provide access to limited funds allowing development, replication, and acceleration of the innovations.

## 4.5. Waste Management

Notwithstanding the strong legislation and strategy governing waste prevention and management in Bhutan, waste management issues remain a national concern. Improper disposal practices and lack of appropriate infrastructure and technologies are preventing Bhutan from converting waste into resources.

The national waste inventory survey in 2019 reported that the total solid waste generation in one day was 172.16 metric tonnes, and the per capita waste generation was 0.23 kg per day. Of the total waste generation, almost 50% of waste comes from households, followed by 40% from businesses. Waste is composed of 46% waste, indicating a potential for composting; and 33% is composed of plastic and paper waste, indicating a potential for reuse and recycling. More than 60% of households lack access to waste collection services.

In terms of GHG emissions, the third National Communication to UNFCCC, 2021 reported that emissions from the waste sector totalled 126.50 Gg $CO_2e$ in 2015, representing 3.317% of total GHG emissions. The GHG emissions from waste are mainly from two sources: wastewater treatment and discharge (86.85%), and solid waste disposal (13.14%).

To address what is a long-standing waste management issue, the National Waste Management Strategy was approved in 2019. The aim of the Strategy is to prevent and minimise the generation of waste at the source, and to divert materials to be refused, reused, recovered and recycled in order to minimise the amount of waste going to landfill. The goal is to achieve Zero Waste, and to reverse the current trend of disposing over 80% to the landfill to less than 20% by 2030 based on circular economy. The key interventions include 100% segregation at source, provision of segregation bins to all households, an adequate number of waste-collection facilities, drop-off centres at convenient locations, efficient collection, storage and transportation systems, functional material recovery facilities, and final disposal facilities such as sanitary landfills and incinerators. At least 50% of organic biodegradable waste collected separately must be converted to manure with market mechanisms for sale.

In 2020, during the 12th five year plan period, a Waste Management Flagship Program was launched to support implementation of the National Waste Management Strategy with budget outlay of BTN 3,654 bn.

The implementation of the National Waste Management Strategy 2019 was highlighted as a key strategy in NDC for mitigation measures in this sector. While the National Waste Management Strategy is prepared on the basis of circular economy concepts, and key interventions focus on the principles of reduce, reuse, recover and recycle, there is opportunity to further explore the entire value chain of waste segregation. For instance, with 46% of municipal waste comprising discarded food, significant opportunities exist to optimize the food waste value chain through composting or biogas production. Similarly, construction waste—currently the least-examined waste stream from a circular economy perspective—presents substantial potential for comprehensive value chain analysis aimed at waste minimisation and resource efficiency enhancement. These findings underscore the critical importance of positioning waste management as a priority sector within NDC frameworks.

## 4.6. Tourism

The tourism sector in Bhutan is guided by the policy of 'high-value low-volume' to ensure sustainable management of tourism in the country. Tourism is cross-sectoral in nature, with close interconnections between the economy, society and the environment, and with a major impact on ecosystem resilience and the climate. The sector stimulates productive capacities from trade, and creates jobs linked to the tourism value chain.

Some of the key tourism products that Bhutan provides are: culture; nature and eco-tourism; adventure; spiritual and physical wellness; meetings, incentives, conferences and exhibitions (MICE); sports, events, and so on. While tourism per se is not covered in the current NDC, activities linked to tourism such as waste, energy efficiency, transport, among others, are key potential areas to assess from the SCP and CE standpoint.

Tourism is prioritised as vital sector in the 13th FYP, as a significant source of foreign currency and gainful employment. The goal is to attract at least 300,000 tourists annually from diverse origins and sources. Considering the increasing potential importance of tourism in the economy of Bhutan, it is primordial to learn from the successes and failures of other countries, since tourism can be a driver of economic growth in the short term and a source of major challenges in the long term with regards to resource use, waste in sensitive areas, and cultural ramifications. It is a critical sector at the crossroads of NDC and SCP, mainly for what concerns the CSIs, and the Government should set clear rules of conduct for the large companies, and local and international tour operators, with an active communication programme. Responsibly produced artisanal products, strict waste action plans, and green transport and lodging should become the structural elements of a national tourism programme, integrating responsible consumption and production with low-carbon economic development.

## 4.7. Agriculture and Livestock

Agriculture is an important sector for Bhutan that support livelihoods and rural economic development. The share of agriculture contribution to GDP is 14.67% in 2022 (SYB, 2023). With 51% of the population employed in agriculture, it makes significant contribution to the national economy, food security, and youth engagement and employment.

Agriculture is practiced mostly on small farms of less than 0.9 hectare for subsistence and non-subsistence purposes. The most dominant crops cultivated include cereals (rice, maize, wheat, buckwheat, barley, millets); fruits and nuts (citrus, apples, walnuts, areca nuts); vegetables (chillies, brassicas), potatoes, cardamom and ginger (DoA, 2019). Citrus, apple, potato, cardamom and ginger are the most significant export crops (DoA, 2019).

Agriculture and livestock remain essential component of the renewable natural resources and underpins the sustainability of Bhutan's food system. Despite a high focus on domestic food production, Bhutan continues to rely on imports. Import of agrifood increased from BTN 2573.26 mn (around USD30.27 mn) in 2010 to BTN 11738.3 mn (around USD 138.09 mn) in 2023, leaving a negative trade balance of BTN -157.00 mn in 2010 and BTN -905.00 mn in 2023 (MoAL, 2024).Therefore, there is a renewed focus and attention to enhance food production, and improve efficiencies across storage, distribution, and consumption chains.

Recognising the need to enhance domestic food production, while considering to remain carbon neutral for all times, the Department of Agriculture and Livestock prepared Low Emission Development Strategy for Food Security in 2021. The Strategy identifies mitigation measures aimed at reducing emission and increasing carbon sequestration. The mitigation actions include switching from synthetic to organic fertilisers, improving agricultural practices, increasing biomass through increased perennial crop production, producing domestic biogas, reducing continuous rice flooding, and improving dairy cattle production.

Further to enhance domestic production to ensure food and nutrition security, through the Renewable Natural Resources (RNR) strategy 2040, it aims to bring transformational changes that enhance production and quality of the RNR commodities; accelerate agri-business development and expansion; strengthen research and innovation and dissemination; enhance production efficiency; promote resilience to climate change impacts; develop enabling policies, etc.

Agriculture is one of the priority sectors in the 13$^{th}$ FYP. It aims to bring transformation to enhance food and nutrition security, elevate farmers income and increase sectors contribution to GDP. The target is to increase the primary sector (agriculture and livestock) contribution to GDP from BTN 31 bn (current price) in 2023 to BTN 50 bn by 2029.

Given the focus of integration of SCP and CE in the value chain of production efficiency, storage, and distribution, agriculture and livestock should be taken up in the NDC 3.0.

# 5. Stakeholder Mapping and Outcome of Consultations

The consultations with the key stakeholders provided a general understanding of their views on SCP and NDCs, key issues and challenges and potential areas for further assessment. Some of the key outcomes including challenges and issues are highlighted here.

## Learning from the NDC Preparation Process

The NDC preparation was led by the former National Environment Commission (NEC), now the Department of Environment and Climate Change under the Ministry of Energy and Natural Resources. A national taskforce was formed as a platform to discuss and guide the preparation of the NDC with members representation from various ministries and agencies, and included representatives from the private sector and civil society organisations. While private sector representatives were included in the taskforce, NDC is a government-driven process, resulting in activities that are policy oriented and government focused.

**On the content of NDC,** the key component of the NDC is based on the IPCCC sectors – energy, industrial processes and other product use; agriculture, forestry and other land use; and waste. There is need to further unpack some of the mitigation measures identified in the NDC. While the NDC is concerned mainly with mitigation-centric measures, there are areas within these proposed measures that could be further developed to integrate SCP/CE issues in the NDC 3.0 to support and enable the delivery of the climate objectives.

Other key economic sectors to be given due attention in the NDC include tourism and construction, CSI and medium-sized industries. These are also the sectors that have high potential for SCP/CE integration, with opportunities to be easily freed up, all while they are contributing to the climate agenda, sustainable economic growth, and poverty reduction.

## Private Sector Engagement

In consultation with the stakeholders, it was noted that representation of the private sector through associations such as the Bhutan Chamber of Commerce and Industry, the Association of Bhutanese Industries, Construction Association of Bhutan, etc., were included in the NDC preparation process; however, the role of the engagement of the private sector was not clear. Moreover the role of the private sector in implementing NDC was also not clear. Therefore, to ensure an appropriate identification of the NDCs targets and their effective implementation, it is crucial to seek for and secure an effective private sector engagement, as this sector is the backbone and an engine of growth, assuming an important role in the socio-economic development of the country, as well as its resilience to climate repercussions.

## Level of awareness of the SCP and NDC

During the consultations, it was noted that many of the stakeholders expressed a low level of understanding concerning SCP, NDC and their linkages. Unless the stakeholders are engaged in the preparation and implementation of the SCP, NDC and climate related projects, knowledge on SCP and climate change/NDC will remain limited. This will negatively affect the integration of SCP/CE-linked NDC in the overall 13$^{th}$ five year plan and its implementation.

## Strengthening Coordination

The former National Environment Commission, now the Department of Environment and Climate Change, is the custodian of the NDC. The Department takes the lead in preparation of the NDC through wider consultations and taskforce formation. However, once the NDC is finalised and submitted to the UNFCCC Secretariat, the implementation of the NDC lies with the line ministries and agencies. It was noticed that many of the line ministries and agencies have no knowledge of the resource mobilisation to support implementation unless the activities are incorporated in the national five-year development plans and programmes.

In addition, the resource mobilisation mandate is with the Ministry of Finance, for both domestic and external resources, in particular the financial mechanisms established through the UNFCCC, including Green Climate Fund, Global Environment Facility, Adaptation Fund and now the Loss and Damage Fund. But there seems no mechanism for coordination and collaboration for the mobilisation of resources for implementation of climate action at the national and local levels.

A coordination mechanism and a platform for regular exchange of information, lessons learned, and knowledge sharing is crucial. As for SCP, climate change issues and NDC involve multiple actors and a diversity of sectors. Defining NDC targets without other concerned stakeholders, including with regards to implementation means, will leave little opportunity for their implementation. Thus it is essential to integrate SCP and NDC for mutually supportive policies and action plans, and commit to an engagement for a common national objective.

In the table below are some – but not all – of the key stakeholders, for consultations on the assessment of integration of the SCP in the NDC 3.0.

**Table 6. Key stakeholders and their respective roles**

| Agency | Role and Responsibilities |
|---|---|
| **Cabinet Secretariat** | Coordination of strategic and five-year development plans and programmes; also the focal agency for SDG monitoring and reporting |
| **Department of Environment and Climate Change, Ministry of Energy and Natural Resources** | National focal point for Climate Change<br>National focal point for Sustainable Consumption and Production |
| **Department of Forest and Park Services, Ministry of Energy and Natural Resources** | Manage and utilise Bhutan's forests for sustainable production of economic and environment goods and services to meet the needs of the people |
| **Department of Industry, Ministry of Industry, Commerce and Employment** | Development of policies and strategies for the growth of the industrial sector |
| **Department of Tourism, Ministry of Industry, Commerce and Employment** | Sustainable promotion and management of tourism industry through development of policies, strategies, plans, guidelines, etc. |
| **Department of Agriculture, Ministry of Agriculture and Livestock** | Development of policies and strategies for agriculture and livestock development |
| **Department of Energy, Ministry of Energy and Natural Resources** | Development of hydropower, renewable energy, energy efficiency policies, strategies, plans and programmes |
| **Natural Resources Cooperation Development Ltd.** | Sustainable management and supply of timber, sand and stone |
| **Bhutan Chamber of Commerce and Industry** | Formulate guidelines, standards to enhance business environment and competitiveness, establish alliance with local and foreign business, etc. |
| **Construction Association of Bhutan** | Liaison between private contractors and government to facilitate and address issues and challenges |
| **Ministry of Infrastructure and Surface Transport** | Development of policies, strategies on human settlement, standards, guidelines, compliance and enforcement of construction standards and guidelines, etc. |

# 6. Potential Areas FOR SCP–NDC integration in Bhutan

Based on desk review, consultations with stakeholders, and views expressed during the national workshop, some of the recommendations for further assessment and engagement are presented here.

**Construction Industry:** Construction is one of the important sectors that contributes to the economic development of the country. It transforms resources into the built physical economic and social infrastructure necessary for socio-economic development. In the 13th five-year plan, the government emphasised that at least 70% of construction materials used in Bhutan must be produced domestically through supply chains. Use of local materials such as timber, sand, boulder, and cement will be given priority both in raw and in processed value-added form. In the 13th FYP, the construction industry is expected to contribute to a projected GDP in 2029 of BTN 43 mn, up from BTN 19 mn in 2024. Around 7% of the 31,399 industrial license holders in Bhutan are in the construction sector, which contributed 7.88% to Bhutan's GDP in 2022.

The construction industry is the least explored sector for both SCP and NDC, and it is recommended that further assessment for integration be carried out in the NDC 3.0.

**Forest and Timber Industry:** Bhutan maintains an ambitious commitment to preserve 60% of its total land surface under forest cover while pursuing national development goals. The timber industry, as a key economic sector, significantly affects the country's forest resources and sustainability efforts. Enhancing the efficiency of timber processing operations presents a strategic opportunity to balance conservation with economic growth, including optimising manufacturing processes, minimising waste through the incorporation of timber residues into production cycles, and developing sustainable value chains in the building and construction sectors. These improvements would not only support Bhutan's environmental conservation goals but also strengthen the economic viability of the timber industry through resource optimisation, providing an opportunity for further assessment for integration in the NDC 3.0.

**Cottage and Small Industries (CSIs):** CSIs , located throughout Bhutan, constitute 95% of all the industries in the country, and are the backbone of the country's economy, driving innovation, economic diversification, employment generation, rural income generation, and poverty reduction. Considering the nature and scope of their work, there is strong potential for linking SCP/CE and climate change/NDC respective objectives, so as to unlock opportunities for responsible action. However, it was only during the 12th five-year plan that the CSIs were duly recognised, with a flagship programme to promote them. The 13th five-year plan (2024–2029) focuses on economic growth through innovation, creativity and technology. There is a potential to see how SCP/CE could be integrated into the NDC 3.0, and the CSI offers the scope and platform for this necessary integration.

**Waste Management:** The National Waste Management Strategy 2019 aims for zero waste, to be achieved by reversing the current trend of disposing more than 80% to landfill to less than 20% by 2030 based on the circular economy. Waste management was implemented as a flagship programme in the 12th five-year plan, and many initiatives are underway including the strengthening of material recovery facilities, piloting extended producer responsibility, and so on. However, waste management has not yet reached an adequate scale compared to the increasing challenges and needs of this sector, and many more concerted efforts among the stakeholders concerned will be required to address policy and implementation issues. Therefore, further engagement to assess and unpack the integration of CE/SCP in NDC 3.0 is highly recommended. Reducing the production of waste, and responsibly managing the wastes that are produced, have obvious climate implications that need to be considered in a zero-carbon strategy.

**Agriculture Sector:** Agriculture is an important sector that supports the livelihoods and economic development of the country, contributing 14.67% to the GDP; it is also a major employer.

Agriculture and livestock underpin the sustainability of Bhutan's food and nutrition security. As such it is highlighted as key priority in SCP, NDC and in the 13th FYP. Enhancing domestic production to reduce imports ensures food and nutrition security and also supports economic growth through accelerating agri-business development and expansion, enhancing production efficiency across the product value chain, etc.

The SCP and CE integration, with relevant responsible and efficient production methods, transport and packaging as well as healthier products of improved quality, brings value to the sector and for the society, and should be the priority in the NDC 3.0.

**Awareness creation and capacity building:** As highlighted above, the level of understanding concerning both SCP and NDC is limited among the key stakeholders, unless they are directly involved in SCP-related project implementation, NDC preparation, climate related activities, or participation at the climate change conference (COP).

There is a clear need for awareness-creation and capacity-building related to SCP and NDC and their mutually supportive inter-linkages among potential stakeholders, including media engagement in the next NDC preparation.

A platform to exchange information, knowledge sharing, and lessons learned should be established, presenting an opportunity to learn about and discuss topics that are of high priority to the government and the sustainable development of the country, society, the economy, and the environment. It would be of great value and benefit to create awareness and build capacity among the stakeholders through access to ready-to-use tools and financial resources.

**Private-sector engagement:** In the preparation of the NDC, the private sector is represented by the Bhutan Chamber of Commerce and Industry and associations. However, the role of private sector engagement in preparing the NDC, or how to engage private sector in implementation of NDC, has not been well defined or made clear to the stakeholders, thus limiting their contribution to the NDC objectives.

There is a clear need for private-sector engagement, in particular the CSI and SMEs, but their role must be clearly defined and enabled as relevant. The participation of the private sector must be either through compliance measures or incentives for climate actions. Such clarity will help stimulate the active engagement of the private sector as well as influence the outcome of the decisions. Moreover, it is important for the government to issue relevant green and sustainable procurement policies, structured around responsibility and sustainability principles, and prioritising green safer products, local innovations in response to local challenges, the creation of local jobs for youth and women in particular, and to contribute to building local resilience to climate change and local ecosystem resilience.

**Preparation of NDC 3.0:** The Department of Environment and Climate Change, Ministry of Energy and Natural Resources, Royal Government of Bhutan will lead the preparation of the NDC 3.0 in collaboration with UNDP and other partners.

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