Background Report On

SDG 12 Monitoring and Reporting in South Asia:

Capacity Mapping, Significant Challenges and Capacity Development Opportunities

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

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Acknowledgments

Disclaimer

Executive Summary

The Sustainable Development Goals (SDG) are a universal call to action to end poverty, protect the planet and improve the lives and prospects of all people on planet earth. All UN Member States adopted the 17 Sustainable Development Goals (SDGs) in 2015 as part of the 2030 Agenda for Sustainable Development which set out a 15-year plan to achieve the Goals. The southern region of Asia includes eight countries; Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka; SDG 12 has been noted as having the most disparate need for progress with low monitoring and reporting actions. This report presents the results of an assessment conducted based on a baseline survey on SDG 12 Monitoring and Reporting in South Asia by National Cleaner Production Center Sri Lanka with support from the EU SWITCH-Asia Regional Policy Advocacy Component (RPAC). The current status, challenges, technical and institutional capacity for SDG 12 monitoring and reporting are highlighted in this background report.

Initially, a self-assessment framework was designed based on the UNECE template and countries were reviewed. A questionnaire was developed based on the CDAT framework and shared among the countries previously identified potential parties responsible for SDG 12 monitoring and reporting. Around 35 responses were collected from interviews and questionnaire surveys from the seven countries. The respondents were representatives of line ministries or agencies and civil society organizations.

Based on the study, it was found that out of 13 indicators, ten indicators have been reported at least by one country. 12.6.1 and 12.b.1 are the most reported and monitored indicators among the 13 indicators and 12.2.1 is the indicator that shows a significant delay in reporting and monitoring. Furthermore, 12.5.1 and 12.7.1 need more attention to improve reporting and monitoring in the South Asian region. Almost all the indicators have not been well monitored and reported adequately.

Gaps were identified during the capacity mapping in all three areas of competencies, resources, and enabling environment. Lack of skills, knowledge, and awareness, lack of integrated policy environment, insufficient stakeholder engagement, inadequate government support, and insufficient resource allocation have been identified as major challenges and barriers to SDG 12 monitoring and reporting in the South Asian Region.

To enhance the efficiency of monitoring and reporting of SDG 12, the identified gaps need to be addressed by conducting knowledge dissemination and capacity building sessions, creating a mechanism to follow up with government bodies continuously and making available a focal gathering point. Thereby all the stakeholders can enhance the efficiency of monitoring and reporting activities, avoid data misplacements and repetition and continue to support the countries in the aspects of knowledge creation, capacity building, and dissemination of success stories.

1. Introduction

1.1 The 2030 Agenda for Sustainable Development

The Sustainable Development Goals (SDG) are a universal call to action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere. All UN Member States adopted the 17 Goals in 2015 as part of the 2030 Agenda for Sustainable Development which set out a 15-year plan to achieve the Goals. This agenda is a blueprint for achieving a better and more sustainable future for all people and the world by 2030. All South Asian countries signed up to the agenda in 2015 and agreed to establish a focal point for the implementation in their respective countries.

1.2 Sustainable Development efforts in South Asia

South Asia is the southern region of Asia, which includes eight countries; Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka (as illustrated in the figure below). South Asia has a population of 1.891 billion people, or almost one-fourth of the world's population. It is, therefore, the world's most populous geographical region. The South Asian region accounts for about 39.49% of Asia's population, over 24% of the world's population, and is home to a diverse population with diverse cultural, topographic, and geographic backgrounds (One Planet Network, 2019). Due to the population increase and other factors, South Asia has always been given special attention in development agendas. It is even more prominently highlighted when it comes to SDG 12 Monitoring and Reporting.

Nonetheless, SDG 12 has been noted as having the most disparate need for progress across subregions, including South Asia. SDG 12 is a cross-cutting goal on ensuring sustainable consumption and production (SCP) and encourages the reduction of wasteful consumption and increased efficiency in production patterns by encouraging governments, businesses, and consumers. Accordingly, there is an utmost need to fill the gaps in SDG 12 monitoring and reporting.

Figure 1 Map of the South Asian Region
Source: www.un.org

1.3 Background on the study

This study was conducted in relation to the monitoring and reporting of SDG 12 and related targets (11) and indicators (13). When reviewing the 11 targets and 13 indicators of SDG 12 in the South Asian region, it was found that progress is still far from achieving the target by 2030. It is one of the least progressed targets in the Asia Pacific region, including South Asia (Asia and the Pacific SDG Progress Report 2021). The significant barrier to accessing accurate national and regional performance against targets and indicators is the lack of baseline information, including the capacity mapping on SDG 12.

To address these issues, a research-based activity has been undertaken by National Cleaner Production Centre (NCPC), Sri Lanka, an institution established by UNIDO in 2002, under the Ministry of Industry and Commerce to prevent pollution and conserve resources in industries by applying Cleaner Production (CP) practices. NCPC, Sri Lanka is a member of UNIDO/UNEP Resource Efficient and Cleaner Production

Network (RECP Net), a global family of 52 NCPCs. NCPC, Sri Lanka, developed the attributes of this study with support from SWITCH-Asia Regional Policy Advocacy Component (RPAC), funded by the European Union. The objective of the RPAC is to strengthen the dialogue at regional, sub-regional and national policies on Sustainable Consumption and Production (SCP) in selected countries from the Asia region, thereby contributing to green growth and reduction of poverty in Asian countries.

1.4 Structure of the Report

This report consists of seven main sections. Section 1 provides a comprehensive introduction, including the background of the study and SDGs, an overview of the SDG 12 targets and indicators, rationale, and the scope and objectives of the study. Section 2 defines the methodology of the work, which can be broadly classified into three areas: desktop research, capacity mapping, and data analysis. Section 3 provides an overview of SDG 12 targets & indicators and the status of monitoring & reporting in South Asia. Except for Afghanistan, this section includes every country in the South Asian region. Section 4 summarizes the SDG 12 attributes, including targets, indicators, national performance, capability, difficulties, and barriers. Finally, chapter 07 presents the conclusions and recommendations of the study.

1.5 Overview of SDG 12 Targets and Indicators

The global indicator framework for SDGs was developed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) and agreed upon at the 48th session of the United Nations Statistical Commission held in March 2017. The global indicator framework was later adopted by the General Assembly on 6 July 2017 and is contained in the resolution adopted by the General Assembly on Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development (UNstat).

The 17 SDGs are defined in 169 Targets. Progress towards these targets is agreed to be tracked by 232 unique Indicators. Regarding SDG 12, ensure sustainable consumption and production, 11 Targets and 13 Indicators have been defined. The 10-year framework of Programmes on Sustainable Consumption and Production is linked to all targets of SDG 12. The literature research shows that SDG 12 is connected to 14 other SDGs – making SCP the number one cross-cutting theme across the SDGs. According to the updated tier classification, all the indicators are defined as follows (UN stat);

Target		Indicator	Tier Classification
12.1		12.1.1	
IMPLEMENT THE 10-YEAR SUSTAINABLE CONSUMPTION AND PRODUCTION FRAMEWORK	Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries	Number of countries developing, adopting, or implementing policy instruments aimed at supporting the shift to sustainable consumption and production	Tier II
12.2		12.2.1	
SUSTAINABLE MANAGEMENT AND USE OF NATURAL RESOURCES	By 2030, achieve the sustainable management and efficient use of natural resources	Material footprint, material footprint per capita, and material footprint per GDP	Tier II
		12.2.2	
		Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	Tier I
12.3		12.3.1	
HALVE GLOBAL PER CAPITA FOOD WASTE	By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses	(a) Food loss index and (b) food waste index	Tier II
12.4		12.4.1	
RESPONSIBLE MANAGEMENT OF CHEMICALS AND WASTE	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release into air, water, and soil in order to minimize their adverse impacts on human health and the environment	Number of parties to international multilateral environmental agreements on hazardous waste and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement	Tier I
		12.4.2	
		(a) Hazardous waste generated	Tier II

Target		Indicator	Tier Classification
		per capita; and (b) proportion of hazardous waste treated by type of treatment	
12.5		12.5.1	
SUBSTANTIALLY REDUCE WASTE GENERATION	By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	National recycling rate, tons of material recycled	Tier II
12.6		12.6.1	
ENCOURAGE COMPANIES TO ADOPT SUSTAINABLE PRACTICES AND SUSTAINABILITY REPORTING	Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	Number of companies publishing a sustainability report	Tier II
12.7		12.7.1	
PROMOTE SUSTAINABLE PUBLIC PROCUREMENT PRACTICES	Promote public procurement practices that are sustainable, in accordance with national policies and priorities	Degree in sustainable public procurement policies and action plan implementation	Tier II
12.8		12.8.1	
PROMOTE UNIVERSAL UNDERSTANDING OF SUSTAINABLE LIFESTYLES	By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	The extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education, and (d) student assessment	Tier II

Target		Indicator	Tier Classification
12.a		12.a.1	
	Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production	Installed renewable energy-generating capacity in developing countries (in watts per capita)	Tier I
12 b		12.b.1	
	Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products	Implementation of standard accounting tools to monitor the economic and environmental aspects of tourism sustainability	Tier I
12.c		12.c.1	
	Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities	Amount of fossil-fuel subsidies (production and consumption) per unit of GDP	Tier I

2. Objectives

This study reveals the current situation of SDG 12 reporting and monitoring in South Asia and identifies the major barriers, challenges, and opportunities. This background report includes the capacity mapping, and the result of capacity mapping identifies the capacity development needs in South Asian countries. This report provides a better understanding of gaps and recommends a way forward in reporting and monitoring of SDG 12 in the South Asian region.

The specific objectives of the study are to:
   I.   Determine the current status of SDG 12 reporting and monitoring in South Asia,
   II. Assess the institutional and technical capacity for monitoring and reporting SDG 12 by conducting capacity mapping,
   III. Identify major barriers, challenges, and opportunities for SDG 12 reporting and monitoring in South Asia,
   IV. Identify the capacity development needs in South Asian countries to enable better monitoring and reporting on SDG 12.

3. Methodology

The methodology was designed to achieve the stated objectives of the study. Desktop research was conducted to collect the data and information regarding the current status of SDG 12 monitoring and reporting. A questionnaire was designed and distributed to identify the gaps in SDG 12 monitoring and reporting capacities. And key informative interviews were conducted for the same purpose. The feedback was reviewed, and findings were presented.

3.1 Desktop research on secondary data

Voluntary National Reviews (VNR)[1], Official websites (UNSTAT, UNSDG), published materials such as research papers, reports, and data documented on sustainable consumption and production were reviewed to identify the current monitoring and reporting status of SDG 12 in South Asian Countries. After reviewing those, the UNECE self-assessment template was fed accordingly, considering the availability of data and information.

The official websites of UNEP, United Nations Statistics Division (unstats.un.org), SDG Tracker (www.sdg.gov.bd), etc., and several online platforms such as SDG GATEWAY Asia Pacific (unescap.org), the Global SCP Projects Database of One Planet Network (https://www.oneplanetnetwork.org/ country-profiles) and SDG Hub (sdgs.un.org) were also reviewed to identify the current monitoring and reporting status of SDG 12 in South Asian Countries.

3.2 Conducting capacity mapping through questionnaires and key informative interviews

To assess the capacities of an organization, its entire performance and capabilities, tools, guidelines, and management processes were reviewed. For this purpose, the Capacity Development Assessment Tool (CDAT), developed by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) was used. The CDAT has been used to assess SDG 12 monitoring and reporting in South Asian countries as; it is designed to be comprehensive and flexible enough to use in a wide range of capacity development scenarios commonly and systematically, and it is adaptable to the user's circumstances so that only relevant elements of capacity are assessed.

In the baseline survey of the present study, CDAT has been adopted to assess the capacity needs at the indicator level, falling under the following three components (as illustrated in Figure 1):

Internal Attributes/Competencies: the abilities, characteristics, and properties of the network required to perform functions and achieve objectives

Resources: the materials, services, and other assets required to perform functions and achieve objectives

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[1] *Voluntary National Review (VNR) is a process through which countries assess and present progress made in achieving the global goals and the pledge to leave no one behind. The purpose of VNRs is to present a snapshot of where the country stands in SDG implementation, with a view to help accelerate progress through experience sharing, peer-learning, identifying gaps and good practices, and mobilizing partnerships*

Enabling Environment: the external working environment to perform functions and achieve objectives.
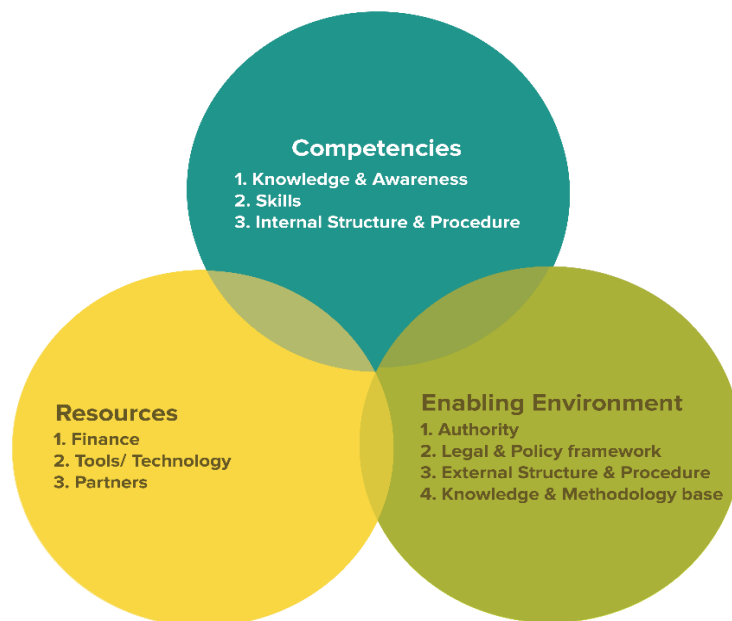
Figure 2: Spheres and elements of the capacity of the organization scale (Adopted from the CDAT framework)

A questionnaire and key informative interviews were developed based on the CDAT for elements under each three spheres, as follows;

Sphere 1-Competencies

1. Knowledge and Awareness

Under this element, the sufficient understanding of the respondents with regard to the concept of SDG 12 indicators was assessed indicator-wise.

2. Skills

The levels of data & information collection skills and analysis skills were asked indicator-wise from the respondents as open-ended questions in order to obtain the elaborated answers.

Under the data & information collection skill; the respondents were requested to fill in their skills to identify the data collection points and define the data that needs to be collected to monitor the indicator. Moreover, their strengths and weaknesses in these skills were examined.

Data and information analysis skills were assessed, including their ability to design a data analysis methodology, analyze & aggregate data and information with the monitoring capacity. In addition, they were asked to indicate their own strengths and weaknesses in each of these categories.

The organizational planning and management skills, data management skills, and reporting skills were interrogated as open-ended questions.

3. Internal Structure and Procedures

The internal structure for SDG 12 monitoring and reporting of the organization was assessed in relation to specific department(s)/ unit(s) arrangement, the sufficient staff and availability of mandates. Further, the respondents were asked to mention current challenges for these factors.

Regarding the internal procedures, the questions were developed to explain the existing rules, policies, protocols, and other mechanisms recognized and adhered to the SDG 12 monitoring and reporting.

Sphere 2-Resources

1. Finance

Under this element, respondents were asked to debrief whether the organization has sufficient finance sources in order to obtain sufficient human resources, develop human resources, cover the operational cost and procure sufficient tools and technology for SDG 12 monitoring and reporting.

2. Tools/Technology

The accessibility to the necessary IT hardware and software for data collection, data management, and data analysis were assessed with regard to SDG 12 monitoring and reporting.

3. Partners

Under this element, the respondents were asked to specify the relevant stakeholders in the government sector, private organizations, civil societies, academia, and development partners (UNEP, World Bank, UNDP) related to SDG 12 monitoring and reporting.

Moreover, it was asked to specify the organizational capacity to engage with stakeholders with relevance to the monitoring and reporting of SDG 12 in the following capacity items.

- Establish partners with the necessary expertise, resources, and contacts
- Mobilize the new partners
- Coordination for monitoring SDG 12 indicators
- Coordination for reporting SDG 12 indicators
- Identify and create connections with new potential partners as per the needs
- Financial support for monitoring and reporting of SDG 12 Indicators

Sphere 3-Enabling Environment

1. Authority

The organization's authority was assessed in terms of providing and enforcing orders, committing resources, and making recommendations or decisions with regard to SDG 12 monitoring and reporting. The respondents were asked to specify the authority scale and the challenges to the mentioned authority.

2. Legal and Policy Framework

Availability of national, regional, or international policies that enhance or do not constrain the efficiency and effectiveness of SDG 12 monitoring and reporting were assessed.

3. External Structure and Procedures

The external structure (i.e., the structure of the sector or network of which the Organization is a part) of the organization and their influence were assessed.

Moreover, their influence was determined through reporting and management relationships, external coordination and collaboration mechanisms, and the organization's mandates that overlap/conflict with other organizations.

The internal sector or network-level rules, policies, protocols, and other mechanisms were assessed under the external procedure, which influences the capacity of the organization for SDG 12 monitoring and reporting.

4. Knowledge and Methodology Base

Availability of a body of knowledge & methodology (guidance documents, standard, template, tools) that supports the organization for sufficient monitoring and reporting of SDG 12 were determined, including their prevailing gaps.

The questionnaire survey and interview were aimed to reach relevant respondents on SDG 12 monitoring and reporting. Potential respondents were selected from the government institutes such as National Statistics Office (NSO), focal ministries & line ministries, academia, think tanks, civil society organizations, and other key stakeholders from South Asian countries (*See section 3.1*). Around 35 responses were collected from interviews and questionnaire survey forms of the seven countries to acquire information.

3.3   Data Analysis and Interpretation

Qualitative data were collected from the desktop research and capacity mapping by comprehensive reviewing of published data, questionnaire survey, and information gathered from interviews in order to identify the current monitoring and reporting status of SDG 12 indicators. Received data was tabulated country-wise and indicator-wise and they were interpreted to appraise the current situation.

4. Overview of Findings – Monitoring and Reporting Status of SDG 12 in South Asia

4.1 Bangladesh

Bangladesh, located to the east of India on the Bay of Bengal, is a South Asian country. The country occupies an area of 143,998 km². Bangladesh is one of the most densely populated countries globally, with an estimated 171 million people (in 2021). Bangladesh maintained solid macro-economic stability, which contributed to a higher per capita income.

4.1.1 National SDG institutional structures

As a signatory of the 2030 Agenda for Sustainable Development, an inter-ministerial committee coordinates SDGs implementation and review. A high-level position created at the Prime Minister's Office heads the Committee as the Principal Coordinator (SDGs Affairs). Further, Bangladesh has adopted the "Whole-of-the-Society approach" to implement SDGs involving various stakeholders such as NGOs, INGOs, CSOs, development partners, private sector, business people, academia, professionals, local authority, Member of Parliament, and engaging other relevant stakeholders.

Regarding the Monitoring and Reporting of SDGs in Bangladesh, the government has conducted the SDGs Data Gap analysis, revealing that 155 indicators data were available in 2020. The government has finalized the Monitoring and Evaluation Framework to set targets of indicators of SDGs, and a web-based data repository system, SDGs tracker (sdg.gov.bd), has been launched to assist the monitoring of the implementation of SDGs in Bangladesh.

4.1.2 Current status of the SDG 12 in Bangladesh (Indicator wise Classification)

The following analysis is based on the questionnaire, literature review, and interviews. Based on the UNECE template, the reporting status and the quality of reporting are mentioned as follows;

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions /organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries							
12.1.1 Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production	Reported Some Data are available	MoEF					
12.2 By 2030, achieve the sustainable management and efficient use of natural resources							
12.2.1 Material footprint, material footprint per capita, and material footprint per GDP	Reported Some Data are available	MoEF, DoE BBS, SID	Annual	2000-2017			Estimated data are globally reported
12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	Reported Some data are available	MoEF, DoE BBS, SID	Annual	2000-2017	Environment Live / Global Material Flows Database	Type of product	Estimated data are globally reported

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions /organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses								
(a) Food loss index and (b) food waste index	Reported	Ministry of Food Ministry of Agriculture	One time period	2019	Food Waste Index Report 2021 / WESR	Food Waste Sector	Estimated data are globally reported
12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.								
12.4.1 Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement	**Montreal, Basel, Stockholm:** Reported **Rotterdam and Minamata:** Not Reported (Some data are available)	The Ministry of Environment, Forest and Climate Change (MoEF&CC) and the Department of Environment (DoE) Dhaka North City Corporation (DNCC) Dhaka South City Corporation (DSCC)	**Montreal, Basel, Stockholm:** Every 5 year	**Montreal, Basel, Stockholm:** 2015-2020	**Montreal:** World Environment Situation Room **Basel:** Environment Live **Stockholm:** Environment Live	**Montreal:** Activity, Age, Disability Status, Education level, Frequency, Location, Sex, Type of occupation, Type of product **Basel:** N/A Stockholm: N/A	**Montreal, Basel, Stockholm:** Estimated data are globally reported

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions /organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.4.2 (a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated, by type of treatment	Reported (Some data are available)	DoE (Department of Environment, , MoEF	Random	Hazardous waste-2004, 2005, 2007,2012 Municipal waste-2005, 2009,2014	UNSTATS/ WESR	Type of waste treatment, Activty	Estimated data are globally reported
12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse							
12.5.1 National recycling rate, tons of material recycled	Not Reported	N/A	N/A	N/A	N/A	N/A	N/A
12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle							
12.6.1 Number of companies publishing sustainability reports	Reported (Some data are available)	DoE, MOEF	One time period	2020	UNCTAD Global AI Data Source	Level of requirement	Estimated data are globally reported

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions /organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities							
12.7.1 Degree of sustainable public procurement policies and action plan implementation	Not Reported	Central Procurement Technical Unit (CPTU)	N/A	N/A	N/A	N/A	N/A
12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature							
12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment	Reported (Some data are available)		One time period	2020	Country reports on the implementation of the UNESCO 1974 Recommendation concerning Education for International Understanding, Co-operation, and Peace and Education relating to Human Rights and Fundamental Freedoms	N/A	Estimated data are globally reported

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions /organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production							
12.a.1 Installed renewable energy-generating capacity in developing countries (in watts per capita)	Reported		Annual	2000-2019	Renewable electricity generating capacity from IRENA's electricity capacity database. Population data from the United Nations World Population Prospects.		Estimated data are globally reported
12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products							
12.b.1 Implementation of standard accounting tools to monitor the economic and environmental aspects of tourism sustainability	Reported	The Ministry of Civil Aviation and Tourism (MoCAT)	Annual	2008-2019	Bangladesh Bureau of Statistics (BBS)	N/A	Estimated data are globally reported

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions /organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities							
12.c.1 Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels	Reported (Some Data are available)		Annual	2015-2019	IEA fossil fuel subsidies database, OECD.Stat-Inventory of Support Measures for Fossil Fuels and IMF Energy Subsidies Template (pre-tax calculations)	N/A	Estimated data are globally reported

4.1.3 Capacity Mapping

All data and information collected on capacity mapping via questionnaires and structured interviews which were conducted with officials in relevant line ministries or agencies, are classified into three broad categories: competencies, resources, and enabling environment.

4.1.3.1 Competencies

The relevant authorities of SDG 12 monitoring and reporting in Bangladesh have a sufficient understanding of 12.1.1 and 12.8.1 indicators. However, the knowledge is not sufficient to understand the other indicators in detail.

They have the skills to identify the data collection points for some indicators and the M&E officer is designated to modify the data collection process. Further, a data collection and monitoring process is developed to work on it. The relevant authorities have the skills to design the data analysis methodology to monitor the only above two indicators and under the log frame of data identification and process, data analysis methodology is extended for the ongoing process as well as for further procedure. The relevant institutions have the skills to analyze and aggregate the collected data and information to monitor only the SDG 12.1.1 and 12.8.1 indicators.

The relevant authorities have a sufficient level of planning and management skills; A central program development team and the evaluation framework are designed and monitored to design the strategy of SDG 12 monitoring and reporting and with regard to skills in resource planning, a combined team including program and finance. They have reported that the M&E team closely monitors and evaluates the implemented program to ensure accountability and transparency. Further, they have data management and reporting skills.

The relevant authorities in Bangladesh have specific departments and an adequate number of staff and a clear mandate relevant to SDG 12 monitoring and reporting. However, there is a lack of rules, policies, protocols, and other mechanisms that are recognized and adhered to the SDG 12 monitoring and reporting.

4.1.3.2 Resources

As per the questionnaire responses and the VNR assessment, they have sufficient finance sources to manage human resources with regard to SDG 12 monitoring and Reporting.

4.1.3.3 Enabling Environment

The participating organizations are mentioned that they have sufficient authority to give and enforce the orders, commit resources and make decisions regarding SDG 12 monitoring and Reporting. Moreover, they have only national policies to enhance the efficiency and effectiveness of the SDG 12 monitoring and Reporting.

4.2 India

India is the seventh-largest country and the second-most populous country in the world. It is a federal union comprising 28 states and eight union territories. The population is around 1.366 billion, and the GDP is 2.871 Trillion US $ by 2019 (World Bank 2022).

India has played an important role in shaping the Sustainable Development Goals (SDGs). This has meant that the country's national development goals are mirrored in the SDGs. As such, India has been effectively committed to achieving the SDGs even before they were fully crystallized as one of the forty countries that have volunteered to take part in the Voluntary National Reviews (VNRs) at the High-Level Political Forum (HLPF) 2017.

4.2.1 National SDG institutional structures

Govt. of India   strongly committed to Agenda 2030, including SDGs. National Institution for Transforming India (NITI Aayog) mandated coordinating work on SDGs. Ministry of Statistics and Programme Implementation (MoSPI) is the National Indicator Framework consultation with Ministries/States. The Parliament of India has taken exemplary initiatives to propel the SDG agenda forward. The Lower House of the Parliament, for instance, has organized several discussions on the SDGs with parliamentarians from both Houses as part of the Speaker's Research Initiative.

4.2.2 Current status of the SDG 12 in India (Indicator wise Classification)

As well as all other SDGs, India has a key concern on SDG 12 and its indicators. India supports the 10-Year Framework of Programmes on Sustainable Consumption and Production (10YFP), a global commitment to accelerate the shift towards sustainable consumption and production. The country is particularly active in 10YFP programme areas, such as sustainable buildings and construction, sustainable tourism, sustainable food systems, consumer information, and sustainable lifestyles.

Based on the questionnaire, literature review, and interviews focusing on India and its monitoring and reporting status of SDG 12 following analysis to showcase the reporting status and the quality of reporting can be displayed.

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries							
12.1.1 Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production	Reported	MOEFCC	One-time reporting	2020	10YFP / WESR	No	Estimated data are globally reported
12.2 By 2030, achieve the sustainable management and efficient use of natural resources							

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.2.1 Material footprint, material footprint per capita, and material footprint per GDP	Reported (Some data is available)	MOSPI	N/A	N/A	N/A	N/A	N/A
12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	Reported		Annual	2017	Environment Live / Global Material Flows Database	Yes	Estimated data are globally reported
12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses							
(a) Food loss index and food waste index	Reported (Some data are available)	Department of Agriculture, Cooperation and Farmer Welfare, Ministry of Agriculture	N/A	N/A	N/A	N/A	N/A

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process	
		and Farmers Welfare Ministry of Consumer Affairs, Food and Public Distribution						
12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment								
12.4.1 Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement	Reported	MOEFCC	Two times	2015 and 2020 Minamata Convention – 2020 only	Environment Live	Yes	Estimated data are globally reported	

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.4.2 (a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated, by type of treatment	Reported

(Some data are available) | MOEFCC | N/A | N/A | N/A | N/A | N/A |
| 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse | | | | | | | |
| 12.5.1 National recycling rate, tons of material recycled | Reported

(Some data are available) | MOHUA | N/A | N/A | N/A | N/A | N/A |
| 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle | | | | | | | |

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.6.1 Number of companies publishing sustainability reports	Reported	Ministry of Corporate Affairs	One time	2020	UNCTAD Global AI Data Source	Yes	Estimated data are globally reported
12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities							
12.7.1 Degree of sustainable public procurement policies and action plan implementation	Not Reported	Ministry of Finance	N/A	N/A	N/A	N/A	N/A
12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature							

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment	Reported (Some data is available)	Department of School Education and Literacy, Ministry of Education	N/A	N/A	N/A	N/A	N/A
12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production							
12.a.1 Installed renewable energy-generating capacity in developing countries (in watts per capita)	Reported (Some data are available)	MNRE	N/A	N/A	N/A	N/A	N/A

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products							
12.b.1 Implementation of standard accounting tools to monitor the economic and environmental aspects of tourism sustainability	Reported	Ministry of Tourism	Annual	2008 - 2019	Tourism Satellite Accounts, Ministry of Tourism, Government of India	No	Estimated data are globally reported
12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities							

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.c.1 Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels	Reported	MOF and MOSPI	Annual	2015 -2019	IEA fossil fuel subsidies database, OECD.Stat-Inventory of Support Measures for Fossil Fuels and IMF Energy Subsidies Template (pre-tax calculations)	No	Estimated data are globally reported

4.2.3 Capacity Mapping

India is observed to have a confident level of capacities on almost all the competencies related to all SDG 12 monitoring and reporting activities throughout all the indicators. Even some of the indicators have not been globally reported yet; they have been competent enough to achieve the reporting and monitoring of national indicators up to some extent.

4.2.3.1 Competencies

Based on the observations and responses to the given questionnaire, India's monitoring and reporting authorities have a sufficient understanding of the concept of all SDG 12 indicators. And also, they possess skills to identify the data collection points, define the data that needs to be collected to monitor the indicator, design the data analysis methodology (develop a model, formula, coding, etc) to monitor SDG 12 indicators and analyze and aggregate the collected data and information to monitor the following SDG 12 indicators. Yet they suggest having large survey capacities and budgets to define the procedures and tools to collect data from defined data collection points.

Planning and management skills, data management skills, and reporting skills are in a sufficient level of adequacy. All the skills are inherited by the interdisciplinary teams and the Information and Technology (IT) support by relevant departments related to SDG monitoring and Reporting. Yet financial resources and government buy-in play key roles in resource planning (human resources and financial resources) to operate the SDG 12 monitoring and reporting. Under the data reporting skills, the needed skills to summarize and aggregate the collected and analyzed data to report the SDG 12 indicators are sufficient. But government buy-in is needed, like large budgets and operationalization for new data sets.

The main two monitoring and reporting bodies for SDG 12 in India are MOSPI and NITI Aayog. Hence, they have specific departments, sufficient staff, clear mandates to fulfill the job roles, coordination, and necessary support.

4.2.3.2. Resources

Financial backup to obtain sufficient human resources, develop human resources and procure sufficient tools and technology for SDG 12 monitoring and reporting is provided by the projects with funding support, mostly initiated by development agencies. Tools and technology are also provided sufficiently by those projects related to SDG 12 monitoring and reporting.

Different kinds of stakeholders are engaged in SDG 12 Monitoring and Reporting. Some government sector stakeholders like the Ministry of Environment, Forest and Climate Change (MOEFCC), National Institution for Transforming India (NITI), Ministry of Statistics and Programme Implementation (MOSPI), Ministry of Agriculture (MOA), Ministry of Finance (MOF), Ministry of Tourism (MOT), Ministry of Education (MOE), Ministry of Jal Shakti (MOJS), Ministry of Mines (MOM), Ministry of Corporate Affairs (MCA) and State Governments, private organizations, civil societies, academia, and development partners like UN agencies and world bank. And some organizations have the necessary capacity to engage with stakeholders to establish partners with the necessary expertise resources, monitor SDG 12 indicators, coordinate for Reporting SDG 12 indicators and identify and create connections with new potential partners as per the needs.

4.2.3.3. Enabling Environment

There are defined organizations established to give and enforce orders, commit resources, and make recommendations or decisions related to SDG 12 monitoring and reporting in India. But no national, regional, or international policy is available to enhance or at least not constrain SDG 12 monitoring and reporting efficiency and effectiveness. Depending on the type of project, external structures help the SDG 12 monitoring and reporting activities. GIF and NIF are the main knowledge and methodology references apart from a critical look at the two methodologies (Supporting India on SDG 12 Monitoring and Reporting 2021.

4.3 Nepal

Nepal is a middle-sized country in South Asia with an approximately 30 million population. It is a country with a diverse geography. Nepal's Gross Domestic Product (GDP) was $33.66 billion in 2019. (World Bank). Due to the country's equity-based approach and aspirations for rapid development, it is one of the world's fastest-growing economies.

Through its integrated approach and the principle of 'Leaving no one behind,' Nepal is pursuing the 2030 Agenda for Sustainable Development with a strong national commitment to bring about transformative change in the country. The 15th Development Plan (2019/20-2023/24) has mainstreamed the SDGs, guided by the overarching national aspiration of 'Prosperous Nepal, Happy Nepali.' The National Planning Commission (NPC) at the national level and policy and planning commissions at the provincial levels have been integrating SDGs into the policies and plans of the government. (National Planning Commission [NPC], 2015)

Nepal has developed the SDGs Status and Roadmap 2016-2030, SDGs Needs Assessment, Costing and Financing Strategy, and SDGs Localization Guidelines, which outline baselines, targets, implementation, and financing strategies for each SDG.

4.3.1 National SDG institutional structures

Nepal is a pioneering country in terms of nationalizing the SDGs. The majority of the SDG agendas align with national goals. Nepal has established the institutional frameworks necessary for the effective implementation of the SDGs at the national, regional, and local levels. However, not all provinces and municipalities have adopted the concept (Rahman et al., 2020).

The National Planning Commission (NPC) served as the government's focal point and produced SDGs Status and Road Map 2016-2030. It is identified that 479 national indicators set milestones and targets for the 2030 Agenda and the Sustainable Development Goals (SDGs). The prime minister chaired the Steering Committee to implement and monitor the SDGs at the highest level. (VNR 2020, Nepal). NPC has developed an "SDG data portal" where province-wise data are available, and a separate webpage (http://sdg.npc.gov.np) on SDGs has been launched.

The Government of Nepal had formed two High-Level Committees and nine Thematic Working Groups in 2017 to implement the SDGs by 2030. Nine Thematic Working Groups chaired by NPC Members supported the two committees above.

Provincial steering committees coordinate and facilitate the provinces' implementation of the SDGs. Similarly, the thematic working groups have been reorganized into seven groups, each of which is chaired by a member of the National Planning Commission. These seven committees are intended to report to the Implementation and Coordination Committee on a trimester basis. Economic Development Committee is the responsible committee for SDG 12.

Civil society organizations (CSOs) in Nepal have formed a joint forum called the Nepal SDGs Forum, which the Nepal NGO Federation supports. The forum's purpose is to facilitate collaboration on SDG implementation.

4.3.2 Current status of the SDG 12 in Nepal (Indicator wise Classification)

The following analysis is based on questionnaire responses, a literature study, and structured interviews. The status and quality of SDG 12 reporting are assessed using the UNECE Self-assessment template for countries about the availability of relevant indicators.

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions/ organizations	Frequency of Data Collection	Time Coverage	Data Sources Transparent Process	Data disaggregation available	Transparent Process
12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries							
12.1.1 Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production	Not Reported	Ministry of Forests and Soil Conservation / Ministry of Population and Environment/ MOEN	N/A	N/A	N/A	N/A	N/A
12.2 By 2030, achieve the sustainable management and efficient use of natural resources							

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions/ organizations	Frequency of Data Collection	Time Coverage	Data Sources Transparent Process	Data disaggregation available	Transparent Process
12.2.1 Material footprint, material footprint per capita, and material footprint per GDP	Reported (Some data are available)	Ministry of Forests and Soil Conservation	N/A	N/A	N/A	N/A	N/A
12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	Reported	Ministry of Forests and Soil Conservation	Annual	2000 - 2017	Environment Live / Global Material Flows Database	Disaggregated by Type of Product	Estimated data are globally reported
12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses							

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions/ organizations	Frequency of Data Collection	Time Coverage	Data Sources Transparent Process	Data disaggregation available	Transparent Process
(a) Food loss index and (b) food waste index	Reported	Ministry of Agriculture and Livestock Development	One-time reported	2019	Food Waste Index Report 2021 / WESR	Disaggregated by the Food waste sector Households/ Out-of-home consumption/ Retail	Estimated data are globally reported
12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment							

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of Data Collection	Time Coverage	Data Sources Transparent Process	Data disaggregation available	Transparent Process
12.4.1 Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement	Reported	Ministry of Population and Environment	Every five years	2015, 2020	World Environment Situation Room/ Environment Live	Disaggregated by Activity, Age, Disability status, Education level, Location, Quantile, Sex, Type of occupation, Type of product	Country data globally reported

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions/ organizations	Frequency of Data Collection	Time Coverage	Data Sources Transparent Process	Data disaggregation available	Transparent Process
12.4.2 (a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated, by type of treatment	Reported only municipal waste and Electronic waste data (some data are available)	Ministry of Population and Environment	Random	Municipal waste-2012-2019, Electronic waste generation – 2017	UNSTATS /UNSD/ WESR	Disaggregated by type of waste treatment and waste generation by activity	Country data globally reported
12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse							
12.5.1 National recycling rate, tons of material recycled	reported	Ministry of Population and Environment /The Central Bureau of Statistics (CBS)	One time	2017	N/A	N/A	N/A

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of Data Collection	Time Coverage	Data Sources Transparent Process	Data disaggregation available	Transparent Process

Indicators	Reporting Status		Quality of the Reporting				
12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle							
12.6.1 Number of companies publishing sustainability reports	Reported	Ministry of Industry	One time reported	2020	UNCTAD Global AI Data Source	Segregated by the level of requirement	Global monitoring data, globally reported
12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities							
12.7.1 Degree of sustainable public procurement policies and action plan implementation	Not Reported	OPMCM, Ministry of Finance	N/A	N/A	N/A	N/A	N/A
12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature							

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of Data Collection	Time Coverage	Data Sources Transparent Process	Data disaggregation available	Transparent Process	
12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment	Reported (Some data are available)	Ministry of Education, Science and Technology/ Ministry of Population and Environment	One time reported	2020	Country reports on the implementation of the UNESCO 1974 Recommendation concerning Education for International Understanding, Co-operation, and Peace and Education relating to Human Rights and Fundamental Freedoms	No	Country data globally reported	
12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production								

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of Data Collection	Time Coverage	Data Sources Transparent Process	Data disaggregation available	Transparent Process
12.a.1 Installed renewable energy-generating capacity in developing countries (in watts per capita)	Reported (Some data are available)		Annual	2000-2019	Renewable electricity generating capacity from IRENA's electricity capacity database. Population data from the United Nations World Population Prospects.	No	Globally monitoring data
12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products							
12.b.1 Implementation of standard accounting tools to monitor the economic and environmental aspects of tourism sustainability	Reported (Some data are available)	Ministry of Culture, Tourism and Civil Aviation (MoTCA)	Annual	2008-2018	Ministry of Culture, Tourism and Civil Aviation (MoTCA)	No	Country data globally reported

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of Data Collection	Time Coverage	Data Sources Transparent Process	Data disaggregation available	Transparent Process
12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities.							
12.c.1 Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels	Not reported	Ministry of Forest and Soil Conservation,	N/A	N/A	N/A	N/A	N/A

4.3.3 Capacity Mapping

All data and information collected on capacity mapping via questionnaires and structured interviews which were conducted with officials in relevant line ministries or agencies, are classified into three broad categories: competencies, resources, and enabling environment.

4.3.3.1 Competencies

The relevant authorities of Nepal have knowledge and understanding of SDG 12 targets and indicators. But the knowledge is not sufficient to understand the indicators in detail. The relevant organizations of Nepal have the skills to define the data that needs to be collected to monitor only some indicators. The skills to define the procedure and tools to collect data from defined data collection points are significantly less. If the established methodologies of the indicators are transparent, the existing skills are fairly enough for the monitoring and reporting of SDG 12. For example, 12.4.1 reporting under multilateral environmental agreements on hazardous waste and chemicals was easily monitored and reported with transparent methodology and data availability.

The development of data management skills is essential when creating a data management plan. The level of skills in data management is insufficient to report on all of the indicators. There is limited access to worldwide success stories in data management, which is vital for self-learning. Some indicators of SDG 12 require the ability to summarize and aggregate the data that has been collected and analyzed. These skills are available to a certain extent. Designing the SDG 12 monitoring and reporting strategies is a complicated process for several indicators. There is less awareness of globally established methodologies for calculating the indicators. As a result, existing capacities for developing and designing strategies are insufficient. While Nepal's resource planning skills are adequate, the country's human and financial resources are not adequate to manage the SDG 12 monitoring and reporting system. Monitoring the SDGs' progress requires the compilation and analysis of data on various indicators and subject areas and may entail the development of new data collection methods. Therefore, it is critical to locate more disaggregated data in addition to national-level data and the necessary skills for staff development.

When considering the internal structure, many organizations have specific departments and unit(s) for SDG 12 monitoring and reporting. The required staff numbers necessary to fulfill the role of monitoring and reporting SDG 12 are not adequate. As part of the Internal Procedures, it is important to note that various current legislation, policies, and protocols are recognized and followed to ensure the effectiveness of SDG 12 monitoring and reporting effectiveness. However, awareness of such technologies is still restricted. Additionally, the country has issued "SDG codes" to all programs and activities supported by the national budget to make it easier to track how appropriations contribute to the SDGs over time.

4.3.3.2 Resources

Financial support for SDG 12 monitoring and reporting is highlighted as a critical requirement based on the study. Financial resources are not being allocated in accordance with SDG 12 in Nepal. However, a sizable sum was spent on the Ministry of Agriculture and Livestock Development, which was designated as climate-related. It is important to note that progress toward achieving national goals for several SDGs, including SDGs 1, 2, 3, 5, and 12, is contingent upon progress toward SDG 13. Financial resources are identified as a critical requirement of SDG 12 monitoring and reporting, including the acquisition of sufficient human resources, development of human resources through adequate training of existing staff, operational costs, and procurement of sufficient tools and technology for SDG 12 monitoring and reporting. Accountability at the ministry level for their programs and expenditures has been established in order to accomplish the SDGs. However, government policies, programs, and annual budgets are not aligned with

national Sustainable Development Goals, and coordination and communication across government departments are exceedingly limited.

The achievement of SDG 12 will require cross-sector collaboration as well as a robust national framework that is integrated into sector policies, plans, and business practices. There is a gap in collaboration among different stakeholders, including governments, civil society, and the private sector. Since it is a challenge that proper collaboration has yet to be met, multiple ministries and agencies, including those in provinces, urban and rural municipalities, must collaborate in order to achieve the environmental dimensions of the Sustainable Development Goals. Community-based organizations, NGOs, and international government organizations (INGOs) have been actively involved with the SDG 12 monitoring and reporting in Nepal.

4.3.3.3 Enabling Environment

There are no integrated SCP policies on the environment of achieving the SDGs as a whole. Apart from manufacturing standards, SDG 12 regulations are primarily concerned with agriculture. Additionally, the absence of policies and regulations aimed at SDG reporting and monitoring contributes to the under-monitoring of SDG 12.

The National Planning Commission claims to have integrated and aligned SDGs in the Fifteenth Plan. NPC serves as the government's focal point for the 2030 Agenda and the Sustainable Development Goals (SDGs). The SDGs Steering Committee, which the Prime Minister chairs, shows the highest-ranking collaboration. The SDGs Coordination and Implementation Committee is chaired by the Vice-Chairman of the National Planning Commission. There are nine SDs in the NPC, each of which is chaired by a member of the NPC. Other government agencies have also begun the process of establishing their own systems to ensure that they are consistent with and streamline the SDGs. Most provincial governments have established a planning commission, also known as policy and planning commissions, to coordinate the Sustainable Development Goals.

4.4 Bhutan

Bhutan is a small country in the South Asian region with approximately 38,394 km². It is a landlocked country in the Eastern Himalayas, located between China and India. Nepal and Bangladesh are located in close proximity to Bhutan but do not share a land border. The population is around 727,145 and the GDP is USD 2.2 billion. The literacy rate is about 71.4%.

4.4.1 National SDG institutional structures

Gross National Happiness Commission Secretariat (GNHCS) is the main focal point for SDG in Bhutan. Under that commission, SDG working Committee and VNR task force are handled, and implementing agencies are there to implement the decisions.

4.4.2 Current status of the SDG 12 in Bhutan (Indicator wise Classification)

According to the voluntary National Report of Bhutan published in 2018, SDG 12 Responsible Consumption and Production, the progress status is on track. Several actions have already been b taken to achieve the goal timely and precisely. Those actions can be listed as follows;

- The sustainable Consumption & Production Action Plan was initiated
- Paperless guidelines developed and initiatives under implementation
- Sustainable tourism practices in place, such as green hotel guidelines developed
- SCP incorporated in secondary schools, vocational institutes and non-formal education curriculum

However, some exceptional activities have been identified. Such as, emissions from waste increased by 247.45 percent between 2013 and 2016.

While initiatives to address SCP are underway, challenges remain in terms of inadequate research and development capacity, specific initiatives to promote sustainable production in industries, construction, agriculture, and lack of policy and legal framework.

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries							
12.1.1 Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production	Reported		One-time reporting	2020	10YFP / WESR	No	Estimated data are globally reported
12.2 By 2030, achieve the sustainable management and efficient use of natural resources							

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.2.1 Material footprint, material footprint per capita, and material footprint per GDP	Reported (Some data are available)		Annual	2000 -2017			Estimated data are globally reported
12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	Reported (Some data are available)		Annual	2000- 2017	Environment Live / Global Material Flows Database	Yes	Estimated data are globally reported
12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses							
(a) Food loss index and food waste index	Reported		One time	2019			Estimated data are globally reported

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment							
12.4.1 Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement	Reported		Two times	2015 and 2020 Montreal and Basel only	Environment Live	Yes	Estimated data are globally reported
12.4.2 (a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated, by type of treatment	Reported		Onetime	2019		Yes	Estimated data are globally reported

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse							
12.5.1 National recycling rate, tons of material recycled	Reported (Some data area available)		One time	N/A	N/A	N/A	N/A
12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle							
12.6.1 Number of companies publishing sustainability reports	Reported		One time	2020	UNCTAD Global AI Data Source	Yes	Estimated data are globally reported
12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities							

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.7.1 Degree of sustainable public procurement policies and action plan implementation	Reported						Estimated data are globally reported
12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature							
12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment	Not Reported		N/A	N/A	N/A	N/A	N/A

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production							
12.a.1 Installed renewable energy-generating capacity in developing countries (in watts per capita)	Reported (Some data are available)	MNRE	Annual	2000- 2019		No	Estimated data are globally reported
12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products							

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions / organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.b.1 Implementation of standard accounting tools to monitor the economic and environmental aspects of tourism sustainability	Reported	Ministry of Tourism	Annual	2009 - 2019		No	Estimated data are globally reported
12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities							
12.c.1 Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels	Not Reported		N/A	N/A	N/A	N/A	N/A

4.4.3 Capacity Mapping

Bhutan is observed to have a fairly confident level of capacities on some of the indicators in SDG 12. Even though some of the indicators have not been globally reported yet, they have been competent enough to achieve the reporting and monitoring of some indicators.

4.4.3.1 Competencies

Based on the observations and responses to the given questionnaire, Bhuta's monitoring and reporting authorities have a fair but not sufficient understanding of the concept of all SDG 12 indicators. And also possess less skills in identifying the data collection points, defining the data that needs to be collected to monitor the indicator, and designing the data analysis methodology (develop a model, formula, coding, etc.) to monitor SDG 12. Mainly lack of expertise, skills, limited knowledge, inadequate sectoral coordination, lack of data, and limited human and technical capacity can be listed as the main gaps in competencies. Data management skills, planning, and management skills are not sufficient, but skills to summarize and aggregate the collected and analyzed data to report on SDG12 indicators are sufficient.

4.4.3.2. Resources

The availability of finance, tools, and technology is insufficient. Separate financial allocations are not available for SDG 12 monitoring and reporting. As a technological resource, Dashboard to Enhance Well being of All (DEWA dashboard) provides a database for all the data related to SDGs in Bhutan. Shareholders are there to be involved in SDG 12 monitoring and reporting.

4.4.3.3. Enabling Environment

There are defined organizations established to give and enforce orders, commit resources, and make recommendations or decisions related to SDG 12 monitoring and reporting in Bhutan. Depending on the type of project, external structures help with the activities related to SDG 12 monitoring and reporting. The proposal has been developed to create a policy in SCP. Lack of explicit policy instruments is observed.

4.5 The Maldives

The Maldives is a Small Island Developing State (SIDS) that is confronted with a number of severe economic, social, and environmental issues. With 1190 small tropical islands in total, the country comprises just 358 of which are used for commercial operations and human settlement. The country has 557,426 people, which is a tiny number. The rise of the country's tourism industry has been a significant driver of the country's progressive shift over the previous few decades. Tourism is expected to continue to grow in the coming years.

The Maldives is the only country in South Asia that has met five of the eight goals of the MDG+ well ahead of time. Since the SDGs were added to the national development plan, Maldives has taken many steps to make sure the 17 SDGs are implemented, achieved, and monitored. The goals of the SDGs are to make sure everyone has equal access to wealth and services, as well as a standard of quality of life that everyone can afford. This means that the goal is to "leave no one behind."

4.5.1 National SDG institutional structures

The Maldives has established separate committees, such as the Sustainable Development Goals Coordination and Implementation Committee.

The President's Office has tasked the Ministry of Environment and Energy (MEE) with overseeing the SDGs' implementation. MEE has developed a Sustainable Development Goals Division (SDGs Division). It is tasked with coordinating, monitoring, and reporting on the SDGs' implementation. The National Ministerial Coordination Committee (NMCC) offers overarching political support and policy direction for the implementation of Sustainable Development Goals (SDGs). Additionally, the SDG division serves as the Secretariat for each SDG Committees. Line ministries implement the Sustainable Development Goals, government agencies, civil society organizations, and autonomous institutions accompanying the Ministerial Coordination Committee.

The SDG Technical Committee is divided into five clusters, each responsible for a specific SDG, with SDG 12 falling under the economic development committee.

4.5.2 Current status of the SDG 12 in the Maldives (Indicator wise Classification)

The following analysis is based on questionnaire responses, a literature study, and structured interviews. The status and quality of SDG 12 reporting are assessed using the UNECE Self-assessment template for countries about the availability of relevant indicators

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries							
12.1.1 Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production	Reported	Ministry of Fisheries and Agriculture (Agriculture)	One time reported	2020	10YFP / WESR	Disaggregated by Policy instruments	Country data globally reported
12.2 By 2030, achieve the sustainable management and efficient use of natural resources							

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.2.1 Material footprint, material footprint per capita, and material footprint per GDP	Reported (some data are available)	Ministry of Environment and Energy	Annual	2000-2017	N/A	N/A	Estimated data are globally reported
12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	Reported (Some data are available)	Ministry of Environment and Energy	Annual	2000-2017	Environment Live / Global Material Flows Database	Disaggregated by Type of Product	Estimated data are globally reported
12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses							

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
(a) Food loss index and (b) food waste index	Reported	Ministry of Fisheries and Agriculture (Agriculture)	One-time reporting	2019	Food Waste Index Report 2021 / WESR	Disaggregated by Food waste sector Households/ Out-of-home consumption/ Retail	Estimated data are globally reported
12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment							

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.4.1 Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement	Reported (Minamata Convention is not reporting)	Ministry of Environment and Energy	Every 5 years	2015, 2020	World Environment Situation Room/ Environment Live	Disaggregated by Activity, Age, Disability status, Education level, Location, Quantile, Sex, Type of occupation, Type of product	Country data globally reported

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.4.2 (a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated, by type of treatment	Reported only municipal waste and total waste generation	Ministry of Environment and Energy	Random	Municipal waste- 2000-2014, Total waste generation – 2002-2014	UNSTATS / WESR	Disaggregated by type of waste treatment and waste generation by activity	Country data globally reported
12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse							
12.5.1 National recycling rate, tons of material recycled	Not reported	Ministry of Environment and Energy	N/A	N/A	N/A	N/A	N/A

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle							
12.6.1 Number of companies publishing sustainability reports	Reported	Ministry of Environment and Energy	One time reported	2020	UNCTAD Global AI Data Source	Segregated by level of requirement	Global monitoring data, globally reported
12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities							
12.7.1 Degree of sustainable public procurement policies and action plan implementation	Not Reported	Ministry of Finance and Treasure	N/A	N/A	N/A	N/A	N/A

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature							

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment	Reported (Some data are reported)	Ministry of Education	One time reported	2020	Country reports on the implementation of the UNESCO 1974 Recommendation concerning Education for International Understanding, Co-operation and Peace and Education relating to Human Rights and Fundamental Freedoms	No	Country data globally reported

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production							
12.a.1 Installed renewable energy-generating capacity in developing countries (in watts per capita)	Reported	Ministry of Environment and Energy	Annual	2000-2019	Renewable electricity generating capacity from IRENA's electricity capacity database. Population data from the United Nations World Population Prospects.	No	Globally monitoring data
12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products							

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Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.b.1 Implementation of standard accounting tools to monitor the economic and environmental aspects of tourism sustainability	Reported	Ministry of Tourism	Annual	2008-2018	National Bureau of Statistics	No	Country data globally reported
12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities							

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.c.1 Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels	Not reported	Ministry of Environment and Energy	N/A	N/A	N/A	N/A	N/A

4.1.3 Capacity Mapping

All data and information collected on capacity mapping via questionnaires and structured interviews which were conducted with officials in relevant line ministries or agencies, are classified into three broad categories: competencies, resources, and enabling environment.

4.1.3.1 Competencies

Maldives' relevant authorities are familiar with and comprehend the SDG 12 targets and indicators. However, knowledge alone is insufficient to comprehend the indicators in full.

The skills to define procedures and tools for data collecting from specific data collection points are extremely limited. Some of the core skills as data management skills, analytical skills, are not adequate and need to be enhanced within the organizations. Currently, key members of the government are not actively participating in organizing SDG-related discussions and planning activities. External advisors have been hired by the SDGs Division to facilitate such meetings.

Monitoring and reporting on SDG 12 is a time-consuming task for a number of indicators. The Maldives' data shortages are most pronounced in the environment and agriculture sectors, which include SDG 12. Disaggregated data by sex, nationality and geographic location are not yet available.

The Maldives has aligned the SDGs with their local development plans. Consider the Maldives' Internal Procedures, which identify and adhere to a number of current rules and regulations and protocols, all of which are important to ensure the country's SDG 12 monitoring and reporting is effective. However, such technologies are only known to a limited percentage of the population.

Additionally, the country has assigned "SDG codes" to all programs and activities funded by the national budget to enable tracking of how appropriations contribute to attaining the SDGs easier over time.

4.1.3.2 Resources

As a middle-income country, the Maldives has struggled to secure adequate financial support, particularly for SDG 12 monitoring and reporting. The relevant institutional members lack a solid understanding of the processes and modifications associated with national budgeting. The allocation of the staff in relevant ministries to fulfil the role of monitoring and to report SDG 12 is not adequate.

Collaboration between many parties, including governments, civic society, and the commercial sector, is lacking. Given the fact that proper collaboration has yet to be achieved, many ministries and agencies, including those in provinces, urban and rural municipalities, must collaborate for SDG 12 monitoring & reporting in the Maldives

However, significant work has been accomplished under the National Bureau of Statistics (NBS) direction in mapping existing data availability to SDG indicators and organizing existing baseline information to the indicators.

4.1.3.3 Enabling Environment

An entire section on the Sustainable Development Goals is included in the Government's Manifesto. In the case of SDG 12, however, the level of ambition and comprehensiveness are less obvious. Maldives lacks SCP policy, but the Climate Change Policy Framework 2015 (MCCPF) is one of the key policy documents.

At the local council level, SDG-based planning and support have been implemented. However, SDG 12 receives relatively little attention. Maldives has established various divisions to oversee and account for SDG monitoring and accountability. The divisions are responsible for coordinating, monitoring, and reporting on the country's progress toward meeting the Sustainable Development Goals. Foreign ministries and planning units have established accountability mechanisms to monitor and track the implementation of the Sustainable Development Goals. Additionally, they will assess progress and work in collaboration with their respective line ministries. Though the institutional framework is set up, the collaboration is still insufficient. Lack of ownership and accountability amongst line ministries and lack of coordination amongst SDGs implementation lead agencies for reporting and monitoring progress on SDGs.

There is considerable room for improvement in the Maldives' methodology and knowledge base.

4.6 Pakistan

Pakistan, officially the Islamic Republic of Pakistan is a country in South Asia. The country occupies an area of 881,913 km^2. Pakistan is one of the most highly populated countries in the world with a population of almost 220 million (in 2021). Pakistan maintained strong macro-economic stability, which contributed to a higher per capita income. (VNR)

4.6.1 National SDG institutional structures

Pakistan declared its commitment to the 2030 Agenda for Sustainable Development by adopting the SDGs as its own national development agenda through a unanimous National Assembly Resolution in 2016. The Pakistan Government conducted a discussion on the post-Millennium Development Goals (MDGs) with all stakeholders to coordinate and strengthen efforts at federal and provincial levels to achieve sustainable development and poverty reduction targets in Pakistan. Further, the seven pillars of Vision-2025 are fully aligned with the SDGs, providing a comprehensive long-term strategy for achieving inclusive growth and sustainable development. However, according to the NAP (2017), related ministries, agencies, and departments are recommended to formulate their own methodologies and projects for the implementation of short, medium, and long-term action plans that exhibit ensuring of the SCP patterns.

4.6.2 Current status of the SDG 12 in Pakistan (Indicator wise Classification)

The following analysis is based on the questionnaire, literature review, and interviews. Based on the UNECE template, the reporting status and the quality of reporting are mentioned as follows

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions /organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries							
12.1.1 Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production	Reported		One time period	2020	10YFP / WESR	Policy instruments	Estimated data are globally reported
12.2 By 2030, achieve the sustainable management and efficient use of natural resources							
12.2.1 Material footprint, material footprint per capita, and material footprint per GDP	Reported Some data are available	MOWR WAPDA MOCC SDG Units, MoPD&SI Ministry of Industries and Production Provincial: SDG Units/ Planning and	Annual	2000-2017			Estimated data are globally reported

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions /organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
		development Departments					
12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	Reported Some data are available		Annual	2000-2017	Environment Live / Global Material Flows Database	Type of product	Estimated data are globally reported
12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses							
(a) Food loss index and (b) food waste index	Reported		One time period	2019	Food Waste Index Report 2021 / WESR	Food Waste Sector	Estimated data are globally reported
12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment							

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions /organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.4.1 Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement	**Montreal, Rotterdam, Basel, Stockholm:** Reported Only Minamata is not Reported		Montreal, Rotterdam Basel, Stockholm: Every 5 year	Montreal, Rotterdam, Basel, Stockholm 2015-2020	**Montreal:** World Environment Situation Room **Rotterdam:** Environment Live **Basel:** Environment Live **Stockholm:** Environment Live	**Montreal:** Activity, Age, Disability Status, Education level, Frequency, Location, Sex, Type of occupation, Type of product **Rotterdam:**N/A **Basel:** N/A Stockholm: N/A	**Montreal, Rotterdam, Basel, Stockholm:** Estimated data are globally reported
12.4.2 (a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated, by type of treatment	Not Reported	MOWR WAPDA MOCC SDG Units,	N/A	N/A	N/A	N/A	N/A

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions /organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
		MoPD&SI Ministry of Industries and Production					
12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse							
12.5.1 National recycling rate, tons of material recycled	Not Reported		N/A	N/A	N/A	N/A	N/A
12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle							
12.6.1 Number of companies publishing sustainability reports	Reported		One time period	2020	UNCTAD Global AI Data Source	Level of requirement	Estimated data are globally reported

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions /organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities							
12.7.1 Degree of sustainable public procurement policies and action plan implementation	Not Reported		N/A	N/A	N/A	N/A	N/A
12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature							
12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment	Not Reported	N/A	N/A	N/A	N/A	N/A	N/A

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions /organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process	
12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production								
12.a.1 Installed renewable energy-generating capacity in developing countries (in watts per capita)	Reported Some data are available		Annual	2000-2019	Renewable electricity generating capacity from IRENA's electricity capacity database. Population data from the United Nations World Population Prospects.		Estimated data are globally reported	
12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products								
12.b.1 Implementation of standard accounting tools to monitor the economic and environmental aspects of tourism sustainability	Reported		Annual	2009-2019	Pakistan Bureau of Statistics (PBS)	N/A	Estimated data are globally reported	

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions /organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities							
12.c.1 Amount of fossil-fuel subsidies per unit of GDP (Production and consumption) and as a proportion of total national expenditure on fossil fuels	Reported		Annual	2015-2019	IEA fossil fuel subsidies database, OECD. Stat- Inventory of Support Measures for Fossil Fuels and IMF Energy Subsidies Template (pre-tax calculations)	N/A		Estimated data are globally reported

4.6.3 Capacity Mapping

All data and information collected on capacity mapping via questionnaires and structured interviews which were conducted with officials in relevant line ministries or agencies, are classified into three broad categories: competencies, resources, and enabling environment.

4.6.3.1 Competencies

The relevant authorities in Pakistan have a sufficient understanding of all SDG 12 indicators. The National Action Plan on Sustainable Consumption and Production (NAP) 2016 delineates knowledge and awareness of SDG Targets.

They have the skills to identify data collection points of SDG 12 targets through conducting a number of related studies and have the expertise to collect and monitor the data based on its definition. Further, the skills to analyze and aggregate the data and information related to SDG 12 monitoring and reporting have been improved through a variety of projects and studies.

The relevant authorities in Pakistan have specific training and evaluation departments and an adequate number of staff and a clear mandate relevant to SDG 12 monitoring and reporting. However, direct staff has not been allocated for SDG 12 monitoring and reporting within the organizations.

4.6.3.2 Resources

The relevant organizations do not have sufficient financial sources in order to manage human resources. However, they have financial resources to cover the operational costs with regard to SDG 12 monitoring and reporting. Further, they have the necessary software and hardware for monitoring and reporting SDG 12. The involvement of the stakeholders is from the government sector, civil societies, academia, and development partners.

4.6.3.3. Enabling Environment

Referring to the authority, though, some organizations have authority only to commit resources. Further to enhance the efficiency and effectiveness of SDG 12 monitoring and reporting; the National Action Plan on Sustainable Consumption and Production (NAP-SCP) 2016, Voluntary National Review (VNR) 2019, initiatives of the Government of Pakistan regarding the SDG 12 (Policies/programs) for various sectors; land and forest resources, energy, transport, water, agriculture, industry, sustainable cities, climate change, marine ecosystem, education are available. SDG 12 MONITORING AND REPORTING IN PAKISTAN 2021, An Analysis of National Action Plan on SCP and Recommendations for SDG 12 Monitoring and Reporting are the available knowledge and methodology base.

4.7 Sri Lanka

Sri Lanka is an island country lying in the Indian Ocean. The population of the country is 21,803,000, with a 0.6% of population growth rate (CBSL, 2020) and a lower-middle-income country with a GDP per capita of USD 3,852 (2019).

As a signatory to the 2030 agenda, Sri Lanka has taken numerous initiatives towards facilitating the Sustainable Development Goals. These include enacting the legal framework, Sustainable development Act in the parliament and establishing the institutional framework, The Sustainable Development Council, Sri Lanka. The Sustainable Development Council, Sri Lanka, established in terms of Sri Lanka Sustainable Development Act, No. 19 of 2017, and it is the coordinating government institution with the responsibilities of coordination, facilitation, monitoring, evaluation and reporting on the implementation of the 2030 Agenda for Sustainable Development in Sri Lanka.

According to the Report of "Sri Lanka: Status of SDG Indicators and Baseline Data," published by the Sustainable Development Council of Sri Lanka in December 2021, Data is currently available for a total of 104 SDG Indicators out of the 244 SDG Indicators in the Global Framework.

4.7.1 National SDG institutional structures

Sri Lanka has taken a number of steps to aid and accelerate the implementation of the SDGs. One such initiative is the creation of a Parliamentary Select Committee on Sustainable Development, which will aid in the implementation of the SDGs by coordinating the Parliament's actions with those of the various ministries and providing expert advice. In addition, the Ministry of Sustainable Development and Wildlife was established in 2015 as the line ministry responsible for sustainable development in Sri Lanka. The regional development portfolio has been added since May 2018. The Ministry of Sustainable Development, Wildlife, and Regional Development (MSDWRD) serves as the focal point for coordinating, facilitating, and reporting on Sri Lanka's implementation of the Sustainable Development Goals. The enactment of the Sustainable Development Act No. 19 of 2017 lays the foundation for a well-organized institutional mechanism to implement the SDGs utilizing the existing system of public institutions. (from VNR). Sri Lanka's policy framework further reflects the country's adherence to the principles of sustainable development.

A total of 24 ministries and 83 agencies within these ministries were recognized as responsible for implementing SDG 12. Some key ministries identified in achieving SDG 12 include the Ministry of Mahaweli Development & Environment, the Ministry of National Policies & Economic Affairs, the Ministry of Industry and Commerce, and the Ministry of Parliamentary Reforms and Mass Media. The key agencies identified include the Central Environmental Authority, the Department of National Planning, and the Industrial Development Board (Handbook on the Institutional Architecture for SDG Implementation in Sri Lanka, 2017).

4.7.2 Current status of the SDG 12 in Sri Lanka (Indicator wise Classification)

The following analysis is based on the questionnaire, literature review and interviews. Based on the UNECE template, the reporting status and the quality of reporting are mentioned as follows;

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries							
12.1.1 Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production	Reported	Ministry of Environment, Sustainable Development Council	One time reporting	2020	10YFP / WESR (World Environment Situation Room)	Yes By Policy Instruments	Estimated data are globally reported
12.2 By 2030, achieve the sustainable management and efficient use of natural resources							
12.2.1 Material footprint, material footprint per capita, and material footprint per GDP	Reported (Some data available)	Department of Census and Statistics			N/A	N/A	Estimated data are globally reported

Indicators	Reporting Status		Quality of the Reporting				
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	Reported (Some data available)	Department of Census and Statistics	Annual	2000-2017	Environment Live / Global Material Flows Database	Yes By type of product	Estimated data are globally reported
12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses							
(a) Food loss index and (b) food waste index	Reported (Some data are available)	Department of Census and Statistics, Ministry in charge of Local Governments	One time period	2019	Food Waste Index Report 2021 / WESR	By food waste sector	Estimated data are globally reported

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment							
12.4.1 Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement	Reported	Department of Census and Statistics, Ministry of Environment, Ministry of Agriculture,	Every 5 year	2015-2020	World Environment Situation Room Environment Live	Activity, Age, Disability status, Education level, Location, Quantile, Sex, Type of occupation, Type of product	Estimated data are globally reported
12.4.2 (a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated, by type of treatment	Reported (Municipal Waste data is reported,	Central Environmental Authority	Random	2004 and 2016	UNSTATS / WESR	N/A	Estimated data are globally reported

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process	
	some data are available)							
12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse								
12.5.1 National recycling rate, tons of material recycled	Reported (some data are available)	Central Environmental Authority	N/A	N/A	N/A	N/A	Estimated data are globally reported	
12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle								

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources		Data disaggregation available	Transparent Process
12.6.1 Number of companies publishing sustainability reports	Reported	Ministry of Environment	One time period	2020	UNCTAD Global AI Data Source	N/A		Estimated data are globally reported
12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities								
12.7.1 Degree of sustainable public procurement policies and action plan implementation	Reported	Ministry of Environment	N/A	N/A	N/A		N/A	N/A
12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature								

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process	
12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment	Reported (Some data are available)	National Education Commission, Ministry of Education, National Institute of Education	One time Period	2020	Country reports on the implementation of the UNESCO 1974 Recommendation concerning Education for International Understanding, Co-operation and Peace and Education relating to Human Rights and Fundamental Freedoms	N/A	Estimated data are globally reported	
12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production								

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.a.1 Installed renewable energy-generating capacity in developing countries (in watts per capita)	Reported	Sustainable Energy Authority	Annual	2000-2019	Renewable electricity generating capacity from IRENA's electricity capacity database. Population data from the United Nations World Population Prospects.	N/A	Estimated data are globally reported
12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products							

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.b.1 Implementation of standard accounting tools to monitor the economic and environmental aspects of tourism sustainability	Reported (Some data available)	Sri Lanka Tourism Development Authority (SLTDA)	Annual	2008-2018	Sri Lanka Tourism	N/A	Estimated data are globally reported
12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities							

Indicators	Reporting Status		Quality of the Reporting					
	Data globally reported/not	Related institutions/ organizations	Frequency of data Collection	Time Coverage	Data Sources	Data disaggregation available	Transparent Process
12.c.1 Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels	Not Reported	N/A	N/A	N/A	N/A	N/A	N/A

4.7.3 Capacity Mapping

All the collected data and information are mentioned under three main categories: competencies, resources, and enabling environment. Knowledge and awareness, Data and Information Collection Skills, Data and information Analysis skills are comprehensively discussed at each indicator level under the competencies and Planning and Management skills, Data Management skills, Reporting Skills, Internal structure, and procedures are collectively discussed, covering entire indicators. Resources and Enabling environment

The indicator level responses are presented collectively under each target.

However, the information collected through the literature survey and interviews reflects unique features for different indicators. Thus, this information is presented under each indicator.

4.7.3.1 Competencies

Sri Lanka contains a sufficient knowledge and understanding of the target and the data & information.

They have already identified the data collection point and obtained the required information from the responsible institute; hence they have sufficient skills in data collection. Sustainable Development Council, Sri Lanka, has defined data based on the UN Metadata guidelines (https://unstats.un.org/sdgs/UNSDG/IndDatabasePage). In addition to that, the Department of Census and Statistics has the skills to define the data that needs to be collected to monitor the indicator.

Regarding the skills to analyze and aggregate the collected data and information to monitor the SDG 12 indicators, the Sustainable Development Council of Sri Lanka has developed a National SDG Data Portal linking all government institutions to a central platform. All responsible government institutions for data compilation are required to update the system at the agreed frequency.

According to the responses to the questionnaire, organizational skills related to designing the strategy, resource planning, developing the implementation plan, and monitoring and evaluating the implementation of SDG 12 monitoring and reporting are developed adequately with the establishment of the Sustainable Development Council in terms of Sri Lanka Sustainable Development Act, No. 19 of 2017 as the focal point with responsibilities for coordination, facilitation, monitoring, evaluation and reporting on the implementation of 2030 Agenda for Sustainable Development in Sri Lanka. The Sustainable Development Council has commenced an exercise to mainstream the SDGs into the annual work plans of Ministries and affiliated institutions. Technical support is also provided to develop data generating capacities of government institutions during this process. Data roadmaps were prepared for relevant ministries and institutions. The Sustainable Development Council of Sri Lanka has developed a National SDG Data Portal linking all government institutions to a central platform to facilitate the data reviewing and monitoring process.

Data management skills related to SDG 12 monitoring and reporting can be observed in a high level of performance due to the availability of the National SDG Data Portal, linking all government institutions to a central platform. Over 80 government institutions that are responsible for the generation of socio-economic and environmental data have been identified in line with UN metadata definitions and the mandates and functions of government ministries and institutions. According to the established methodology, all responsible government institutions for data compilation are required to update the system at the agreed frequency.

The establishment of data reporting skills related to SDG 12 monitoring and reporting can be observed via establishing the National SDG Data Portal and the data reporting to the respective portal by the responsible institutions. Based on the available data, the Sustainable Development Council conducts SDG Data gap analysis and circulates the report to relevant government ministries/institutions mandated to work for areas relevant to SDG 12.

In the Sri Lankan context of SDG 12 reporting and monitoring, there is no department or unit specifically designated for monitoring and reporting SDG 12. Sustainable Development Council itself manages reporting and monitoring activities related to all SDGs as a whole with a limited number of staff.

4.7.3.2 Resources
Considering all the sources of responses and desktop reviews, financial backup for the SDG 12 monitoring and reporting is observed as a crucial need for all types of arrangements, including obtaining sufficient human resources, developing human resources via conducting sufficient training for existing staff, operational cost and to procure sufficient tools and technology for SDG 12 monitoring and reporting

4.1.3.3 Enabling Environment
In the Sri Lankan context of SDG 12 monitoring and reporting, the Sustainable Development Council has defined and compiled data based on the UN Metadata guidelines. In addition to that, technical support from the Department of Census and Statistics and UNDP for methodology development and data validation is highly appreciated

5. Barriers and Challenges

As a whole, the appraisal of SDG 12 monitoring and reporting in the seven regional countries conducted in this study, as given above, signifies a considerable level of inadequacy in monitoring progress towards SDG 12 at the local, national, regional and global levels. This, in turn reflects an absence of sound indicator framework that is required to translate the SDG 12 and its targets into a management tool to help countries develop implementation strategies and allocate resources based on the measured progress towards sustainable development while ensuring the accountability of all stakeholders for achieving the SDG 12 as well as other related SDGs. It is evident that high-quality statistics are needed to enable the relevant stakeholders, including the national government, local authorities, the private sector and civil society, to measure progress towards achievement of the SDGs, while the very comprehensiveness of the 2030 Agenda creates the need for an unprecedented range of statistics at different levels, including those derived from official statistical systems and from administrative and non-traditional data sources. These demand for a wide range of resources and competencies, which in turn reflect the presence of a host of barriers and challenges faced by all countries for SDG 12 monitoring and reporting. Therefore proper understanding of them becomes a fundamental requirement for taking remedial actions. In this section, barriers and challenges perceived in the seven countries are synthesized under a number of categories, as presented below.

5.1 Lack of competencies

The need for a high-quality and wide range of statistics at different levels demands a new set of knowledge and skills for the staff involved in the SDG 12 monitoring and reporting process. Thus, lack of competent staff with technical skills to collect and manage data is one of the key challenges. The competencies required are in relation to identifying data collection points, data collection and management, data aggregation, analysis, data presentation, reporting, and there exist gaps in all these areas.

5.2 Lack of integrated policy framework

The data collection and analysis are also affected by policy incoherence, inconsistency, more frequent changes and discontinuity. Further, unavailability or insufficiency of a central policy or lack of an integrated policy framework that is supported by a long-term planning process, as well as the less focus government's annual programs, and budgets to achieve SDG 12 monitoring and reporting activities are observed. As the indicators should essentially reflect and align with national planning and budgetary processes, SDG 12 monitoring and reporting has become a difficult task.

5.3 Insufficient Stakeholder Engagement

Monitoring and reporting of indicators should be supported by a broader consensus among many stakeholders, including government agencies, private organizations, civil societies, academia and development partners, and their resources and competencies. In particular, indicators should be broadly consistent with systems of national accounts, systems of environmental-economic accounting, and other systems-based information, reflecting localization. Thus, inadequate engagement and participation of these stakeholders to keep track of and monitor progress on SDG 12 is perceived as a key barrier. This, in turn, has affected the proper integration of data systems and the setting up of an all-encompassing system for collecting data on a regular and periodic basis.

5.4 Inadequate Government Support

Further to the policy and planning level challenges highlighted above, lack of mandating and assigning of roles, responsibilities and accountabilities on SDG 12 monitoring and reporting for the relevant staff is observed, even though the in almost all the countries have well-established government-supported institutional frameworks related to SDG. This has resulted in the absence of regular monitoring and

reporting activities, unavailability of a refresher, knowledge sharing, and encouragement sessions on monitoring and reporting, which have been identified as key lacking areas of government responsibility.

5.5 Insufficient Resource Allocation

The lack of positive policy environment and limited engagement of stakeholders have also resulted in the limited allocation of financial resources by relevant authorities towards SDG 12 monitoring and reporting in all the countries in the region. Hence almost all the projects related to this topic have been supported by the funds and other resources (such as tools, technologies and expertise) provided by development partners. However, lack of competent human resources has affected the effective and efficient management of allocated resources.

6. Summary

This section of the report summarizes all the outcomes and findings from the desktop survey, questionnaire and interviews.

6.1 Summarization of Monitoring and Reporting SDG 12 in the South Asian Region

SDG 12 goals, along with its indicators, are reported globally and nationally as follows

Figure 3: Sub Regional Summary of SDG 12 Monitoring and Reporting in South Asia

Five countries (Bhutan, India, Maldives, Pakistan, and Sri Lanka) have reported on indicator 12.1.1, and they have included SCP in their policies, plans, programs, or strategies. But Nepal has not reported the progress under 12.1.1 and according to the records, they are taking the necessary measures to accelerate the actions for that. Due to having some issues in the monitoring and reporting, Bangladesh has not met the complete reporting and monitoring requirements for 12.1.1. Recently it's in the partial reporting and monitoring stage.

No country has reported on Indicator 12.2.1. However, data are partially available to calculate the indicator in all seven countries. Nepal and India have reported on indicator 12.2.2. The remaining five countries (Bangladesh, Bhutan, Maldives, Pakistan, Sri Lanka) have reported partially by providing data for the years 2000-2017 on their domestic material consumption by type of raw material, domestic material consumption per capita by type of raw material, and domestic material consumption per GDP by type of raw material.

Five countries (Bangladesh, Bhutan, Maldives, Nepal, Pakistan) have reported on indicator 12.3.1; (a) Food loss index and (b) food waste index. However, in India and Sri Lanka, data are partially reported for the indicator.

12.4.1. Indicator relates to the number of parties to international multilateral environmental agreements on hazardous waste and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement. Five countries (India, Maldives, Nepal, Pakistan and Sri Lanka) reported on this indicator, and in Bangladesh and Bhutan, data are partially reported to calculate the indicator. Only Bhutan has reported on 12.4.2 Indicator; (a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated by type of treatment. Five countries of seven (Bangladesh, India, Maldives, Nepal and Sri Lanka) report data to calculate the 12.4.2 Indicator. However, Pakistan has not reported on this indicator. Only Nepal has reported on Indicator 12.5.1; National recycling rate, tons of material recycled. And also, in Bhutan, India and Sri Lanka, data are partially available to calculate the indicator, while Bangladesh, Pakistan and Maldives are not reporting.

Six countries (Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka) have reported on 12.6.1 indicators related to the number of companies publishing sustainability reports. No reports have been observed by Bangladesh under this indicator yet. Bhutan and Sri Lanka reported on the 12.7.1 indicator; Degree of sustainable public procurement policies and action plan implementation. Five countries (Bangladesh, India, Maldives, Nepal, Pakistan) have not reported on this indicator. No country has reported on the 12.8.1 indicator, the extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education, and (d) student assessment. However, data are partially available in Bangladesh, Nepal, Maldives, India and Sri Lanka.

Bangladesh, Maldives and Sri Lanka have reported on the indicator 12.a.1; Installed renewable energy generating capacity in developing countries. The data are partially available for Bhutan, Nepal, India and Pakistan.

 Five countries (Bangladesh, Bhutan, India, Pakistan and Maldives) have reported on 12.b.1 indicator, which relates to the implementation of standard accounting tools to monitor tourism sustainability's economic and environmental aspects. Data is partially available in Sri Lanka and Nepal to calculate the indicator.

India and Pakistan have reported on 12.c.1 indicator related to fossil-fuel subsidies. In Bangladesh, data is partially available. Bhutan, Maldives, Nepal and Sri Lanka have not reported on this indicator.

6.2 Summary of Capacity Mapping
Capacity mapping of each country can be tabulated as follows;

The summary of the capacities identified under three capacity spheres; competencies, enabling environment and resources are displayed in figure 4.
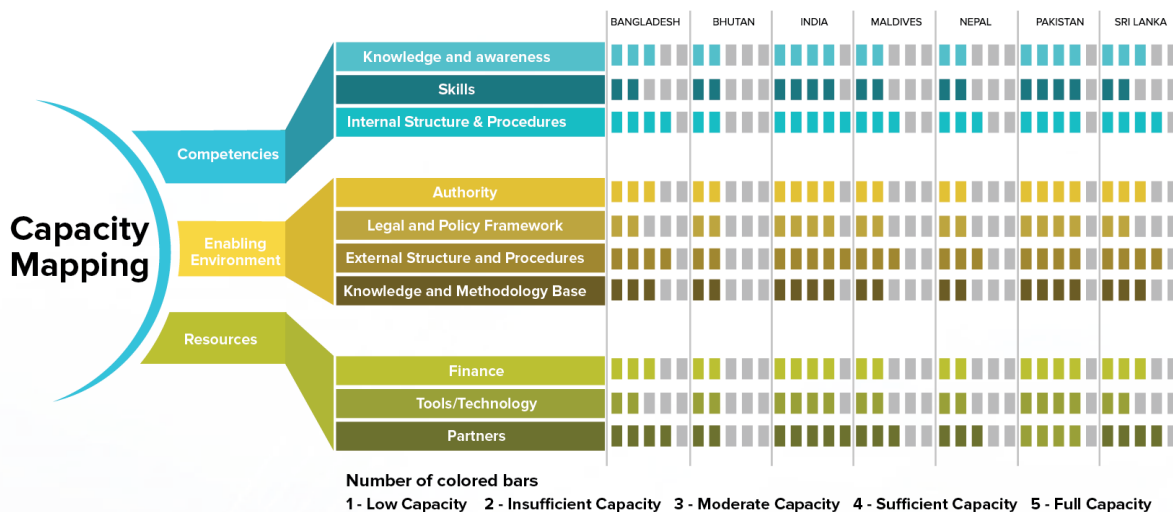
Figure 4: Capacity Mapping related to SDG 12 Monitoring and Reporting in South Asia

Figure 4 shows that the relevant authorities of SDG 12 monitoring and reporting in Bangladesh have a moderate capacity in the area of knowledge and awareness to understand SDG 12 indicators. However, the data collection and analysis skills are insufficient for the majority of the indicators. Bangladesh has a sufficient internal structure for SDG 12 monitoring and reporting. Yet the existing rules and policies are insufficient to adhere to SDG 12 Monitoring and Reporting.

Bhutan has insufficient capacities in knowledge and awareness, skills, internal structure and procedure to monitor and report SDG 12 and its activities. Mainly lack of expertise skills, limited knowledge, inadequate sectoral coordination, lack of data, and limited human and technical capacity can be listed as the main gaps in competencies. Data management skills, planning, and management skills are not sufficient. India shows a sufficient understanding (knowledge and awareness) of SDG 12 indicators. For monitoring and reporting purposes, sufficient skills are available. And also, full capacity availability can be observed for internal structure and procedures. In contrast to India, the Maldives' lack of technical skills, especially in collecting and managing data, is still a big problem regarding the SDGs. There aren't enough technical people who know how to collect and manage data. They have insufficient knowledge and awareness of SDG 12 monitoring and reporting. Since there are some organizations appointed for SDG 12 monitoring and reporting, a moderate level of capacities is observed.

Nepalese authorities are aware of SDG 12 aims and indicators. But knowledge is not sufficient to comprehend the indicators. Skills to establish procedures and equipment to collect data from specific sites are not sufficient. If the indicators' procedures are clear, existing capabilities can be adequate. The level of skills in data management is insufficient to report on all of the indicators. The skills for summarizing and aggregating the data are available to a certain extent. Existing capacities for developing and designing strategies are insufficient. While Nepal's resource planning skills are adequate, the country's human and financial resources are insufficient to manage the SDG 12 monitoring and reporting system. Skills to monitor disaggregated data in addition to national-level data are not sufficient. Nepal has a moderately-organized internal structure. The country has assigned "SDG codes" to all budget-supported projects and activities to make tracking progress toward the goals easier.

The relevant authorities in Pakistan have a sufficient understanding of all SDG 12 indicators. Further, sufficient skills to collect, analyze and aggregate the data are available. Though Pakistan has sufficient understanding and skills on SDG 12 monitoring and reporting, due to the capacity gaps, inadequate tools

and technology, less coordination with external structures and procedures etc. lead to lack of reporting on some indicators. Sri Lanka has moderate knowledge and understanding of the SDG 12 targets and indicators. However, some indicators have been identified for methodology development in 2022. Yet their skills are insufficient in Data and Information Collection. Technical Support is required for officers' methodology and capacity development in relevant institutions. Organizational skills related to designing the strategy, resource planning, developing the implementation plan, and monitoring and evaluating the implementation of SDG 12 monitoring and reporting are developed adequately.

Recent status of Enabling Environment of the South Asian countries

The organizations for SDG 12 monitoring and reporting in Bangladesh have moderate authority to give and enforce the orders, commit resources and make decisions regarding SDG 12 monitoring and Reporting. They have only national policies to enhance the efficiency and effectiveness of the SDG 12 monitoring and reporting. So, the level of capacity in the legal policy framework is insufficient. In Bhutan, the authority for SDG 12 monitoring and reporting is insufficient. Even though a proposal has been developed to create a policy in SCP, insufficient explicit policy instruments is observed. In the context of India, there are defined organizations established to give and enforce orders, commit resources and make recommendations or decisions. The legal and policy framework is sufficient enough to Strengthen the SDG 12 monitoring and Reporting. Depending on the type of project, external structures help the activities related to SDG 12 monitoring and reporting with their full capacity.

The Maldives currently lacks a national development plan and a long-term planning framework. So, their capacity related to legal and policy frameworks is insufficient. There is no overarching document that integrates all sectoral plans and policies. Moreover, the availability of external structure in a moderate level and the capacities related to knowledge and methodology is insufficient. There are no integrated SCP policies on the environment of achieving the SDGs as a whole in Nepal. Formalize external processes are available at a moderate level. Provinces have set up Policy and Planning Commissions to handle policy and planning. These commissions help provinces build annual and periodic plans to achieve the SDGs.

In Pakistan, the authority to give and enforce the orders is observed to be at a sufficient level. To enhance the effectiveness and efficiency of SDG 12 reporting and monitoring, national policies are available to a sufficient level. Institutional Knowledge and methodology base for monitoring and reporting are sufficient. And in Sri Lanka, the relevant organizations have a moderate level of authority to give and enforce orders. The availability of national, regional, or international policies that enhance the efficiency and effectiveness of SDG 12 monitoring and reporting is insufficient.

Recent status of Resources of the South Asian countries

According to the data gathered through the study, the organization SDG 12 Monitoring and Reporting in Bangladesh has moderate financial sources to manage human resources with regard to SDG 12 monitoring and Reporting. But the availability of tools and technology is insufficient to handle their operations appropriately. In the context of Bhutan, the availability of capacities for finance, tools and technology and partners are insufficient. Separate financial allocations are not available for SDG 12 monitoring and reporting. As a technological resource, the DEWA dashboard provides a database for all the data related to SDGs in Bhutan. Shareholders are there to be involved in SDG 12 monitoring and reporting. But as a whole, the resources are insufficient to operate properly.

In India, most of the monitoring and reporting activities are sufficiently financed by the development agencies in a high percentage other than the government. All kinds of resources are sufficiently available

when the activities are covered under the projects of those development agencies. Hence some government involvement is needed to improve the country's facilities for SDG 12 monitoring and reporting. In the context of Maldives, the capacity of the partners is moderate, while all resources, including finance, tools and technology, are insufficient. Nepal's financial resources are not allocated in line with SDG 12. Affording enough human resources, educating current personnel, and purchasing adequate tools and technology are all insufficiently funded. However, government policies, programs, and budgets are out of pace with national SDG s, and cross-departmental coordination and communication are lacking for resource management. Community-based organizations, NGOs and international government organizations (INGOs) are keen to involve with the SDG 12 monitoring and reporting in Nepal.

In Pakistan, financial resources for developing human resources and covering the operational cost are available. Resources are sufficiently available when the activities are covered under the projects of those development agencies. Financial backup for the SDG 12 monitoring and reporting is observed as a need for all arrangements, including obtaining sufficient human resources to procure sufficient tools and technology for SDG 12 monitoring and reporting.

7. Conclusions and Recommendations

Based on the study on SDG 12 monitoring and reporting in South Asia, several conclusions can be made as follows;

- Each country in the South Asian region (excluding Afghanistan) has a well-established institutional framework for SDG.
- SDG monitoring and implementation activities are addressed as a group without considering each goal separately.
- Almost all the countries have taken some significant steps to achieve SDG 12.

- Out of 13 indicators, ten indicators have been reported at least by one country.

A capacity mapping study showed that there are significant gaps in competencies, resources and enabling environment. Almost all the countries have a fair level of understanding of the SDG 12 monitoring and reporting. But gaps in knowledge and skills regarding the identification of data collection points, data collection, management, storage, aggregation, analysis and presentation. **So, it is recommended to have scheduled knowledge dissemination sessions focusing on the relevant authorities in South Asian countries.**

Resources, including tools, technologies and finance, seem to be less in allocation. In here the government push back of almost all the countries seem to be not at the level of adequacy. The funded projects drive the majority of the SDG 12 monitoring and reporting activities by development agencies. Recommendations can be made to drive the governments to focus continuously on SDG 12 monitoring and reporting activities while creating a method to follow-up government bodies. **Make available a focal gathering where all the stakeholders related to SDG 12 monitoring and reporting** can enhance the efficiency of monitoring and reporting activities and avoid data misplacements and repetition.

Enabling Environment is strengthened by the policy availability of the majority of the countries. Continuous support for the countries in the aspects of **knowledge dissemination sessions, workshops and dissemination of success stories** will motivate the relevant parties to identify their strengths and weaknesses of them on SDG 12 monitoring and reporting and overcome them.

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