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Sustainable Finance:
Mobilising Finance for SCP and SDG 12

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Abbreviations

ADB	Asian Development Bank
AIIB	Asian Infrastructure Investment Bank
APAEC	ASEAN Plan of Action for Energy Cooperation
ASEAN	Association of South East Asian Nations
BACoMaB	Banc d'Arguin Coastal and Marine Biodiversity Trust Fund
BAU	Business as Usual
CBI	Climate Bonds Initiative
CERF	Clean Energy Revolving Fund
CERF	Clean Energy Revolving Fund
CPI	Climate Policy Initiative
CSA	Climate smart agriculture
CSI	Cottage and Small Industries
CTF	Clean Technology Fund
EE	Energy Efficiency
EE&C	Energy efficiency and Conservation
ESG	Environmental, Social and Governance
ESM	Environmentally Sound Management
FMCN	Mexican Fund for the Conservation of Nature
GCF	Green Climate Fund
IMF	International Monetary Fund
JICA	Japan's International Cooperation Agency
MAR	Mesoamerican Reef Fund
OCR	Ordinary capital resources
PES	Planned Energy Scenario
PES	Payment for Ecosystem Services
PIPA	Phoenix Islands Protected Area
PSL	Priority Sector Lending
RBI	Reserve Bank of India
SCP	Sustainable Consumption and Production
SDG	Sustainable Development Goals
SME	Small and Medium Sector Enterprises
TES	Transformative Energy Scenario
TPES	Total primary Energy Supply
UNEP	United Nations Environment Programme
WEEE	Waste Electrical and Electronic Equipment
WTO	World Tourism Organisation
WWF	World Wildlife Fund

Executive Summary

Sustainable Consumption and Production (SCP) and SDG-12 focuses on sustainable management and efficient use of natural resources, implementing sustainable agricultural practices, and undertaking energy-efficient practices across sectors. This goal has several implications for major economic sectors such as agriculture, manufacturing, transport, energy, to name a few. As Asian economies have continued to grow, there has been a sustained increase in the demand for natural resources. Especially for the South-East Asian countries, there has been increasing demand for fuel, especially from oil, with SE Asia becoming a net importer of fossil fuels in recent times. In fact, oil consumption dominates in all major sectors, followed by coal. At the same time, with mandates for providing affordable electricity to the entire population, the region faces substantial growth in electricity demand, growing at an average of 6% per year, thereby contributing to significant financial strains in the existing power systems.

With the existing resources consumption being untenable, there is an urgent need to shift towards sustainable forms of consumption and production. This requires collaborative efforts from various stakeholders to facilitate finance for SCP. There are various forms of financial resources available in the Asian economies to drive financing for SDG 12, viz. international finance (both public and private), domestic (both public and private), public borrowing (domestic and international), remittances, and commercial investments. While there have been considerable developments in the green bond market in Asia, there have also been attempts to label these bonds as 'green' to finance low carbon and climate-resilient infrastructure. However, the existing regulatory framework does not support earmarking the bonds exclusively for financing SDG 12 efforts.

Hence financing for SCP needs to be bolstered through enablers or levers, some of which are effective policy and regulatory framework, governance, technological innovations, reporting and monitoring mechanisms, capacity building and outreach, market efficiencies, and innovations in business models. While available literature and knowledge artifacts focus on the volume of finances available for accomplishing the SDG Goals, there is less know-how on the landscape of financing with respect to SDG 12, especially for the Asian economies.

Chapter 1 presents a contextual background and defines the scope of the study. The following study makes an attempt to study the status of SCP finance in 10 selected countries from South Asia, South-East Asia and North-East Asia. The South Asia countries include Bhutan, India, Bangladesh and Nepal; South-East Asian countries include Cambodia, Philippines, Thailand and Indonesia; The North-East Asian economies pertain to China and Mongolia. Among each of these countries, focus has been directed towards policies and activities in resource-intensive and emission-intensive sectors such as agriculture, manufacturing,

energy, infrastructure, waste-management, transport and tourism from the finance point of view.

Chapter 2 defines the broad aspects of 'sustainable finance' and 'financing for SCP'. It clearly brings out the intricate differences and overlaps among the synonymously related terms such as green finance and climate finance. The chapter also presents the various financing instruments and tools which are used to fund SCP efforts.

Chapter 3 presents the present state of financing for SCP across the various selected sectors. Energy is by far the mostly financed sector mobilised through both public and private sources of finance. While there are limitations on the extent of public finance, blended sources of financing have immense potential for the future.

Chapter 4 presents various case studies to showcase the role of business models, policies, technologies as enablers to mobilise private sources of finance. The baseline surveys presented in this chapter clearly brings out the state of SCP financing, the key challenges and the role of enablers to address these challenges.

Chapter 5 analyses the regulatory aspects of financing for SCP and sustainability as a whole. It also examines the extent of financing component in the present SCP policies in the South-East Asian economies. While some countries such as Thailand and Bangladesh are quite progressive in terms of sustainable finance policies, efforts are underway in the other South-East Asian Nations with piecemeal policies on green financing.

Chapter 6 presents an overall view of SCP finance in South-East Asian nations with key focus on the sectors mostly dependent on public finance, scope of mobilising private finance in certain sector, the overall barriers and drivers to finance.

Chapter 7 presents some of the recommendations for harnessing private sources for financing SCP interventions. Some of the recommendations pertain to increasing market awareness and receptivity with respect to SCP factors through enhancing awareness, ensuring transparency through reporting and disclosures and harnessing the public sector balance sheets to bolster the efforts.

CONTENTS

Chapter

1 Introduction

Chapter 1: Introduction

In the decades spanning the industrial and digital revolution, countries around the world have experienced rapid economic development accompanied by increasing mass production and consumption. As a result, global material footprint has grown by 70% between 2000 and 2017[1].

Material consumption at such levels has led to correspondingly high levels of energy consumption, greenhouse gas emissions and proliferation of waste generated. As indicated in the Global Sustainable Development Report 2019, perpetuating current levels and methods of production and consumption are threatening the progress towards achieving Agenda 2030 and worsening the climate crisis.

This is especially true in emerging Asian economies. Countries in Asia have been experiencing rapid growth in economic activity resulting in higher demand for energy. This has led to growing concerns regarding the over-extraction of natural resources and unsustainable production and consumption patterns. A UNEP study revealed how the Asia Pacific region had higher material consumption than the rest of the world and is likely find it more challenging to transition to a green economy (UNEP,2013).

In order to achieve climate goals and address emerging global crises such as biodiversity loss and zoonotic diseases, it is imperative that the development trajectories of these countries take into account environmental factors along with economic and social factors[2].

Sustainable Consumption and Production (SCP) practices refers to an ambit of initiatives, policy-based or market-based that address the entire life cycle of resource use in a systemic manner-right from their extraction to their disposal or re-integration into the economic cycle. Resource extraction and processing, in its current linear form, has been identified to contribute over 50% and 90% of global climate change and biodiversity loss respectively. Implementing efficiency measures in addition to thoughtfully designed policy actions could potentially reduce resource use by 25% and greenhouse gas emissions by 90%[3]. This would not only protect the future of the planet but will also bring about economic benefits in terms of a higher global GDP that is also more equally distributed.

There are many reasons why developing countries in Asia are experiencing unsustainable and environmentally damaging trajectories of development. On

[1] *https://sdgs.un.org/goals/goal12*
[2] *https://www.spotlightnepal.com/2019/08/02/switch-asia-sustainable-approach-addressing-environmental-problems-asia/*
[3] *https://www.oneplanetnetwork.org/SDG-12/funding-SDG-12/why-fund-sdg-12*

the one hand, in their quest to improve the economic status and quality of life of their citizens, they tend to mimic the resource-heavy industrialisation based-development paths adopted by developed or first-mover countries. On the other hand, developed countries continue to outsource material-intensive, extraction-based production to developing countries, effectively increasing the emissions and waste generated in the latter. As a result, sub-regions in Asia have been noted to be regressing on their SDG 12 targets. Such trends also give rise to questions of equity and justice when dealing with climate change and sustainable development targets. Issues of climate justice are even more pertinent when taking into account the vulnerability of developing Asian countries to the adverse impacts of climate change. Their geographic location as well as economic and infrastructural status make them more vulnerable to the vagaries of climate change.

In the above context, it is crucial that the status of the sustainable consumption and production practices in developing Asian countries be given due policy and market attention. It is particularly important that initiatives and measures undertaken in pursuit of SDG 12 and SCP activities in general are able to mobilise the required funding from both public and private sources. The importance of access to sustainable finance for the achievement of Sustainable Development Goals is well documented and widely acknowledged on global platforms such as the Conference of Parties[4] (UN, 2021). Despite this consensus, green finance flows have consistently fallen short of the required amounts each year[5]. As part of the common but differentiated responsibilities principle of the Paris Agreement, developed countries have a greater responsibility to directing finance and aid towards the development of low-carbon technology and infrastructure in developing countries.

The following study makes an attempt to study the status of SCP finance in 10 selected countries from South Asia, South-East Asia and North-East Asia. The South Asia countries include Bhutan, India, Bangladesh and Nepal; South-East Asian countries include Cambodia, Philippines, Thailand and Indonesia; The North-East Asian economies pertain to China and Mongolia.

Among each of these countries, focus has been directed towards policies and activities in resource-intensive and emission-intensive sectors such as agriculture, manufacturing, energy, infrastructure, waste-management, transport and tourism from the finance point of view. The primary objective of the report is to investigate the flow of sustainable finance in each of these countries and sectors- their sources, perceived risks, policy support and other gaps in access to finance.

The state of SCP financing is assessed through case studies and baseline surveys conducted for selected countries. The country specific baseline surveys have been conducted to analyse the state of

[4] *https://ukcop26.org/cop26-goals/finance/*
[5] *https://www.carbonbrief.org/analysis-why-climate-finance-flows-are-falling-short-of-100bn-pledge*

SCP financing- primary enablers, key barriers, volume of private financing, policy and regulatory framework to mobilise financing for SCP. The case studies are more specific in terms exhibiting what types of SCP interventions/ initiatives/programs have been financed through various modes of public, private sources, domestic and foreign sources in a specific country. It also highlights the key enablers facilitating finance for such interventions pertaining to policies, business models, capacity building and awareness generation and market dynamics and at the same time points out to the associated barriers to finance.

Chapter

2 CONCEPTUAL BACKGROUND

Chapter 2: Conceptual Background

Defining Sustainable Finance

Sustainable finance focuses on the integration of environmental, social and governance (ESG) considerations in investment and finance decisions[6]. This can be considered as a more workable definition of sustainable finance.

The importance of sustainable finance lies in not only financing of projects which have sustainable impacts, but also how the finance is generated through various sources. Sustainable finance ensures the flow of funds towards developing and implementing sustainable business models, projects integrating environment, social and economic parameters. It represents the future of financial markets to leverage innovative forms of financing to fund sustainable projects and activities. The existing knowledge artifacts point out the lack of a comprehensive definition of sustainable finance. As the concept is fairly new, most of the existing definitions are based on the underlying motivations of various categories of stakeholders such as governments, civil society, businesses, investors and companies.

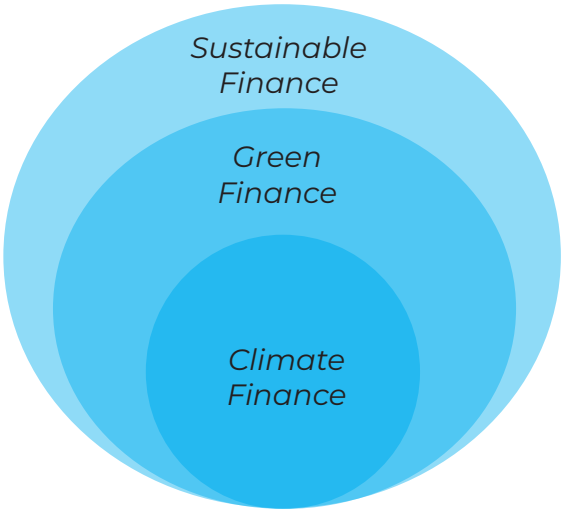
Similarly, green finance generated through green investing or eco-investing encompasses all the initiatives undertaken by various public and private entities such as investors, businesses, banks, non-banking financial institutions etc. to develop, promote, implement and support projects which have sustainable impacts through the help of various financing instruments (International Trade Centre, 2020). Some of the examples of green projects according to ITC include projects which promote renewable energy, energy efficiency, water sanitation environmental audits, reduction in the overall carbon footprint in transport and manufacturing, deforestation etc.

In a similar manner, climate finance as defined by the UNFCCC is the "finance that aims at reducing emissions and enhancing sinks of greenhouse gases and aims at reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts." Hence, climate finance represents that branch of finance which supports climate change related mitigation and adaptation projects and activities across the globe.

All these forms of finance are aligned to achieve the country's Nationally Determined Contribution's (NDC) and SDGs. The inter-relationship between sustainable, green and climate investing is illustrated in the figure below:

[6] *https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance_en*

***Figure 1**: Differences between Sustainable Finance, Green Finance and Climate Finance*



Source: Adapted from CPI, 2020

Sustainable Finance for SCP

What comprise SCP and SDG 12?

SCP is the overarching objective of achieving sustainable development through doing better with lesser consumption of resources. According to UNEP (2010), SCP includes clean production, resource efficiency, sustainable lifestyles, sustainable transport, eco-labelling & certification, waste management, sustainable resource management and sustainable public procurement. According to Obersteiner (2017), among all the SDGs, SDG 12 on Responsible Consumption and Production is less of a goal and more a guideline for means of implementing the aspects of the goal. As a matter of fact, sustainable use of resources, the fundamental aspect of SDG 12 a pertinent proposition considering all 17 goals and is transversal in nature. One of the obvious implications of SDG 12 is dual decoupling of resources and impact. While resource decoupling insists on reducing the rate of use of resources per unit of economic activity, impact decoupling implies maintaining economic output while reducing the environmental footprint of underlying economic activities.

Importance of SDG 12 and SCP

Due to exhaustive use of resources and dependency on natural resources in general, there is a gradual decline in the total stock of resources. Hence judicious consumption of natural resources is required to achieve sustainable consumption and production trends. In addition to this, deployment of resource efficient i.e., resource saving or resource neutral technologies is advocated for. This implies obtaining efficient use of resources across supply chains. According to Obersteiner (2017), resource efficiency can be considered as an investable asset

class with potential benefits such as cushioning against price volatility of resources and subsequent dampening effect on economic output, ensuring sustained supply of resources to meet the material demands of modern societies and maintaining intergenerational equity. However, attaining the SDGs will require ubiquitous deployment of resource efficient technologies and sustainable patterns in consumption.

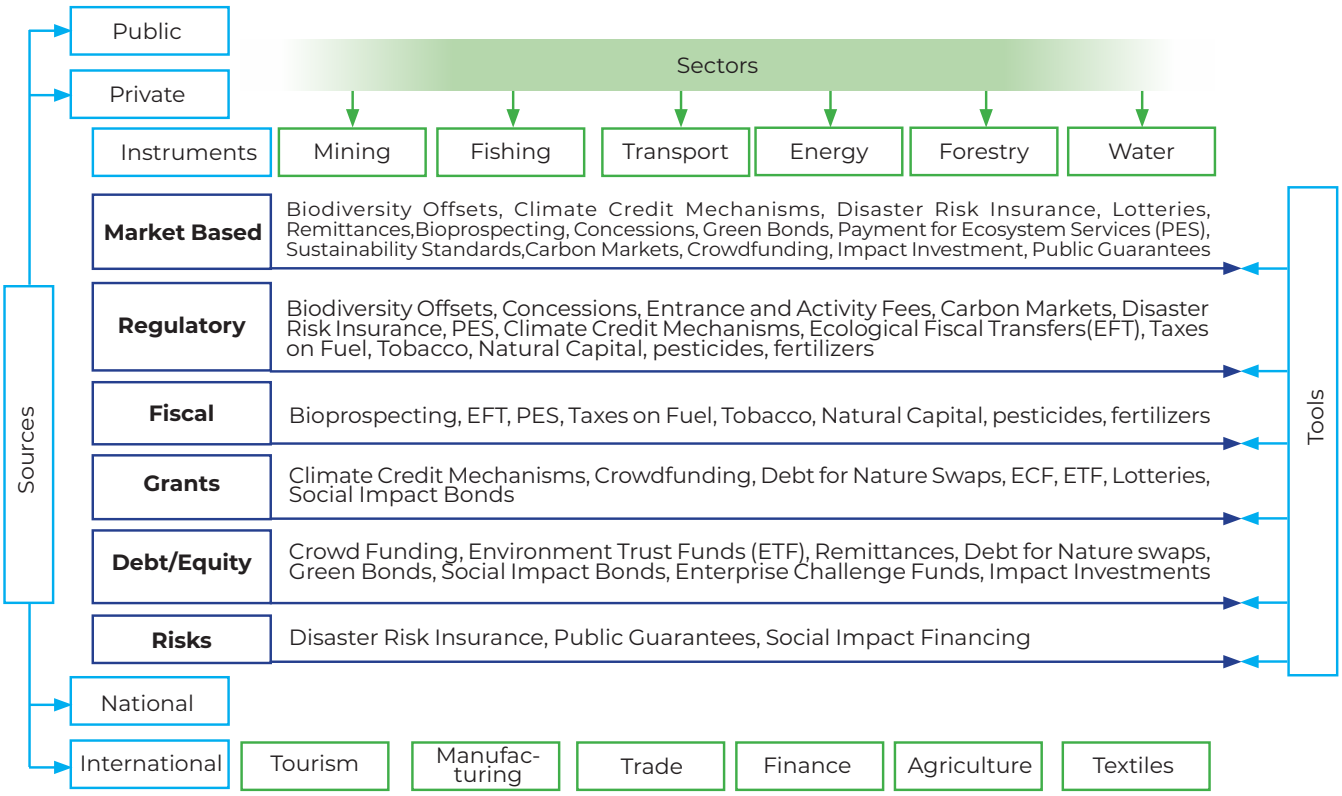
Financing SDG 12

The fundamental aspects of SDG 12 comprise of sustainable consumption, sustainable production, conversion to circular economy models and sustainable finance. While the first three components are modes to achieve SDG 12, sustainable finance represent the means for achieving the same.

Categories of Financing Instruments

- The instruments used for financing SDG 12 across the globe can be categorised into the following broad classifications, viz. Market based instruments, Regulatory, Fiscal, Grants, Debt-equity based and Risks based.
- **Market based:** These are instruments which require market-based transactions are operate through demand and supply forces in the market;
- **Regulatory:** These are basically imposed to cause behavioural changes and are imposed by the regulatory authority of the country;
- **Fiscal instruments** involve reforms in the fiscal system pertaining to national budgets, tax, subsidy, expenditure etc;
- **Grants:** These instruments provide financing solutions through official development assistance or philanthropy;
- **Debt-Equity** based instruments involves acquisition of ownership rights with an obligation to make a payment. The basic difference between a debt and an equity instrument is related to ownership with the latter having an ownership or a stake;
- **Risk based** instruments are based on transfer of risk between two or more parties e.g., guarantee;

***Figure 2**: Financing Instruments for SDG 12*



Source: Compiled by authors

Tools for Financing

The proceeding sub-sections explicitly elaborate upon certain examples of these tools which have been implemented in India and across the globe.

Biodiversity Offsets

According to IUCN, biodiversity offsets are measurable conservation outcomes designed to compensate for adverse and unavoidable impacts of projects, in addition to prevention and mitigation measures already implemented. Although investments in sectors pertaining to infrastructure, oil and gas, mining etc. are well accounted for in the economic system, these sectors' adverse consequences on biodiversity and natural ecosystems are not usually accounted. Hence there has been an increasing recognition by governments and private sector for incorporating ways to compensate biodiversity impacts and achieve No Net Loss (NNL) and preferably a Net Gain (NG) of biodiversity when projects take place. The idea behind these offsets is to make businesses responsible for undertaking conservation outcomes for offsetting the adverse consequences of their actions on biodiversity. This can be achieved systematically through application

of a decision-making framework involving a sequence of steps including avoidance of impacts, minimisation of inevitable impacts and undertaking on-site restoration activities. This finance mechanism has been implemented successfully in Ghana, Mexico, Qatar, South Africa and Uganda.

Climate Credit Mechanism

According to IUCN, biodiversity offsets are measurable conservation outcomes designed to compensate for adverse and unavoidable impacts of projects, in addition to prevention and mitigation measures already implemented. Although investments in sectors pertaining to infrastructure, oil and gas, mining etc. are well accounted for in the economic system, these sectors' adverse consequences on biodiversity and natural ecosystems are not usually accounted. Hence there has been an increasing recognition by governments and private sector for incorporating ways to compensate biodiversity impacts and achieve No Net Loss (NNL) and preferably a Net Gain (NG) of biodiversity when projects take place. The idea behind these offsets is to make businesses responsible for undertaking conservation outcomes for offsetting the adverse consequences of their actions on biodiversity. This can be achieved systematically through application of a decision-making framework involving a sequence of steps including avoidance of impacts, minimisation of inevitable impacts and undertaking on-site restoration activities. This finance mechanism has been implemented successfully in Ghana, Mexico, Qatar, South Africa and Uganda.

Climate credit mechanisms allow entities to mitigate emissions at the lowest possible cost through the purchase of credits. These mechanisms have mostly been the compliance mechanisms under the Kyoto Protocol, namely, Clean Development Mechanism (CDM), Emissions Trading and Joint Implementation. As the name suggests, these financing tools help in putting a price on carbon thereby helping in internalising the environmental and social costs of carbon pollution through enabling carbon trading. The most successful emission trading scheme (ETS) is that of EU ETS. The projects which are financed by the CDM cater to end-use energy efficiency improvements, supply side energy efficiency improvement, renewable energy, fuel switching, agriculture and sink projects. India has been one of the hosts for CDM projects and the maximum number of projects are in the field of biomass, cement and energy efficiency.

Ecological Fiscal Transfers

ETFs refer to the share of fiscal transfers to states based on some ecological criteria such as allocating funds for watershed management. This funding mechanism can strengthen the local authorities to create new conservation areas vis-à-vis protecting the existing areas and is a measure of effectiveness of domestic financial systems. It helps in creating an opportunity for dealing with scale-related conservation issues in the sphere of public Some effective examples are available in Brazil, France, Portugal and India as is highlighted in table 2.

***Table 1**: Ecological Fiscal Transfers for Environmental Conservation in Selected Countries*

EFT	Scale of Fiscal Devolution	Scope	Coverage	Annual Payments	Total Payments	Period
Brazil	State to Local	Protected areas	Not available	Not available	R$ 216 million	2002-2008/09
France	National to Local	Protected areas	Not available	Not available	~2.7 million €	2011
Portugal	National to local	Protected areas	314,000 (conservation areas)	25-50 €	13 million €	2008
India	National to States	Forest cover	39,470,000 (very dense or moderately dense forest)	$174-303	~$5.7 billion	2016

Source: Busch and Mukherjee (2017), Encouraging State Governments to Protect and Restore Forests Using Ecological Fiscal Transfers: India's Tax Revenue Distribution Reform

Environmental Trust Funds

These funds have independent legal entity and act as an investment vehicle to help mobilizing, blending, and overseeing the collection and allocation of financial resources for environmental purposes. These funds are usually allocated by national government to projects for purpose of biodiversity conservation, wildlife protection, forest conservation, climate change mitigation and adaptation purposes. The projects entail rigorous management, solid monitoring and evaluation, and high levels of transparency and accountability. These funds also offer new possibilities for public-private partnerships and decentralization of decision-making. (See Meyers, 1997; Starke, 1995). Some examples of this include the National Environment Fund (FONAMA) in Bolivia and the Bhutan Trust Fund for Environmental Conservation, the Mexican Nature Conservation Fund (FMCN), and the China Trust Fund for the Environment etc.

According to Bayon et al., 1999, the trust funds are usually of three types, viz. (i) endowments which invest their capital and use only income generated from those investments to finance activities; (ii) sinking funds which are designed to disburse their entire principal and investment income over a fixed period of time (usually 6-15 years); (iii) revolving funds that receive new resources on a regular basis—e.g., proceeds of special taxes, fees or levies designated to pay for conservation programs—which replenish or augment the original capital of the fund and provide a continuing source of money for specific activities.

Lotteries

Use of lottery is an innovative financing mechanism used by governments and civil society to raise funds for benevolent purposes for social and environmental protection purposes. Although instances of using lotteries to finance SCP activities have been sparse in the Indian case, there exist evidence of financing through these innovative mechanisms in the developed economies. Traditionally known as conservation finance, some of the sources of these finance are the national governments, foundations, corporations and other private sector entities. Most of the money comes in the form of donations and explicit dependence on cash flows is not sought after. Examples of this include the conservation of pangolins and rhinoceros (Withers and Zoltani, 2020). Additionally, some examples of successful mobilisation of conservation trust funds include Mexican Fund for the Conservation of Nature (FMCN), Bangladesh Tropical Forest Conservation Foundation, Phoenix Islands Protected Area (PIPA) Conservation Trust, Kiribati, Banc d'Arguin Coastal and Marine Biodiversity Trust Fund (BACoMaB), Mauritania, Sangha Trinational (TNS) Foundation and Mesoamerican Reef Fund (MAR)[7].

Environment Taxes

The different types of environment taxes used across the globe can be categorized as follows, viz. Taxes on emission and effluents, product taxes and taxes on natural capital. In the European Union (EU), a significant proportion of revenue is generated from these taxes. The following table is indicative of the same.

***Table 2**: Comparison of Environment Taxes across Countries*

Tax as % of GDP	Countries
20-22	USA, Canada, Greece, Switzerland, Turkey, Australia
26-29	Germany, Iceland, Spain, Finland. Poland, New Zealand
31-33	Ireland, Portugal, Slovakia, Denmark, Czech. R, Hungary
34-35	Norway, Austria, Sweden, UK
39-43	France, Italy, Luxembourg, Netherlands, Belgium

Source: Sterner and Kohlin (2003), Environment Taxes in Europe

[7] *For further details of the fund performance, please visit https://pubs.iied.org/pdfs/16574IIED.pdf*

Enterprise Challenge Funds

ECFs are concessional grants provided to profit seeking projects undertaken by the private sector with measurable environmental and social outcomes. These funds can mitigate market risks attempting to fight social and environmental degradation. Responsible and Accountable Garment Sector Challenge Fund (RAGS) funded by DFID which started in 2010, supports projects aimed at improving conditions of vulnerable workers in the ready-made garment production sector. The fund aims to benefit workers in low and lower middle-income countries in Asia and Sub-Saharan Africa that supply the UK market[8].

Green Bonds

Green bonds are very similar to the traditional bonds with the only difference that the proceeds of the bonds are invested in projects that yield environmental benefits. They can mobilize resources from domestic and international capital markets based on the country of issuance and are invested in projects pertaining to renewable energy, Energy efficiency (including efficient buildings), Sustainable waste management, Sustainable land use (including sustainable forestry and agriculture), Biodiversity conservation, clean transportation, sustainable water management (including clean and/or drinking water) and climate change adaptation. In India, the proceeds from green bonds have been used to finance renewable energy, energy efficiency, low carbon transport, sustainable water, climate adaptation, agriculture and forestry and waste.

Payments for Eco-system services (PES)

These are fees incurred by the user of ecosystem for the services rendered by the provider. Globally, the services an ecosystem provides are getting increasing policy attention initiated through gaining international recognition at the Conference of Parties to the Convention on Biological Diversity held in Nagoya, 2010 witnessing acceptance of environmental goods part of the national accounts.

Social and Development Impact Bonds

A Social Impact Bond is defined as a contract with the public sector or governing authority, whereby it pays for better social outcomes in certain areas and passes on part of the savings achieved to investors. The return from SIB is contingent on the performance of the service providers in achieving specified social outcomes. However, these bonds are riskier because if these social outcomes are not achieved, the investor can lose its investment (interest plus capital). The functioning of the Development Impact Bond (DIB) is similar to that of a SIB with the only difference that the investors are repaid by a philanthropic funder or an aid agency.

[8] *https://www.enterprise-development.org/wp-content/uploads/RAGSFinalReportNov13.pdf*

Taxes on Pesticides and Chemical Fertilizers

Taxes on certain pesticides and chemical fertilizers can mobilize fiscal revenues while mitigating the negative effects associated with pesticide/fertilizers application and promoting sustainable agriculture practices.

Crowdfunding

Crowdfunding is an innovative form of financing. The protagonists are the members of the crowd, the fundraiser, and the online funding platform that manages flows between the two. The main advantage of crowdfunding is that it renders traditional financial intermediaries unnecessary. As the transactions are made online through internet, individuals invest directly in projects to meet the funding needs of entrepreneurs or ventures. Backers receive either a social or economic return. In recent times, crowdfunding has gained significant traction to finance renewable energy investments. Mostly commencing in the US and UK, it has rapidly spread to developing countries. According to Nigam et al. (2018), in China it is estimated to be $100 billion. Estimates for India, Philippines, Nepal and Mexico are $27.8 million, $26.9 million, $25.5 million and $24.8 million respectively. Some of the well-known platforms in this field are Abundance Generation (UK), Mosaic (US), Sun Funder (US), Collective Sum (US) etc.

Chapter

3

OVERVIEW OF FINANCE FOR SUSTAINABLE CONSUMPTION AND PRODUCTION (SCP) IN SPECIFIC SECTORS IN SOUTH AND SOUTH-EAST ASIA

Chapter 3: Overview of Finance for Sustainable Consumption and Production (SCP) in specific sectors in South and South-East Asia

Sustainable consumption and production refers to an ambit of initiatives, policy-based or market-based that address the entire life cycle of resource use in a systemic manner- right from their extraction to their disposal or re-integration into the economic cycle.

Countries in Asia have been experiencing rapid growth in economic activities resulting in higher demand for energy. This has led to growing concerns regarding the over-extraction of natural resources and unsustainable production and consumption patterns. There is a need of upscaling and re-implementation of various initiatives under SDG 12 to enhance the fundamentals of achieving circular economy in Asia[9]. As a matter of fact, the Asia-Pacific region emits half of the world's greenhouse gases and continues to experience massive deforestation[10]. Hence, decarbonisation efforts along with sustainable consumption and production initiatives need to be undertaken. Consequently, this also explains the need for public, private, innovative sources of finance to fund these sustainable initiatives/interventions. It is particularly important that initiatives and measures undertaken in pursuit of SDG 12 and SCP activities in general are able to mobilise the required funding from both public and private sources.

Given the fact that domestic finances are limited, there is an immediate need to raise private financing. Very recently the Asian bond market have started to emerge. These bonds are used to finance climate resilient infrastructure and low carbon initiatives. The total volume of climate aligned bonds is $895 billion in September 2017 (up from $174 billion in 2012), out of which $221 billion were labelled green bonds (CBI 2017)[11]. The following sub-sections detail out the trend and pattern of investments and finance which have been mobilised in the major economic sectors.

[9] *https://www.southasiamonitor.org/open-forum/pandemic-severely-impacts-sdg-12-targets-asia-pacific-region-unlikely-meet-goals*
[10] *https://reliefweb.int/report/world/asia-and-pacific-sdg-progress-report-2020*
[11] *https://www.adb.org/sites/default/files/publication/403926/adbi-wp814.pdf*

ENERGY EFFICIENCY

Energy is by far the most important sector which deserves urgent attention. All economic activities are energy intensive. Most of this energy is derived from fossil fuels. Under the business as usual (BAU) scenario, the world energy demand is likely to increase from the present 12 Gt to 16 Gt by 2030 (UNEP, 2015). This is untenable. Hence, a paradigm shift in energy consumption is required to sustain all forms of economic activity in the future.

According to IEA estimates, the share of electricity from renewables vis-à-vis fossil fuels has increased in the time period 2000-2018 in East and South-East Asia. The transport sector has been increasingly electrified during this period. Similarly, in the buildings and construction sector, the electricity share has increased in all regions excepting West Asia with the total shares of electricity being 13% in South Asia (excluding India) to 56% in East Asia. As has been previously estimated by the ADB, the South-East Asian region has considerable growth potential in developing sold, wind and biomass potential. One of the primary enablers to facilitate financing of clean energy is innovative business models. To promote distributed renewable energy, some of the business models proposed by ABD include community led business model, private sector led business model, utility led business model, hybrid business models between community and government and hybrid business models between community and the private sector. Some of these business models are illustrated in annex 1.

Despite potential growth opportunities in the clean energy space, there remains significant unexploited potential for power generation from non-fossil fuel sources in this region. Moreover, there is also untapped potential from waste to energy resources in the region.

The ASEAN Plan of Action for Energy Cooperation (APAEC) is designed for ensuring collective energy targets for all members of ASEAN in 2015. The targets stated that 20% energy intensity reduction by 2020 and 30% by 2025 relative to the 2005 levels, and a 23% renewable energy share in the total primary energy supply (TPES) by 2025. Given the targets, ASEAN had reduced energy intensity by 21.9% by 2016[12]. The establishment of national-level targets for each member nation of ASEAN is committed to increasing energy efficiency in its own nation. Due to rapid industrialization, the energy demand is subjected to rise in Asia and the Pacific by 200% between 2010 and 2035, reaching more than 16,169 TWh by 2035 and this will drive for investment of $11.7 trillion in the power and energy sector[13]. The following table highlights some of the country specific requirements on energy use and required investments.

[12] *https://www.adb.org/sites/default/files/publication/648701/adbi-wp1196.pdf*
[13] *https://ww w.adb.org/sites/default/files/publication/648701/adbi-wp1196.pdf*

***Table 3**: Country specific (South Asian) Investment Required for Energy Between 2016 and 2025*

AMS Economy	Required Investment (USD million)	Energy Use *(Kg of Oil Equivalent per Capita)*
Cambodia	126	417
Indonesia	6,019	884
Thailand	2,006	1970
Philippines	601	476

Source: Sector Study on Environmental Services: Energy Efficiency Businesses, International Institute for Energy Conservation (IIEC) (2017); and ADB calculations (ADB 2013)

Another study by IRENA has made estimates on the volume of investment required in renewable energy under two scenarios: Planned Energy Scenario (PES) and Transformative Energy Scenario (TES) across various energy intensive sectors such as power, industry, transport and buildings in different subregions in Asia in the time-period 2016-2050. Under the first scenario which is less ambitious, an average investment of $825 billion will be required. On the other hand, in the TES scenario, which is a more ambitious and low-carbon scenario, investment needed would be significantly higher, i.e. $1.22 trillion. The following table provides the details of the information:

***Table 4**: Sector specific investment requirement (average annual) on Renewable Energy in East and South-East Asia*

Sectors	East Asia ($ billion)		South-East Asia ($ billion)		Rest of Asia ($ billion)	
	PES	TES	PES	TES	PES	TES
Power	252	351	27	61	91	136
Industry	25	35	7	13	22	33
Transport	101	114	10	20	37	70
Buildings	133	196	27	40	78	114

Note: The estimates also include the Pacific region
Source: IRENA. 2020. Global Renewables Outlook: Energy Transformation 2050. Abu Dhabi

ASEAN countries have adopted and initiated laws, and regulations that focus on energy conservation and promotes energy efficiency and conservation (EE&C). Most of the laws for promoting renewable energy have innovative financing components such as feed-in tariff premium payment, electric utility quota obligation, net metering, biofuel blends, tradable renewable energy, emission trading schemes, tendering etc. Some of the fiscal incentives and public financing such as reduction in energy taxes, investment or production tax credits, tax exemptions, subsidies, rebates etc. are included. For example, tax exemptions on EE investments are provided in India, Bangladesh, Indonesia, Nepal, Philippines, Thailand, Vietnam to name a few. Certain other financing mechanisms to increase energy intensity include programs such as Perform, Achieve and Trade. A flagship programme of the Bureau of Energy Efficiency in India, this is based on a market mechanism to cap the energy consumption and generate energy savings which are traded through energy exchanges.

The financial instruments for EE include grants, equity, lease and loans (soft, concessional) from MDBs, results-based lending, fiscal instruments (tax holidays in Indonesia), Revolving Funds. Other innovative instruments- Guarantees, Microfinance, Bonds, Blended Finance. Indonesia, Thailand, and Viet Nam are preparing themselves for the implementation of carbon market initiatives. Feed-in-Tariffs in Malaysia, Philippines, Thailand, Vietnam.

For example, in Cambodia PRASAC is one of the microfinance institutions which focus on lending for EE and climate financing initiatives and have granted $20 million till date. PRASAC offers loans to low-income households and farmers in order to improve energy efficiency and follows this type of funding mechanism.

Another example is that of Thailand which has introduced a feed-in premium programme in 2010 that helped to double the installation of clean energy capacity[11]. China released its Guidelines for Establishing the Green Financial System that also have focuses on energy efficiency in 2016[15] .

Certain multilateral banks such as ADB uses a blend of various capital to finance EE projects. This includes ordinary capital resources, Asian Development Fund, syndicated loans, green bonds, concessional OCR, Clean Technology Funds etc. Partnership programs such as Clean Energy Partnership Facility established in 2007 by ADB is also instrumental in funding SCP projects[16] in developing countries. Moreover, results-based lending for EE projects has also been initiated in Indonesia.

[14] https://www.adb.org/sites/default/files/publication/403926/adbi-wp814.pdf

[15] Green Finance in China: Overview, Experience and Outlook Research Center for Green Finance Development. Tsinghua University National Institute of Financial Research. 2021

[16] biomass, biofuel, biogas, rural electrification and energy access, distributed energy production, waste-to-energy project

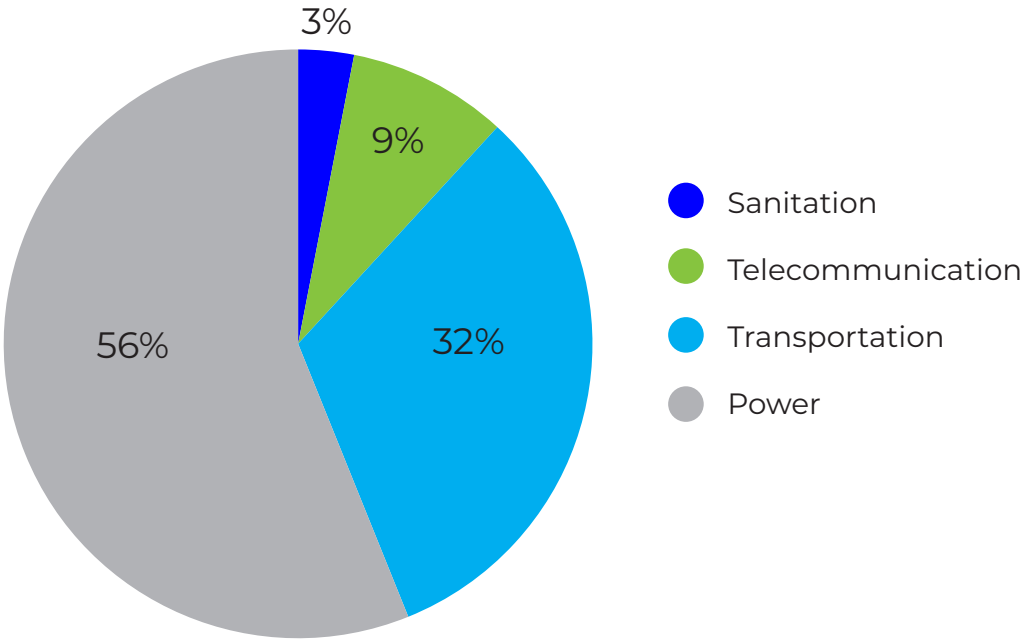
INFRASTRUCTURE

Climate smart and resilient infrastructure development is vital to achieve the SCP goals in Asian economy. Both private and public investment, blended finance models and public private partnerships have essential roles in financing SCP initiatives leading to infrastructural development. $US 1.5 trillion is needed to finance the infrastructural sector by 2040 amongst which $US 1.5 trillion is accrued from the private sector. there is a need to bridge the infrastructural financing gap by transforming the public private funds granted to implement the SCP initiatives especially in the ASEAN nations. In order to achieve SDGs for water and electricity an additional amount of $US 3.5 trillion is needed. The infrastructural financing instruments including infrastructural assets are highly illiquid asset class which are vulnerable to long term sustainability risk and externalities. These financial barriers in the South-East Asian economies are upscaled by various multilateral banks as they are at a good position to lend funds to finance SCP in this sector. As per the World Bank 64 % of infrastructural investments in low- and middle-income countries is financed by the private institutions[17].

The infrastructure financing gap in developing Asia amount to $26.2 trillion between 2016 and 2030 or $1.7 trillion annually (ADB, 2017). 56% of the investment is needed for power sector, 32% for transportation sector, 9% for telecommunications and 3% for sanitation, as illustrated in Figure 3 (ADB, 2017). For South-East Asia alone, $110 billion a year will be needed for infrastructure investment in power, transport, information and communication technology, and water and sanitation in ASEAN through 2025 (ASEAN Secretariat and UNCTAD 2015). Financing of sustainable infrastructure requires new approaches for mobilising and intermediating long-term finance. Increase in the number of climate labelled green bonds for low carbon and climate resilient infrastructure-China, India, Korea. To facilitate institutional investments such as pension funds and insurance, rating and labelling green bonds as benchmark eligible securities is necessary. Few Asian countries have introduced green lending frameworks for infrastructure development; however, for most part banks have limited understanding of what constitutes green or sustainable lending. Lending for SCP constitutes only a small share of total commercial lending and is sold at a premium compared to conventional finance (e.g., SWITCH-Asia and ASrIA 2015a; SWITCH-Asia and ASrIA 2015b).

[17] *https://www.greenfinanceplatform.org/themes/infrastructure*

***Figure 3**: Asia Infrastructure Need by Sector, 2016-2030 (in trillion USD)*



Source: ADB (2017). Fostering Green Finance for Sustainable Development in Asia. ADBI Working Paper 814

AGRICULTURE

Agriculture is exposed to risks from a changing climate and from farm practices that are not environmentally sustainable. South-East Asia is dominated by smallholder agricultural farmers whose contribution to agricultural GDP is significant. The table below highlights these facts.

***Table 5**: Economic Contribution of Smallholder farmers in selected South Asian Countries*

Country	No. of smallholders (million)	% of small holders in total population	Contribution to agricultural GDP (%)
Cambodia	3.7	22	16.3
Indonesia	38.9	14	12.5
Malaysia	1.6	5	7.3
Philippines	11.8	10	8.1
Thailand	12.7	18	6.2
Vietnam	24.4	25	14.3

Source: WWF (2021). Unlocking Smallholder Finance for Sustainable Agriculture

This implies that efforts need to be undertaken to assist smallholder farmers to enhance the sustainability of agriculture supply chains as they are one of the critical agents to transition to sustainable production practices in agriculture. Estimates suggest that the smallholder farmers in South-East Asia require an annual funding of $100 billion. While historically this space has been dominated by public finance, recently private investors are entering into this space to provide funds for innovative business models, one such being sustainable use of land resources. Some of the blended forms of finance used to fund these efforts are illustrated in the table below:

***Table 6**: Finance Products offered by various entities in small holding agriculture*

Entity	Grants	Concessional loans	Market based loans	Equity
State Banks	✓	✓		
Non-governmental institutions	✓	✓		
Community based lenders		✓	✓	
Microfinance institutions		✓	✓	
Social lenders		✓	✓	
Commercial banks			✓	
Development banks	✓	✓	✓	✓
Impact investors		✓	✓	
Corporations	✓	✓	✓	✓
Fintech companies		✓	✓	

Source: WWF (2021). Unlocking Smallholder Finance for Sustainable Agriculture

In some South and South-East Asian economies like Bangladesh, India, Philippines, the local manufacturers have adopted small scale agricultural machinery to expand their market[18]. The access to machinery for small farmers has improved in these countries. Climate change have also imposed several challenges to this sector. Prolonged climate change adversities create extreme weather conditions which lead to loss of production and agricultural productivity especially in ASEAN [19]. Various SCP initiatives are undertaken in South-East Asia to achieve SDG 12. Future Food Together is a universally accepted SCP initiative undertaken by WWF in south Asian economies namely Philippines, Cambodia, Thailand, Indonesia. The project aims at building resilient food infrastructure for the population and combat the greenhouse gas emission.

Climate Smart Agriculture (CSA) is another intervention defined as an integrated approach to managing food-producing landscapes – cropland, livestock, forests, and fisheries – that addresses the interconnected challenges of food security and climate change. The private sector is increasingly investing in climate-smart practices and new business models.

For example, in Cambodia there is a Clean Energy Revolving Fund (CERF) program which provides uncollateralized loans to small agricultural farm for switching to cleaner forms of energy technologies. This fund is used to promote solar water pumps and on-grid solar systems to be used in spice, fruit, and livestock farms in the country.

For instance, in India the Reserve Bank of India (RBI) has included lending to small made for the renewable energy projects and drinking water facilities within the Priority Sector Lending (PSL) targets. Further, it requires banks to allocate 40 % of its lending towards these PSL sectors especially towards agricultural and SMEs.

[18] *https://www.adb.org/sites/default/files/publication/726556/ado2021-update-theme-chapter.pdf*

[19] *https://www.adb.org/sites/default/files/publication/726556/ado2021-update-theme-chapter.pdf*

TOURISM

Sustainable tourism has received heightened global attention as a programme initiated in 2014 under the UNEP-led 10 Year Framework Plan (10YFP) on SCP. World Tourism Organisation (WTO) has defined sustainable tourism as 'tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities'. This definition emphasizes on the pertinent role played by small and medium-sized enterprises to promote sustainable tourism. South-East Asia received 137 million international visitors generating exports worth $164 billion or about 9% of South-East Asia's total exports (ADB, 2011). Travel and tourism contributed 12.1% to South-East Asia's gross domestic product (GDP) and employed 42 million workers, most of whom are women engaged in SME's linked to expansive tourism supply chains.

To cater to the needs of increased financing for SCP interventions, both private and public sources of investments are being mobilised. Markets for green bonds and green financing in Asia is gradually expanding. Public sector promotes access to finance for sustainable tourism investment projects via subsidized loans and grants with environmental criteria, which in turn promotes small tourism firms through sustainable project proposals and public credit guarantees. Further, risk sharing mechanisms are being devised to attract private sector investment in this sector. This is expected to bridge the investment gaps for financing SCP initiatives and promoting sustainable tourism in ASEAN[20].

International funds such as the trust funds created by the GEF support sustainable tourism practices in countries like Thailand and Bhutan by financing biodiversity conservation practices into tourism development activities. In a country like Bhutan, where natural resources and attractions are abundant but vulnerable, policy-driven action such as the High Value, Low Volume tourism policy defines the development and financing strategies of the tourism sector. In most of the study countries, initiatives directed at improving access to finance for MSMEs have benefitted tourism sector businesses in accessing credit and other banking services. Multilateral banks such as ADB and Asian Infrastructure Investment Bank (AIIB) have also played a role in providing sustainable financing to the tourism sector via loans and grants. In Indonesia, for instance, AIIB provided a $284 million loan to the Indonesia Tourism Development Corporation to facilitate the Mandalika Urban and Tourism Infrastructure Project[21]. With growing awareness of sustainable consumption practices, private investors have also been offering funding opportunities to tourism projects and businesses inculcating sustainability values- For instance, Booking.com introduced a Zero-equity Accelerator Programme to provide grants to entrepreneurs working in the sustainable tourism sector.

[20] *https://www.greenfinanceplatform.org/sectors/tourism*

[21] *https://www.aiib.org/en/projects/details/2018/approved/Indonesia-Mandalika-Urban-and-Tourism-Infrastructure.html*

TRANSPORT

The transport sector is heavily dependent on fossil fuels which results in increased GHG emissions. This includes road transport, rail transport: private vehicles- (2 wheelers, 4 wheelers) and freight. A report by UNCRD (2014) states that sustainable or low-carbon transport is more affordable and safer, equitable, resource efficient than traditional modes of transport. It also reduces private road-based travel of passengers. Moreover, the business case of low-carbon transport can be easily established through the reduction in operating costs. According to Replogle and Fulton, 2014, it can save more than $100 trillion in public and private capital by 2050. The Global Commission on the Economy and Climate, 2014 states that sustainable transport can reduce infrastructure capital needs by more than $3trn in the next 15 years. In some earlier works, the transport investment estimates up to the year 2020 were calculated as follows:

***Table 7**: Transport Investment estimates calculated for the time period 2013-2014*

Region	Total transport Infrastructure need	Time frame	Source
South Asia	$400bn-700bn	2013-2020	World Bank (2013a)
India	$340-595bn	2013-2020	World Bank (2013a)

Source: UNCRD (2014)

The various sources of funds are availed through both public and private sources:

Public sources- as primarily been the major contributor of funds for transport sector. However, these funds now need to be channelled from high carbon transport to low carbon transport.

End-user fees - such as Pigouvian taxes are effective in pricing negative externalities related to GHG emissions. These are also effective in making crucial contribution to transport activities. However, the extent of implementation is debatable.

Bonds-According to UNCRD (2014), the transport sector has received a certain fraction of funding from climate instruments with an estimated total of $1.5bn, till 2014. The reason for the substantially low contribution is complex reporting requirements for climate projects and high transaction costs for measuring and verifying transport projects.

Several emerging bond financing strategies show promise for funding sustainable low carbon transport- green bonds, municipal and provincial bonds and project bonds (Green Bonds dominate the

market in Asia). Different types of Bonds - Railway bonds, Transport Bonds are used to finance projects in this sector.

New emerging field includes various models of PPP, MDB's private sector operations. Trends in PPP financing are mixed- PPP investments in South Asia decreased by 20% in 2012, though 60 PPP transport projects reached financial closure, with a total investment of $18.9bn; all of which are road projects in India.

Solid Waste Management

Solid waste management is a pressing challenge in the world and drives the need of SCP initiatives in this sector. Philippines has also derived a "Final Draft Guidelines on the Environmentally Sound Management (ESM) of Waste Electrical and Electronic Equipment (WEEE)'' to develop this sector[22]. Cambodia has also initiated various policies to treat the e-waste and ensure effective e-waste management in the country[23].

There are various financial instruments used to finance the initiatives in the solid waste sector. Various environmental funds and government funds are used to finance the solid waste programs. Financial mechanism of imposing penalties, fines and duties is yet another way of financing SCP interventions in this sector[24].

[22] *https://www.itu.int/en/ITU-D/Environment/Documents/Toolbox/GEM_2020_def.pdf*

[23] *https://www.itu.int/en/ITU-D/Environment/Documents/Toolbox/GEM_2020_def.pdf*

[24] *https://www.apn-gcr.org/wp-content/uploads/2020/09/0f674ef40d27f3dfa34472398174d7d0.pdf*

Chapter

4

Baseline Surveys of Selected Asian Economies on the state of SCP Finance

Chapter 4: Baseline Surveys of Selected Asian Economies on the state of SCP Finance

This chapter focuses on country specific assessments on the state of financing for SCP interventions, activities and programs across the selected sectors for the study. The purpose is to understand, assimilate and analyse the various financing mechanisms that have worked, the key challenges encountered and the specific enablers which have helped to overcome the challenges.

4.1 Country: Bangladesh

Brief Overview on Major Economic activities of the Bangladesh

Bangladesh has been amongst the fastest growing economies of South-East Asia. The Government of Bangladesh has promoted green products in the country. Bangladesh's economic activity includes textile and readymade garment sector, agriculture, small and medium scale industries. But there is slow initiation of renewable energy projects in its economy which has promoted poverty reduction in the country and has attracted and captured a large share of FDI into the nation. Further, Bangladesh has emerged itself from the world poorest nation in 1971 to one of fastest growing economy of the UN's Least Developed Countries (LDC) list in 2026. According to World Bank[25], there has been reduction in poverty from 43.5% in 1991 to 14.3% in 2016, based on the international poverty line of $1.90 a day (using 2011 Purchasing Power Parity exchange rate).

Need for SCP Interventions in the Bangladesh

Green financing exists in various forms in Bangladesh since the past twenty years backed by support from the Bangladeshi government.[26] Green financing has been initiated by the Bangladesh Bank in 2009 for certain specific sectors like solar and waste management but then it expanded to include 47 products across various sectors like agriculture, solar etc., for which financing is made available through loans and grants by commercial banks, bilateral agencies, multilateral banks, non-banking financial institutions (NBFC's), etc. Green financing has been instituted by various NGO's, NBFC's, etc. In a move towards promoting sustainable production and consumption (SCP) in the country. Various banks and NBFC's of Bangladesh have adopted green financing for its various sectors like solar energy, biomass, garment sector, etc. between 2015-2020 (Zheng et al 2021).

[25] *https://www.worldbank.org/en/country/bangladesh/overview#1*

[26] *https://www.greengrowthknowledge.org/sites/default/files/downloads/policy-database/BANGLADESH%29%20Designing%20a%20Sustainable%20Financial%20System%20in%20Bangladesh%20-%20Summary%20Briefing.pdf*

Thrust on SCP Initiatives: A top-down approach

Initiation of sustainable consumption and production (SCP) has been driving the Bangladesh economy for a very long time, but its implementation has become more effective in early 2000 and is continuous till date. The major thrust comes from the central bank of the country i.e., Bangladesh Bank through initiation of the following activities:

- Revamping of existing policies by mainstreaming sustainable consumption and production across existing plans and programmes
- Green Product Development
- Promoting SCP in Textile sector, making it a FDI driven sector of the economy
- Creating Solar Home Systems
- Capacity Development through raising awareness
- Development of the SMEs sector in Bangladesh

The Bangladesh Bank has launched green financing schemes for 'Renewable Energy and Environment Friendly Financeable Sectors' in 2009. Various private commercial banks, financial institutions and non-banking financing institutions of Bangladesh have tied by with the Bangladesh Bank to grant them funds in lieu of green financing for various sectors like solar, biogas, waste treatment and many more [27]. This is because the private commercial banks have high lending rates and face a risk of default from the borrowers who are using funds for the SCP[28]. Therefore, the Bangladesh Bank acts as an enabler in channelizing funds to all the relevant sectors and drives sustainable financing for SCP in the country.

The Government of Bangladesh has a vision of promoting green financing as an accessible tool for the Bangladesh economy. While Bangladesh Bank is the primary enabler and initiator of green financing for SCP in Bangladesh, has led to various policy formations that promotes sustainable financing in Bangladesh. The country has been financial supported by international funding organisations like Green Climate Fund, European Union, World Bank, Asian Development Bank, etc., as all these institutions provides funds in the form of loans and grants to the Bangladesh Bank which in turn re-routes through various implementing agencies.

[27] *https://www.adb.org/sites/default/files/publication/467886/adbi-wp892.pdf*

[28] *ibid 24*

Financing for Sector Specific SCP Initiatives and Strategies

I. SECTOR- AGRICULTURE

Bangladesh economy is heavily dependent on the agricultural sector and has a significant section of manpower engaged in the sector who usually adhere to traditional methods of agricultural practises. Some of the primary challenges faced by the sector include declining yield per hectare, lack of irrigation and lack of good storage facilities, lack of confidence in locally produced food crops, lack of sustainability of agricultural sector and lack of jute crop diversification. In order to combat these challenges, there are various SCP initiatives undertaken by the Government of Bangladesh through a large pool of funds which has been utilised to develop and transform the agricultural sector.

Tools for Financing key SCP initiatives

The implementing and accrediting agencies in Bangladesh receives loans (primary and concessional) and grants from World Bank, European Union, Green Climate Fund. The funds received from these institutions are routed through various partner agencies, one of which is the Infrastructure Development Company Limited (IDCOL), a NBFC which provides concessional loans for development of SCP in Bangladesh. There are various initiatives undertaken to sustainably transform the agricultural sector of Bangladesh and align it with international good practices. The major financial instruments that have till now been used in this sector are loans, grants and blended financing instruments.

Tools for Financing key SCP initiatives

- **Blended Finance:** The global clean cooking program of Bangladesh which aims at making a sustainable market for adoption of improved cookstoves will contribute to enhanced well-being of people living in rural parts of the country and thereby lead to reduced Household Air Pollution (HAP) and GHG emissions. This program is funded through a loan of $20 million USD, equity amount of $42.17 million USD and a GCF grant of $20 million USD. This Program is supported by World Bank and aims to bring in positive socio-economic changes to its beneficiaries. The duration of the project has been from 2018-2021.

- **Loans:** The clean cooling facility program in Bangladesh aims at creating green products such as green surfaces, solar rooftops and solar irrigation that can mitigate damage caused to the climate through unsustainable methods practiced in traditional agricultural sector. These projects receive loans from GCF, World Bank which are accredited to implementing agencies to ensure that the

impact would reach the target beneficiaries. the total loan amount required for the project was $157 million USD. The duration of this project was 21 years in which initial 10 years were the implementation period.

- **Grants:** The jute diversification project aims at promoting environmentally friendly and sustainable use of low-cost green products. This project is implemented via European Union grants and is implemented as a Switch Asia Project. The duration of the project was from 2013 to 2016. The total budget of this project was EUR 22 lakhs (with 90% EU contribution). Another project by Switch Asia aims to strengthen the value chain of horticulture crops especially tomato and mangos. This is yet another grant-based project funded by EU with the total budget of EUR 1999811 (with 90% EU contribution). The project was undertaken in the duration 2016-2019.

II. SECTOR- MANUFACTURING

The Bangladesh economy is expanding and driving a large set of SCP initiatives in the manufacturing sector. This sector drives a large volume of foreign direct investments (FDI) in the country. Therefore, various multilateral banks and NBFC are keen in integrating SCP to increase the competitiveness of this sector. Especially the ready-made garment sector (RMG), textile and jute manufacturing sectors accounts for a substantial share of GDP. The readymade garment sector of Bangladesh has experienced growth from the rising FDI inflow into this sector[29]. There is also a high demand for Bangladeshi leather products which are exported in other countries. Other non-agricultural products such as jute is historically available in Bangladesh and the country has utilized it for generating jute diversification products which form the back bone of the textile and leather products of the manufacturing sector of Bangladesh. However, there are various challenges faced by the sector include lack of jute diversification, lack of sustainable production techniques in the manufacturing units, high GHG emission in the manufacturing processes, lack of cleaner technologies in the manufacturing processes and lack of energy efficient interventions

To combat these challenges, various SCP initiatives are necessary to be undertaken in the manufacturing sector of Bangladesh.

[29] *http://www.ihdindia.org/sarnet/module1/BangladeshManufacturing.pdf*

Tools for Financing key SCP interventions

The major source of finance for SCP in manufacturing sector in Bangladesh is accrued from various multilateral institutions such as World Bank, Green Climate fund and the European Union. The major financial instruments used in financing SCP include concessional loans and grants. One of the main accrediting entities of Green Climate Fund in Bangladesh is IDCOL, a publicly funded NBFC. The IDCOL receives funding from GCF through the Bangladesh Bank and provide concessional loans to both public and private manufacturers.

Specific Cases of Financing

- **Loans:** the readymade garment and textile projects have received loans from the GCF which is further disbursed by the IDCOL in form of concessional loans to private and public manufacturers who ensures sustainability in these sectors thereby leading to reduced GHG emissions across the manufacturing units. As this program is financially supported by GCF, it ensures strict monitoring so that the accrued benefits reach the targeted beneficiaries. The amount of funds requested for this project was $340.50 million USD. The total lifespan for the project was 21 years in which initial 12 years will be the implementation period.

- **Grants:** the garment sector including readymade garments, textiles and leather manufacturing units ensure sustainability across their supply chains. There are various projects implemented through grant support of GCF and the EU. Through ecolabelling of leather and related products this program promotes resource efficiency and sustainability across the value chain. The ecolabelling is a grant-based EU funded project. The tenure of this project is from 2014 to 2018. The total amount of grant required for this project was EUR 2,089,982.00 (EU contribution: 90%).

- Grants from the EU are delegated through the Switch Asia Grants Programme to developing economies including Bangladesh. These are more targeted in project implementation through local partners and supporting the informal sector.

III. SECTOR - INFRASTRUCTURE

Infrastructural development is the need of the hour in Bangladesh in order to transform its economy and lead to poverty reduction in the country. Some of the SCP interventions in the infrastructural sector includes establishment of solar home systems, solar rooftops (especially demanded from Turkey), sustainable building material for construction (Bricks), mini-grids, solar irrigation systems and Resource efficient supply chain for metal products in buildings sector. The Brick Manufacturing and Brick Kiln Establishment (Control) Act-2019 has also facilitated the use of sustainable ricks for construction developments in Bangladesh. The Bangladesh bank is the primary enabler of initiating renewable energy development projects in Bangladesh. The traditional infrastructure sector was dominated by the use of unsustainable production methods that were used but with the transformation and switch that was promoted by the government of Bangladesh created a resource base for sustainable developments in this sector.

Tools for financing key SCP initiatives

The major source of finance for SCP in infrastructural sector in Bangladesh comes from various international institutions such as World Bank, green climate fund, European Union. The World Bank provides concessional loans to the government of Bangladesh which further with the support of IDCOL provides microfinancing for the development of solar home systems in Bangladesh. European Union also provides grants which are implemented as Switch Asia grant programmes for making sustainable building material (bricks) that would be used in creating houses and other commercial developments in Bangladesh. The grant and loans provided are accredited by IDCOL in order to develop solar irrigation projects and solar rooftop project which are highly demanded from Bangladesh by other country like Turkey. Therefore, the use of grants and loans has ensured the implementation of SCP in the infrastructural sector of Bangladesh.

Specific Cases of Financing

Grants: promotion of sustainable buildings and resource efficiency in supply chain management of metal products are the SWITCH-Asia initiatives for SCP, which used the grant provided by the European Union and ensured that it impacts the Bangladesh economy. The duration of the sustainable building project is from 2016 till 2019. The total budget required for this project is EUR 2,000,000 (EU contribution: 90%) Further, climate resilient infrastructure is also promoted by the government of Bangladesh. This project was initiated in 2016 and is expected to continue till March 2022 with a life span of 6 years. The total amount of funds used in the project was $80 million USD[30].

[30] *https://www.greenclimate.fund/project/fp004*

Private sector financing for Renewable Energy in Bangladesh

The government of Bangladesh has a vision to provide electricity to all by the year 2021. Accordingly, some of the sources of electricity is likely to come from renewable sources, especially in the off-grid regions of the country. The Government had an earlier target to generate 5% of the total electricity supply from renewable energy resources by 2015 and increase it to 10 % by 2020. In order to achieve these goals, the government has undertaken several RE projects. Subsequently, the Government has approved the Renewable Energy Policy way back in 2008 which incentivises private sector investments into the energy sector. Additionally, the Sustainable and Renewable Energy Development Authority Act was passed in 2012 whose objectives are to promote, develop and coordinate renewable energy and energy efficiency programmes in the country. It is also expected to monitor all RE activities implemented by the public and private entities and innovate financing mechanism for RE projects. Several investments have been undertaken in wind, solar and biomass programmes. Under different forms of financing mechanism, various donor agencies such as GIZ, SNV Netherlands Development Organisation, USAID Catalysing Clean Energy in Bangladesh and the Global Alliance for Clean Cookstoves have funded projects in the biomass sector[31].

However, due to underdeveloped bond and equity market in Bangladesh, there has been a dearth of private investments in the renewable energy space[32].

Summary of the Findings

The major SCP initiatives have been undertaken due to the constant scope of expansion that is enabled due to the support from multilateral banks such as World Bank, Green Climate Fund and other institutions as they have recognised the cope of sustainable finance for implementing SCP in Bangladesh. The present trend shows that there has been prevalence of green financing in Bangladesh since past twenty years and the continues support from the government sector's focus on green products in the economy is key source of implementation of SCP in Bangladesh. The source of financing these interventions generally come from public, private or blended sources.

The overall challenges faced by the Bangladesh economy is that post covid the market segmentation is tough as the businesses are recovering, there is tough expansion possible as the businesses are non-willing to take risk for green products causing instability of markets. Also, after rising Covid scenario in Bangladesh the manufacturers are not willing to take much risk for green products as it requires collateralized loans making the markets volatile but with slow rate of growth.

Another challenge faced by SCP financing in Bangladesh is that there are only two types of financing instruments available that is loans and grants and lack

[31] *https://www.un.org/en/chronicle/article/achieving-sustainable-energy-targets-bangladesh*

[32] *https://www.econstor.eu/bitstream/10419/190313/1/adbi-wp892.pdf*

of market research in other types of financial instruments like green bond, etc. Further, there is huge loss at the time of repayment of the loans due to the exchange rate differentials for Bangladesh in terms of US dollars. Dollar financing is not cheaper in Bangladesh. There is no hedging in Bangladesh markets for green financing instruments.

4.2 Country- Nepal

Brief overview of major economic activities of the country

Nepal is landlocked country in South-East Asia with a mountainous terrain rich in natural resources and biodiversity. The country's economy is largely agriculture-dependent with the sector contributing to 35% of the GDP and employing about 80% of the population.[33] However, agriculture continues to primarily be on a subsistence or consumption-based level rather than on a commercial scale. Therefore, Nepal continues to import food to satisfy its requirements.

Nepal is endowed with hydropower resources giving it immense energy generation potential, a large part of which remains untapped. Tourism is another sector that benefits from the presence of bountiful nature and accordingly is a significant contributor to the country's GDP. It also provides opportunities for small enterprises to earn livelihoods.

Almost a fourth of the population lives in poverty and without access to several basic services including electricity for its energy requirements. In order to progress towards its goal of becoming a middle-income country while adhering to its climate goals, Nepal requires well-planned and implemented investments and initiatives to create a conducive environment for sustainable and equitable development. Starting from the 1990s, the government of Nepal has identified and incentivised priority sectors such as renewable energy, including sources like solar, wind and biogas. Since 2015, the government of Nepal has been engaging with sustainable development strategies more actively. This includes initiating discussions on low carbon and climate change resilient policies and investments for agriculture, infrastructure and other sectors with scope for implementing sustainable consumption and production practices. At present, the country relies heavily on international support from aid organizations and development-focused financial institutions. Data from the Ministry of Finance indicates that nearly 26% of the nation's budget is funded from foreign aid.[34]

[33] *https://www.climateinvestmentfunds.org/cifnet/?q=country/nepal*

[34] *Promoting Sustainable Consumption and Production for a Better Future in Nepal (oneplanetnetwork.org)*

Need for funding SCP interventions in Nepal

Like most developing countries, particularly ones in Asia, Nepal's development path has struggled to balance social and economic development with environmental damage.

Its geographic position makes it more prone to natural disasters, increasing the need to develop social, economic and environmental resilience among its population. The harsh geographic conditions combined with underdeveloped institutional and economic capacity, makes it especially vulnerable to the vagaries of climate change.

Growing population, exploitation of natural resources and resultant growth in waste generated has led to an urgent need to shift away from a conventional path to development and embrace sustainable consumption and production practices.

Adopting SCP practices will improve production efficiency and preserve the environment while alleviating poverty, creating green jobs, and overall enhancing quality of life.

Thrust on SCP Interventions

Over the years, the Nepalese people have shown immense resilience in the face of severe natural disasters by prioritising and revitalising essential sectors like agriculture, framing policies and budgets in line with its Nationally Determined Contributions (NDCs). Along with encouraging institutional shifts in line with a low-carbon development strategy, the NDCs emphasise priority sectors including green energy and transport, climate-resilient agriculture, and waste management. Additionally, policies such as the Public Private Partnership (PPP) policy 2015 which call for targeted investment and services, recognise the role of the private sector in facilitating the achievement of sustainable development goals. PPP actions have been seen primarily in urban areas and with substantial scope to involve and engage so far untapped sectors including connectivity and transport. [35]

Financing for sector specific SCP initiatives

I. SECTOR- ENERGY [36]

Despite having immense potential for Hydropower, inadequate energy generation has challenged Nepal's socio-economic growth and relegated it to being a net importer of energy. With almost half of the country's population still off the grid, poverty alleviation has also been systemically hindered. Since the 1990s the Government of Nepal has designed several policies and programmes with the objective of promoting renewable energy development. Since national level establishments such as the AEPC are not self-sufficient enough to appropriately finance renewable

[35] *17663-IFC-Nepal-Factsheet-v3.pdf*

[36] *Financing_Green_Growth_A_Review_of_Financial_Sector_in_Emerging_Countries_GIZ.pdf (greengrowthknowledge.org)*

energy projects, the sector relies on substantial financial as well as technical support from Multilateral FIs and development agencies. However, often multilateral banks are hesitant to provide huge amounts of fund to the country due to suspicions of corruption, mismanagement and inadequate capacity of Nepalese institutions.

Financing SCP Initiatives in Energy Sector

- One of the more successful programmes was the Energy Sector Assistance Programmes, 1999 (ESAP) that was able to improve access to finance and lower investment costs by introducing subsidy schemes. Among other actions, the ESAP worked towards training local financial institutions to assess and provide loans for Solar Home Systems. These retail loans were made possible by large scale commercial FIs wholesale lending to local FIs.

- In 2006, the definition of 'Deprived' sector was expanded to include clean energy and small business projects. This allowed for greater flow of credit into this sector. These targets were further raised in 2012.

- In 2009, the Scaling up Renewable Energies Programme was approved by the Climate Investments Fund. The programme allocated up to $40 million to scale RE generation in Nepal.

- In 2012, the National Rural and Renewable Energy Programme was launched which included creating a Central Renewable Energy Fund (CREF). This fund served as the principal institute responsible for delivering credit, subsidies as well as soft loans to the renewable energy sector. The government provided 40% of the fund's finance with the rest coming international donors such as the German KfW.

- In order to guarantee quality of projects and assure international agencies, the CREF will be managed according to international standardised fund management processes and financial audits.

Barriers to Financing in Energy Sector

- Financial institutions don't have adequate capacity to evaluate technical projects and require trustworthy ratings providers to reduce information gaps.

- None of the policies have been able to address the institutional obstacles existing within financial institutions, such as low base capital with banks, lack of risk assessment capacity leading to higher perceived risk and passing up of lending opportunities due to lack of awareness.

II. SECTOR- AGRICULTURE

Financing Initiatives in Agriculture

The agriculture sector continues to be the dominant economic sector in the country. However, the sector has not been able to keep up with technological advancements and modern farming techniques and practices. In addition to food insecurity, the poor production capacity has also compounded the problem of rural to urban migration of the youth due to lack of consistent livelihood opportunities. Given the underdeveloped status of the country's economy, SCP in agriculture in Nepal would involve not just embedding sustainable practices but also tackling undernourishment by increasing calorie consumption. The National Agriculture Policy of Nepal, 2004 stresses upon sustainable use of natural resources and encourages organic farming and conservation of biodiversity.

- In 2012, the International Fund for Agricultural Development (IFAD) approved an $39 million loan cum grant for the Nepalese government in order to fund a programme for providing improved seeds to promote sustainable, inclusive growth and competition in the sector. [37]

- The Nepalese project under the Pilot Programme for Climate Resilience executed by the International Finance Corporation aims to attract and involve private participants in the agriculture sector. Funds from the project are used to provide training and support to farmers on ways to mitigate climate change caused losses and improve productivity. [38]

- In 2019, the Asian Development Bank approved a $50 million policy-based loan to the government in order to promote commercialisation of agriculture, improve trade standards and enhance food safety on a national scale. [39]

- In order to improve access to banking and other financial services, development agency USAID/Feed the Future (US Govt) partnered with Laxmi Bank in Nepal to launch the Knowledge-based Integrated Sustainable Agriculture in Nepal (KISAN) II project. The project assists Laxmi Bank in expanding Branchless Banking Services among over 25 districts enabling rural and financially disadvantaged populations to access formal and subsidised banking services. [40] The five year long, $32.7 million project will include a Partnership and Innovation Fund and a grants program to facilitate long-term, systemic upgrades in the sector. [41]

[37] *https://www.ifad.org/en/web/latest/-/news/ifad-to-support-loan-and-grant-to-enhance-sustainable-agricultural-growth-in-nepal*

[38] *https://www.climatepolicyinitiative.org/engaging-the-private-sector-in-climate-change-adaptation-early-evidence-from-the-pilot-program-on-climate-resilience/*

[39] *https://www.ifc.org/wps/wcm/connect/news_ext_content/ifc_external_corporate_site/news+and+events/news/impact-stories/planting-a-more-resilient-future-for-farmers-in-nepal*
https://www.adb.org/news/adb-loan-help-develop-agriculture-improve-food-safety-nepal

[40] *https://agrilinks.org/post/expanding-access-finance-nepali-farmers*
https://winrock.org/wp-content/uploads/2020/06/BLB-One-Pager_2Jun2020.pdf

[41] *https://www.usaid.gov/nepal/fact-sheets/kisan-project*

- The Agriculture Development Bank Ltd (ADBL) is the largest financier for agriculture in Nepal. ADBL and other domestic banks partnered with IFAD and the Govt of Nepal in order to remove critical blocks to accessing finance throughout the value chain and enhance climate resilience in public as well private investment strategies. The total financing for the project is $196.92 million with the largest share being contributed by IFAD. Nepal has been benefitting from IFAD loans since 1978. [42]

***Table 8**: Examples of Sector specific Financing SCP in Nepal*

Sectors / Sources of Funding	Agriculture	Energy & Infrastructure	Transport	Tourism	Manufacturing and Waste Management
Public-Grants and ODA	KISAN II, IFAD Loans		Kathmandu Sustainable Urban Transport Project		Financing Energy Efficiency Programme (manufacturing industry)
			ADB, GEF (Grant + Loan)[43]		KfW, RBBL, Adelphi (2mil euro Grant)[44]
MDB Loans		Upper Trishuli 1- Hydro Power Project			Loan to NMB Bank to boost green finance and credit for SMEs
		Co-financing with National Govt (AIIB - $90 million; Total Project Cost - $ 647.40)[45]			IFC- $25mil [46]
Institutional Investment (Equity)- PE, VC, etc				Community Homestay Network (Start-up/ Social Enterprise)	
				Zero-equity Accelerator Programme (Grant) [47]	

Source: Compiled by authors from various sources

[42] *https://news.fundsforngos.org/agriculture/ifad-and-nepal-to-build-resilience-of-rural-communities/*
[43] *https://www.adb.org/projects/44058-013/main*
[44] *https://www.adelphi.de/en/project/funding-programme-energy-efficiency-measures-nepalese-industry*
[45] *https://www.unescap.org/sites/default/files/Policy%20Brief%20AIIB_Oct19.pdf*
[46] *https://mercomindia.com/ifc-loan-green-financing-nepal/*
https://pressroom.ifc.org/all/pages/PressDetail.aspx?ID=18578
[47] *https://www.sustainability.booking.com/booking-booster-accelerator-program*

finance for the Nepalese population across sectors. This growth, however, has not been enough to make domestic FIs sufficiently capable of financing and undertaking the various risks associated with sustainable, green projects without external support. Despite governmental actions towards expanding the reach of formal financial services, the overall impact has been limited.[48] As a result, the country is still heavily reliant on funding from international and multilateral loans or grants for major priority sector investments like energy and infrastructure.

Nepal's climate smart investment potential over a period of 2018-2030 as estimated by the International Finance Corporation (IFC) is $46 billion[49]. This can be broken down as:

- $24.6 billion in Renewable Energy
- $10 billion in Low-carbon transport infrastructure
- $3.4 billion in Green Buildings
- $4.8 billion in Climate Smart Agriculture
- $686 million in Climate Smart Urban Wastewater
- $83 million in Municipal Solid Waste

***Table 9**: Snapshot of overall SCP funding trends in Nepal*

Sectors	Public		Private		
	Grants & ODA	Debt (Loans + Bonds)	Debt	Equity	Others
Agriculture	✓	✓			
Energy & Infrastructure	✓				
Transport	✓				
Tourism				✓	
Manufacturing and Waste Management		✓			✓ (Result-based financing)

Source: Based on analysis by authors

[48] *Financing Small Scale Commercial Agriculture in the Hills of Nepal: A Case for Bank-CBO Linkage*

[49] *17663-IFC-Nepal-Factsheet-v3.pdf*

4.3 Country: Cambodia

Brief Overview of Major Economic activities in Cambodia

Cambodia is one of the least developed countries of the world with major population dependent on agriculture, tourism and manufacturing sectors due to its cheap labour availability. Over the past two decades, Cambodia has undergone a major transformation, reaching lower middle-income status by 2015 and aspiring to attain a higher middle-income position by 2030[50]. Cambodia has experienced rapid economic growth Gross National Income (GNI) per capita growing from $300 in 2000 to $1,230 in 2017 (current prices, World Bank)[51]. There has been more attention given to the fulfilment of sustainable development goals (SDG's) across each sector in the country.

Need for SCP Interventions in Cambodia

To ensure green growth and circular economy framework in Cambodia the Royal Government of Cambodia has tied up with the World Bank, European union (EU) and other multilateral banks like ADB to facilitate such sustainable practises [52]. Cambodia has developed a SCP roadmap to minimize degrading impacts of environment and promote sustainable consumption and production by ensuring quality of life in the country[53]. Cambodia being a labour abundant nation has a wide scope of expansion in sectors such as tourism, agriculture, transport and infrastructure. In order to strengthen the regulatory efforts of SCP interventions in the country, the Government of Cambodia has created a renewable energy roadmap in 2013 which has been implemented with a vision of sustainability till 2030 and focus on achieving 'Strategic green growth by 2030' in Cambodia. There is also a need of interventions to finance sector specific SCP interventions (Erdiwansyah 2019).

Thrust on Financing SCP Activities

SCP interventions have been initiated in the Cambodian economy since long, however its implementation has become more effective post 2005 and has been growing till date with more robust efforts. The major thrust comes from the Royal Government of Cambodia through the promotion of green growth Principles following sustainable finance and green product development in Cambodia. There have been efforts to promote circular economy in Cambodia via enabling sustainable production and consumption interventions in different sectors of the Cambodian economy. Some of these SCP interventions are installation and building of solar rooftops, biogas plants, promotion of energy efficiency across each sector of the economy, sustainable textile sector and many more.

[50] *https://www.worldbank.org/en/country/cambodia/overview#1*

[51] *https://www.kh.undp.org/content/cambodia/en/home/presscenter/pressreleases/2019/pursuing-cambodia-green-and-sustainable-future.html?utm_source=EN&utm_medium=GSR&utm_content=US_UNDP_PaidSearch_Brand_English&utm_campaign=CENTRAL&c_src=CENTRAL&c_src2=GSR&gclid=EAIaIQobChMIkOOR3Pne9QIVyjArCh1q2QZhEAAYASAAEgK_9PD_BwE*

[52] *https://www.kh.undp.org/content/cambodia/en/home/presscenter/pressreleases/2019/pursuing-cambodia-green-and-sustainable-future.html?utm_source=EN&utm_medium=GSR&utm_content=US_UNDP_PaidSearch_Brand_English&utm_campaign=CENTRAL&c_src=CENTRAL&c_src2=GSR&gclid=EAIaIQobChMIkOOR3Pne9QIVyjArCh1q2QZhEAAYASAAEgK_9PD_BwE*

[53] *http://www.switch-asia.eu/site/assets/files/3071/fullreport-external-cambodia_scp_consultation.pdf*

The Royal Government of Cambodia has developed a "National Strategic Plan on Green Growth Policy (2013-2030)" which ensures the implementation of various SCP interventions across different sector of the Cambodian economy. It involves implementation of the green growth principles which are essential for achieving green growth in the Cambodian economy[54]. The Principles of Green Growth focus on four pillars, which are environment, economy, society and culture to promote green growth, public health, environmental quality, human health, and the preservation of cultural national identity in the Cambodian economy.

The Royal Government of Cambodia has initiated the National Adaptation Plan for financing the implementation of various initiatives to adapt against vulnerability of climate change[55]. The main focus of the government is to build up SCP in sectors which can create circular economy in Cambodia. The National Adaptation Plan is in line with overcoming the existing gaps in the financing process of various SCP initiatives undertaken in the country. The royal government of Cambodia has also initiated national green growth map which aims at restoring the natural capital base of the country while ensuring sustainable financing instruments for SCP interventions in the country.

Financing for Sector Specific SCP Initiatives/Strategies

I. SECTOR- AGRICULTURE

Cambodian economy is one of the least developed countries of the world and a large share of population of Cambodia is dependent on agriculture for its means of living. As this sector engages a large pool of manpower, this can ensure implementation of SCP initiatives in this sector. this drives the need to SCP interventions in the Cambodian economy. Because of Cambodia being an agrarian economy there are dampening impacts of climate change, rising temperature levels, etc. which needs to be addressed via sustaining SCP interventions in the agricultural sector. Some of the primary challenges faced by the sector are inefficient income and food security issues along with lack of irrigation and lack of good storage facilities with creates loss of confidence in locally produced food crops. There is lack of agri-business value chain management and high risk to climate vulnerabilities in the country which drives for various SCP interventions that ensure building of efficient agri-business value chain in the country.

In order to combat these challenges, there are various SCP interventions undertaken by the government in this sector.

[54] *https://www.greengrowthknowledge.org/national-documents/cambodia-national-strategic-plan-green-growth-2013-2030*

[55] *https://www.greengrowthknowledge.org/national-documents/cambodia-national-adaptation-plan-financing-framework-and-implementation-plan*

Tools for Financing key SCP initiatives

The agricultural sector accounts for 20.7% of the GDP and 31.2% of the total employment in this sector by 2019. About 76% of Cambodian population lives in the rural areas and is dependent on agriculture. This sector grew at an average of 1.7% annually from 2010 till 2019[56]. Achieving sustainability and inclusive green growth in the Cambodian agricultural sector is the main driving for of various SCP interventions in this sector which are financed by multilateral banks such as Asian Development Bank[57].

Specific Cases of Financing

- Blended Finance: The program on facilitating climate resilience through sustaining agribusiness value chain in Cambodia which aims at reducing the vulnerability of climate change on major producing crops like rice, maize, etc. The program aims to transform the traditional agricultural sector into creation of agribusiness value chains and agricultural cooperatives by proving climate resilience to ensure crop development in the economy. This program is supported by green climate fund and Asian Development Bank and aims to bring in positive socio-economic changes to its beneficiaries. The project was financed through a loan of US$ 90.00 million from Asian Development bank and loan of US$ 10.00 million from Green Climate Fund along with a grant of US$ 30.00 million from Green Climate Fund. This project was initiated in 2018.

- Grants: The switch to solar program which aims at promoting sustainable consumption patterns in the agri-fishery sector of Cambodia, further encouraging sustainable production practises across MSME's. This a European Union Funded program which has been implemented through a Switch Asia initiative. The total budget of the project was 2,560,000 EUR (EU Contribution 89.84%). The project was initiated in 2020 and will be continued till 2024. Another project namely Waste to Energy for the Rice Milling Sector also aims at promoting sustainable production and consumption of rice production in Cambodia. This is also an EU funded grant-based project and aims to create positive impact to the targeted beneficiaries. The duration of the project was from 2012-2015. The total budget for the project was EUR 2,152,546 (EU Contribution: 89%).

[56] *https://www.adb.org/news/70-million-adb-loan-strengthen-agricultural-value-chain-food-safety-cambodia*
[57] *https://www.adb.org/news/70-million-adb-loan-strengthen-agricultural-value-chain-food-safety-cambodia*

II. SECTOR- MANUFACTURING

The garment sector engages a significant section of population. The efforts to drive SCP interventions in the manufacturing sector is bolstered through the SCP Roadmap formulated by the Royal Government of Cambodia. The Royal Government of Cambodia has initiated various reforms to ensure sustainable production methods in factories and ensures sustainable consumption patterns of the products produced from the Cambodian manufacturing units. But these manufacturing units contribute to high pollution levels and at time uses unsustainable production methods to expand the output generation. This causes adverse impacts on the overall production methods of the economy. The SCP roadmap also draws relevant attention to sustainably treat the solid waste generation of the economy. This drives more need of SCP interventions in the Cambodian economy. Some of the primary challenges faced by the sector include lack of sustainable production techniques in the manufacturing units which means there is use of unsustainable production methods that needs to be overcome. There is high pollution and high GHG emission from manufacturing units which means there is lack of cleaner technologies, outdated manufacturing equipment and lack of energy efficient interventions in the manufacturing units. In order to combat these challenges, various SCP initiatives are necessary to be undertaken in the manufacturing sector of Cambodia.

Tools for Financing key SCP initiatives

The Royal Government of Cambodia has initiated green growth policy to enable SCP interventions in the manufacturing sector of Cambodia. The major financial instruments used in financing SCP include concessional loans and grants. The funds received are granted to specific manufacturing units to initiate sustainable production processes in the factories and further create sustainable consumption of manufacturing products. The European union has also funded a grant-based project to initiate SCP interventions in the garment sector of Cambodia. The European Union has also funded a grant-based project for reducing plastic bag waste and promote SCP interventions in the solid waste sector of Cambodia.

Specific Cases of Financing

Grants: The switch garment project which aims at promoting SCP interventions in the garment sector of Cambodia by increasing competitiveness of the garment manufacturing units and ensuring energy efficiency by promoting renewable energy practices. This project is funded by European Union through Switch Asia. Major garment manufacturers have tied up with global green growth institute to promote sustainable production techniques in major manufacturing units of Cambodia. Private brands like H&M have also signed memorandum with the leading garment manufacturers of Cambodia to ensure sustainable production practices in the manufacturing units that are set up

in Cambodia. The overall budget for this project was 2,995,748 EUR (EU Contribution: 86.94%). The project has been initiated in 2020 and will continue till 2024.

Another project based on grants is based on reducing plastic bag waste. The project aims at promoting environmental and sustainable methods to reduce plastic bag waste in the country. The project aims at changing consumption patterns by altering consumer behaviour towards the plastic bag waste generation and ensures sustainable production methods to treat the plastic bag waste created. This is an EU funded grant-based project which is implemented through switch Asia in order to promote SCP interventions in the solid waste manufacturing and treatment units. The total budget of the project is EUR 1,341,033.46 (EU contribution: 90%). The project duration was three years 2014 to 2017.

III. SECTOR- INFRASTUCTURE

Infrastructural development has been the key enabler of developing Cambodian economy. Cambodia has a large amount of cheap labour available for undertaking various infrastructural development projects. The Royal Government of Cambodia has laid more emphasis on infrastructural development especially renewable energy development projects after 2015 by enabling various policy framework that focus on SCP interventions in this sector. Cambodian economy has huge potential of energy efficiency especially in the infrastructural sector because of the countries increasing focus on renewable energy projects, solar rooftop development projects due to the National Strategic Development Plan Update 2009-2013 (NSDP), the electricity sector is one of the Cambodian government's development priorities. The plan aims to transmit grid-based electricity to 70 % of total households of the economy by 2030.

Tools for Financing key SCP initiatives

The major financial instruments used in financing SCP include concessional loans and grants. The funds received are granted to each infrastructural development project to ensure capacity generation of each project. The European union has also funded a grant-based project to initiate SCP interventions in the infrastructural development sector of Cambodia.

Specific Cases of Financing

Grants: The program to build resilience in building infrastructure in Cambodia is funded by Green Environment Facility and implemented by United Nations Environment Program 2019 aims to ensure SCP interventions in the infrastructural sector of Cambodia, with total project cost amounted to $2,602,947. The project named SPIN- VCL is a European Union funded grant-based project that aims at ensuring sustainable product designing in the infrastructural sector of Cambodia. The total budget for the project is EUR 2,854,782.14 (EU Contribution: 80 %) and the duration of this project was 4 years, 2010-2014. Another project sustainable rattan aims at promoting sustainable production methods for rattan products developed in Cambodian

economy. The duration of the program was from 2009-2011. The overall budget for this project is EUR 2,417,694 (EU Contribution: 80 %).

To illustrate the various instruments of sustainable investments being employed in Cambodia at present, a few examples are provided below.

Summary of the Findings

Cambodia's capital market is developing fast in the recent years[58]. There are driving factor that promotes and harness green finance in sectors, promoting environmental protection and socio-economic development. There is promotion of debt financing and refinancing schemes to finance the SCP initiatives in the country with the aim of promoting ESG and initiating new financing schemes such as green, social and sustainability bonds (GSS Bonds). Cambodian economy has promoted the growth of MSMEs and achieve climate resilience in various sectors such as infrastructure, energy efficiency, manufacturing and agricultural by initiating SCP in these sectors[59].

The national strategic plan 2013-2030 aims at promoting green growth in the Cambodian economy. The major financing received to implement the SCP initiatives in the economy are through loans and grants by various multilateral banks like World Bank, Asian Development Bank, European Union, Green Climate Fund, etc. Further, Cambodian economy has initiated sustainable financing principles which address improvement of financial literacy and the improvement of utilization of funds for sustainable initiatives that are implied in each sector. PRASAC is one of the microfinance institutions which focus on lending for EE and climate financing initiatives and have granted $20 million till date. PRASAC offers loans to low-income households and farmers in order to improve energy efficiency and follows this type of funding mechanism.

The SCP initiatives are financed in Cambodia to ensure development in the country which promotes green financing in the country. The development is supported by appropriate financing which is expected to double to $23.4 billion which accounts for 69.8 % of GDP by 2025[60]. Domestic revenue, domestic private investment is vital source of financing for various SCP initiatives leading to development in Cambodia.

However, Cambodian economy being a relatively small sized country with heavy dependence on agricultural sector is affected by the adversities of climate change. Due to the availability of cheap labour various manufacturing units have been initiated in the country, but there is lack of private sector engagement to boost private capital in promoting energy efficient interventions in the sector.

[58] *https://www.adb.org/news/op-ed/how-cambodia-s-capital-market-can-support-sustainable-investments-kosintr-puongsophol-shu*
[59] *https://www.adb.org/news/op-ed/how-cambodia-s-capital-market-can-support-sustainable-investments-kosintr-puongsophol-shu*
[60] *file:///C:/Users/A557501WIN9/Downloads/DFA%20Report_July_2021.pdf*

4.4 Country: Indonesia

Brief overview of major economic activities of the country

Indonesia is a natural resource-rich country. Made of over 17000 islands, fishing is a source of livelihood for about 6 million Indonesian people, making it the second biggest producer of fish worldwide. Approximately 63% of the country's landmass is covered in forests and the abundance of fertile soil creates the perfect conditions for a variety of crops and plantations, thereby making agriculture a key sector for the economy. [61] With a $1.016 trillion nominal GDP, Indonesia stands as the 16th strongest economy when measured in terms of GDP. It is also one of the world's leading greenhouse gas emitters. In 2019, it became the first country among the ASEAN region to put forth a sustainable finance regulation. Brought into force by the Financial Regulation Authority (OJK), it requires financial institutions and public companies to develop action plans and release sustainability reports. [62]

In addition to the conventional banking system in Indonesia, the nation has also integrated the Islamic banking under its banking architecture (API) in order to develop alternative banking services and wider access. Islamic banking refers to banking operations in compliance of the Islamic (Sharia) law and fosters principles of partnership and mutual benefits. Such an integrated dual banking system supports synergetic and broader mobilisation of public funds while strengthening the financial capacity of varied economic sectors. [63]

Need for funding SCP interventions in the country

In the wake of Covid-19 and an escalating climate crisis, there is an urgent need for funding an economic recovery that is both sustainable and equitable. This would particularly involve inflow of resources for priority sectors such as agriculture, energy, marine industry and tourism[64]. Building farmer's resilience by improving access to finance and crop diversity can enhance food security in the long run. Similarly, channelling resources from fossil fuels to renewable and decentralised energy sources is crucial for strengthening energy security and keeping the country on track to achieve its climate goals and nationally determined contributions.

In order to set Indonesia on the path to sustainable development and achieving its climate goals, an estimated annual investment of $300-350 billion is needed, particularly for production and consumption within sectors like infrastructure, agriculture, energy, forestry, mining, waste. Interventions directed at Sustainable Finance have the capacity to strategically channelise a consumption-heavy economy towards a productivity focused one.[65]

[61] *PowerPoint Presentation (unescap.org)*
[62] *https://sustainablefinanceasia.org/indonesia/*
[63] *https://www.ojk.go.id/en/kanal/syariah/tentang-syariah/Pages/Perbankan-Syariah.aspx*
[64] *Open Access proceedings Journal of Physics: Conference series (iop.org)*
[65] **SF+Case+Study+-+Indonesia+July+7+.pdf (ifc.org)*

Thrust on SCP activities: a top-down approach

The government of Indonesia has displayed clear intent and commitment towards its climate change mitigation efforts and was among the pioneers in formulating and implementing climate finance policies. The regulatory environment that the Financial Services Authority (OJK) is working towards involves coordinated and scaled up actions between the different actors- government agencies, national and international organisations along with the private sector.[66]

Indonesia's journey towards building a regulatory environment conducive of mobilizing sustainable finance began with the OJK joining the Sustainable Banking Network as a founding member in 2012. It has since issued two phases of the Sustainable Finance Roadmap (2015-2019 [67] and 2020-2024 [68 69]) as an umbrella policy, developed green lending models and banking guidelines, defined sustainability reporting requirements, issued Green Bonds (Sukuks) and established the Indonesia Sustainable Finance Initiative (ISFI).[70] The ISFI is a joint-initiative of financial institutions (OJK and 8 major commercial banks) with the support of WWF Indonesia to enhance cooperation and strengthen the sustainable finance ecosystem in Indonesia.[71] It is a market-based undertaking to with the goal to aid the implementation of OJK's regulation on Sustainable Finance Principles and Green Bonds.[72]

As a result of such efforts on a national-scale, 80% of commercial banks have incorporated sustainable finance action plans and increased investments in sustainable projects such as renewable energy, ecotourism and organic farming across their portfolios. Non-banking financial institutes (NBFCs) too have been encouraged to extend financing (micro-finance) and insurance facilities to organic producers and MSMEs with environmentally conscious businesses.[73]

In Indonesia, green bonds have been gaining attention as an additional source of financing for sustainable development projects. Their ability to attract ethical investors, promote the borrower's reputation and supplement a country's green investment mandate, highlight the potential for such debt securities to raise capital specifically for sustainable projects. They are particularly effective in financing energy efficiency projects due to lower cost of capital and fewer legal restrictions. Unlike what is usually observed in South-Asian countries wherein their relatively small green bond markets create a challenge in amassing sufficient demand from institutional investors who require a minimum bond value, Indonesia has managed to find a work around and become the biggest issuer of green bonds among South-Asian nations. This was done by issuing a $1.25 billion green sukuk or an

[66] *PowerPoint Presentation (unescap.org)*
[67] *https://ojk.go.id/en/berita-dan-kegiatan/publikasi/Pages/Sustainable-Finance-Roadmap-in-Indonesia-for-the-Period-2015-2019.aspx*
[68] *https://www.asiaasset.com/post/25170-ojksustain0810-gte-1008*
[69] *The Indonesian Financial Services Sector Master Plan 2021-2025.pdf (ojk.go.id)*
[70] *PowerPoint Presentation (unescap.org)*
[71] *Successful launch of "Indonesia Sustainable Finance Initiative" - EMDF | Emerging Markets Dialogue on Finance*
[72] *https://www.greenfinanceplatform.org/policies-and-regulations/indonesia-sustainable-finance-initiative*
[73] *PowerPoint Presentation (unescap.org)*

Islamic bond. As of 2019, was the leading issuer of green bonds in ASEAN countries.[74]

The framework governing the green bonds was defined by the government of Indonesia itself and requires that proceeds from their issuance be used exclusively to finance 'Eligible Green Projects'. Eligible projects refer to renewable energy or energy efficiency projects, building resilience against climate and disaster risks, and projects related to sustainable waste management, transport, tourism, buildings or agriculture.[75]

The approach being piloted by Indonesia, wherein the entire financial sector is being targeted in an integrated manner creating and using long-term financial instruments such as bonds, stems from the belief that without an overarching effort, impact would be short-lived and wouldn't create the deep-seated transformation that is needed in the transition to a low-carbon economy. For instance, most commercial banks tend to restrict their lending activities to short-term loans.[76] Therefore, in order to finance sustainable consumption and production projects with long gestation periods, such as energy and infrastructure projects, innovative and blended finance tools with risk-mitigating factors are required.

Financing for sector specific SCP initiatives

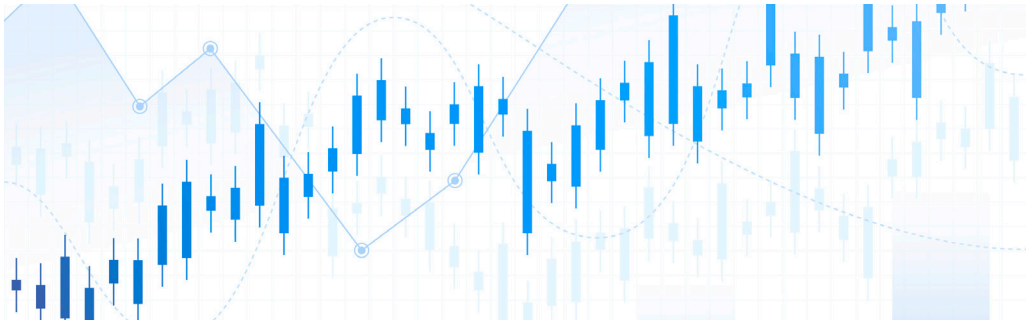
I. SECTOR- ENERGY

The carbon footprint of the energy sector is immense and only slated to grow with the growth in the population and rapid expansion of the economy. Unequal access to electricity in Indonesia has also severely impacted its efforts to distribute income and improve livelihoods. Decentralised renewable energy generation has the potential to overcome access constraints in under-served regions of the country, while addressing climate adversity. Accordingly, the National Energy Policy set out a target of increasing the contribution of renewable energy to 23% of the energy mix by 2025. This target is also in line with the NDCs of Indonesia. However, public funding falls short almost 98% of the investment requirement for the clean energy transition. Private capital flows, too, are restricted by prevailing barriers in the sector including regulatory constraints, poor access to finance and other policy barriers discouraging private investors.[77]

Additionally, the high-risk factors of available energy projects- the small-scales and high unit costs- lead to unattractive returns. Moreover, the perceived risk of renewable energy projects by most financial institutions results in them charging high interests on debt financing. This is made worse by the lack of de-risking instruments in the market. (ibid)

Research by the Climate Policy Initiative (CPI) have highlighted several innovating funding options including capitalising on Public Private Partnerships (PPPs), Joint Ventures (JVs), and risk pooling schemes.

[74] **Green Bonds for Financing Renewable Energy and Energy Efficiency in Southeast Asia: A Review of Policies (adb.org)*
[75] *Green Bonds for Financing Renewable Energy and Energy Efficiency in Southeast Asia: A Review of Policies (adb.org)*
[76] **SF+Case+Study+-+Indonesia+July+7+.pdf (ifc.org)*
[77] *nhancing Decentralized Renewable Energy Investment to Achieve Indonesia's Nationally Determined Contribution - CPI (climate-policyinitiative.org)*



Specific examples of financing

- **Green Bonds**- In Indonesia, one-third of the proceeds from all green bonds have been directed towards energy projects, primarily geo-thermal and solar energy.[78]

- **Combination of financing tools (Grants + Loan + Equity)**- Geothermal Resource Risk Mitigation Project co-financed by the Green Climate Fund (GCF), and the International Bank for Reconstruction and Development International Development Association (World Bank). The project is designed to offer contingent funds and soft loan to geothermal developers in order to help them mitigate early-stage development risks associated with resource confirmation drilling. This objective is in line with the Indonesian government's efforts to scale up geothermal energy to improve energy sustainability and security.[79]

II. SECTOR- AGRICULTURE

Implementation of sustainable finance policy in the agricultural sector in Indonesia has taken several forms. Indonesia boasts of diverse plantations and derives economic gains from commodities such as palm oil, coconut, rubber, etc. However, particularly in the case of palm oil, which is the biggest foreign exchange earner, sustainability issues have led to serious financial, regulatory and reputational risks for financial institutions. The Indonesian government has accordingly implemented regulations and actions to combat adverse environmental and social impacts and all stakeholders, including international banks and investors are required to follow these. Actions include moratoriums on new permits and certifications as specified under the Development of Sustainable Plantations article and Ministry of Agriculture regulations.[80]

The forestry industry in Indonesia is also a booming, industry with products like pulp and paper that fall under the purview of SCP. Given its growth trajectory and direct impacts on forest ecosystems, the industry has significant requirements of green financing schemes. The Centre for Financing of Forest Development led the formation of the Public Service Board of Forest Sector with the aim to finance sustainable development of both small-holder and industrial forestry. Forestry based industries with notable

[78] **Green Bonds for Financing Renewable Energy and Energy Efficiency in Southeast Asia: A Review of Policies (adb.org)*
[79] *https://www.greenclimate.fund/project/fp083*
[80] *https://iopscience.iop.org/article/10.1088/1755-1315/518/1/012042/pdf*

contributions to the country's economy such as the Pulp and Paper industry offer financial institutions the opportunity to offer green finance access to sustainably managed undertakings. (ibid)

Organic agriculture in Indonesia is supported by the Islamic banks by carrying out financing schemes including non-commercial, commercial, supply chain and business sector financing schemes. Islamic banking utilises social funds (e.g., CSR funds), occasionally in combination with government funding via exiting institutional frameworks. Channelling funds through peasant groups or producer collectives, the schemes focus on organic farming techniques along with offering minimum period integrated farming programs. When participating in loans under non-commercial schemes, farmers are only required to repay the principal while forgoing any other form of compensation to the banks. Similarly, commercial schemes define favourable terms (e.g., pre-agreed profit-sharing percentages) for farmers to finance their working capital and other financial needs. (ibid)

Specific examples of Financing

- **Improving access to financial services for small-holder farmers:** Access to insurance for small-holder farmers is limited due to the high risks associated with agriculture. Hence farmers are unable to undertake new and sustainable practices or cultivate crop varieties with lower environmental impact if they aren't as commercially viable. One of the more overarching programs implemented by the Indonesian government is the Insurance program that was mandated by Law no. 19 in 2013 to protect and empower farmers against losses from crop failure. Implemented along with PT. Asuransi Jasa Indonesia (Jasindo) as the appointed executor, the products supported by the government range from rice-farming, cattle-business, aquaculture and fishermen's insurance. In case of the Rice Farming Insurance (RFI) whose realisation began in 2015, the premium is 80% subsidised by the government.[81]

- **Blended-finance instruments:** With the objectives of improving food productivity while reversing land degradation, initiatives such as the Agri3Fund work towards catalysing private finance for the agriculture sector in Indonesia. Blended finance tools essentially provide de-risking services or guarantees such that both the needs of the farmers and the limitations of banks' lending mandates are catered to. The Agri3Fund is structured in a way that it offers technical assistance in addition to financing, further upgrading the lending viability of sustainable agricultural practices.[82]

[81] *https://iopscience.iop.org/article/10.1088/1755-1315/518/1/012042/pdf*
[82] *Open Access proceedings Journal of Physics: Conference series (iop.org)*

***Table 10**: Table 10: Sector Specific SCP Financing in Indonesia*

Sectors / Sources of Funding	Agriculture	Energy & Infrastructure	Transport and Tourism	Manufacturing and Waste Management
Public- Grants and ODA	SCP South-South Grant (Organic rice-farming and other mitigation activities in the agro-food sector) Implemented by WWF- Germany; State Ministry of National Development Planning (BAPPENAS) - Indonesia; Ministry of Environment and Forestry (KLHK) - Indonesia[83]		SUTRI NAMA- Concessional loans + Investment Grants Financing Partners- The Government of Switzerland; PT Sarana Multi Infrastruktur (PT SMI); Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH[84]	
MDB Loans		Geothermal Resource Risk Mitigation Project (ongoing) Financing Partners: Green Climate Fund World Bank; International Bank for Reconstruction and Development; International Development Association[85]	Asian Infrastructure Investment Bank (AIIB), 2018- Loan to the Indonesia Tourism Development Corporation, with a guarantee of the Republic of Indonesia, in support of the Mandalika Urban and Tourism Infrastructure Project.[86]	
Private- Commercial Loans	On lend microfinance: Small-holder financing schemes- Bank Rakyat			

[83] *https://www.international-climate-initiative.com/en/project/klimafreundliche-konsum-und-produktionsweisen-inkl-sued-sued-transfer-scp-south-south-17-i-295-global-a-scp-south-south/*

[84] *https://www.nama-facility.org/fileadmin/user_upload/publications/factsheets/2017-11_factsheet_nama-facility_indonesia_sutrina-ma.pdf*

[85] *https://www.greenclimate.fund/project/fp083*

[86] *https://www.aiib.org/en/projects/details/2018/approved/Indonesia-Mandalika-Urban-and-Tourism-Infrastructure.html*

Sectors / Sources of Funding	Agriculture	Energy & Infrastructure	Transport and Tourism	Manufacturing and Waste Management
Blended	Asia Natural Capital Design Funding Window-Improving credit access and training for sustainable coffee farming- Blended Solution and Grant by Convergence Finance and the RS Group[87]			
Institutional Investment (Equity)- PE, VC, etc				The Tropical Landscapes Finance Facility- Multi-tranche Sustainability Bond for sustainable production of natural rubber: UN Environment, World Agroforestry Centre, ADM Capital and BNP Paribas US$ 95 million[88]

Source: Compiles by authors from various sources

[87] *https://www.convergence.finance/news-and-events/news/1vOSBivnhb0khoHGsHAfQN/view*
[88] *https://www.unep.org/news-and-stories/press-release/financing-natural-rubber-plantation-indonesia-promoting-sustainable*

Summary of findings

Indonesia's approach to sustainable financing in general is primarily policy-led and mandatory. Given its fairly matured domestic banking sector, it has been able to implement financial reform on national scale. Its sources of public financing have included support from international and multilateral development banks. In March 2020, the World Bank approved a $300 million loan to support the Indonesian government in its reform agenda directed towards promoting sustainable finance and safeguarding the financial sector from economic shocks [89]. The green bond market in Indonesia too, is almost entirely driven by the government with 99% of these bonds being issued by the national government. [90]

Such reforms have translated to greater access overall for priority SCP sectors such as energy, agriculture, infrastructure and tourism. In the table above, we can find a glimpse of the various sources and instruments available to finance the different sectors.

However, despite the concerted efforts, barriers to SCP financing continue to exist with the Indonesian financing system. As we can see in the graph, access to sustainable finance in most priority sectors is still scarce. Even for the agriculture sector which seems to be doing better than the rest, the reach of green finance overall is still limited.

Domestic financial institutions in Indonesia such as the OJK are also part of global financing platforms like the Sustainable Banking Network and receive technical training and capacity building support from governments of developed countries like the UK and Switzerland. Support in these forms goes a long way in addressing the gaps in financing, particularly private financing since commercial banks don't yet have the required know-how to access innovative SCP business models.

***Table 11**: Table 11: Snapshot of overall SCP Funding in Indonesia*

Sectors	Blended	Public		Private		
		Grants & ODA	Debt (Loans + Bonds)	Debt	Equity	Others (Crowd-funding)
Manufacturing		✓				✓
Transport		✓	✓	✓		
Tourism		✓				
Agriculture	✓	✓		✓		✓
Infrastructure		✓	✓			

Source: Based authors' analysis

[89] *https://www.thejakartapost.com/news/2020/04/14/explainer-the-progress-and-challenges-of-sustainable-financing-in-indonesia.html*

[90] **Green Bonds for Financing Renewable Energy and Energy Efficiency in Southeast Asia: A Review of Policies (adb.org)*

4.5 Country: Philippines

Brief Overview of Major Economic activities in Philippines

Philippines has emerged one of the fastest growing countries of the East Asia Pacific region[91]. The major share of the country's population is dependent on real estate industry, business process outsourcing, manufacturing industries, finance and insurance-based industries[92]. Philippines is the most climate vulnerable and disaster-prone country and is ranked 9 in World Risk Report 2019[93]. Philippines has undergone rapid urbanisation and observed inclusive growth with falling poverty rates in the economy. The poverty rates have declined from 23.3 % in 2015 to 16.6 % in 2018.Poverty declined from 23.3% in 2015 to 16.6% in 2018 while the Gini coefficient declined from 44.9% to 42.7% over the same period[94]. The World Bank has initiated various development projects that have boosted the banking system of the country. The banking system of the economy has ensured capacity generation, development of analytical and effective policy formation[95].

Need for SCP Finance in Philippines

Philippines has an institutional mechanism that supports the implementation of the sustainable consumption and production initiatives in the economy. In order to ensure green growth and circular economy in Philippines, the National Economic and Development Authority (NEDA) and Asian Development Bank (ADB) has formulated sustainable production and consumption roadmap in 2018[96]. This NEDA plan is being implemented in two phases first is the scoping phase and second is the Engagement and development phase[97]. The government of Philippines has also initiated The Philippine Development Plan 2017-2022 to sustain and promote green economic growth in the country.

[91] *https://www.worldbank.org/en/country/philippines/overview#1*

[92] *https://www.worldbank.org/en/country/philippines/overview#1*

[93] *The Philippines Grows Its Green Finance Market | SEADS (adb.org)*

[94] *https://www.worldbank.org/en/country/philippines/overview#1*

[95] *https://www.worldbank.org/en/country/philippines/overview#3*

[96] *https://development.asia/case-study/developing-action-plan-sustainable-consumption-and-production-philippines#:~:text=In%202018%2C%20supported%20by%20an,for%20the%20average%20Filipino%20to*

[97] *https://development.asia/case-study/developing-action-plan-sustainable-consumption-and-production-philippines#:~:text=In%202018%2C%20supported%20by%20an,for%20the%20average%20Filipino%20to*

Thrust on Financing SCP Initiatives

SCP interventions have been initiated in the Philippines since a considerable since long time. The major thrust on green financing in Philippines has gained momentum with the launch of the Philippines Sustainable Finance Roadmap by the department of Finance of Philippines and the Central Bank of Philippines i.e., 'The Bangko Sentral ng Pilipinas (BSP)'[98]. There is special emphasis on developing circular economic models for various sectors such as agricultural, renewable energy sector and energy efficiency of infrastructural and manufacturing sector of Philippines. The Green Growth, facilitation and green product development in Philippines have been initiated post the adaptation of sustainable production and consumption roadmap. Revamping of existing policies by mainstreaming sustainable consumption and production across existing plans and programmes in various sector of the Philippian economy. The Philippine Action Plan for SCP (PAP4SCP) will ensure achievement of the stated targets which are sustainability in infrastructural management, education, innovation and technology and policy reframing with core emphasis on SCP[99]. This would be financed through various innovative financial instruments like loans, grants, green bonds, etc. The central bank along with the department of finance of Philippines will ensure that the funds are mobilized in such a way that the targets stated in achieving green growth for the nation are fulfilled.

Financing for Sector Specific SCP Initiatives

I. SECTOR- AGRICULTURE

Philippines accounts for almost one third population dependent on the agricultural sector[100]. Agricultural labour force (farmers), fishermen are adversely affected due to climate change vulnerability and disaster-prone settlements in the Philippines economy. There are climate change vulnerabilities that impact agricultural activities like increase in sea surface temperature from 1 to 4-degree Celsius, high volatility of tropical cyclones and water deficit issues that prevail for varied water-oriented crop production. All these climate vulnerabilities impact yield per hector affecting the crop rotation patterns. This further creates inefficient space for food storage and low building of agribusiness value chains in the economy. This causes unstable energy access for agricultural activities.

All above stated challenges affect the inclusive green growth in the agricultural sector of Philippines. This drives the need of various SCP interventions, which should be initiated in the country for

[98] *https://www.bsp.gov.ph/SitePages/AboutTheBank/AboutTheBank.aspx#:~:text=The%20Bangko%20Sentral%20ng%20Pilipinas,Central%20Bank%20Act%20of%201993.*

[99] *https://sdg.neda.gov.ph/philippine-action-plan-for-sustainable-consumption-and-production-pap4scp/*

[100] *https://prospernet.ias.unu.edu/wp-content/uploads/2012/09/SPC-learning-case-7_final.pdf*

sustaining the agricultural sector. The Philippines Development Plan 2017-2022 and the PAP4SCP aims at initiating SCP initiatives in the agricultural sector and ensuring that country performs well with achievement of its policy targets. The Philippines Partnership for Sustainable Agriculture (PPSA) is a SCP initiative which aims at building farm sizes, farm products and ensuring farmers profitability by ensuring inclusive green growth in agricultural sector of Philippines[101]. Another SCP initiative undertaken by the World-Wide Fund which is named as "SUSTAINABLE DINING" promotes sustainable food products used to build 24 restaurants in tourist attracted areas and aims at monetizing food wastage[102]. These are some of the SCP initiatives undertaken in the Philippian economy to adhere to the objectives of the Philippines Development Plan 2017-2022.

Tools for Financing key SCP initiatives: Specific Cases

- **Grants:** The sustainable dining project which aims at creating 24 sustainable restaurants in tourist attracted places of Philippines to ensure reduction in food wastage and better use of raw material in preparation of food at these restaurants. The implementing partner of this project is the World-Wide Fund along with other institutional partners. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety have given a grant of EUR5,859,999.00 for the project has been initiated in 2017 and will continue till 2022[103]. Another project named as "Global Partnership for Improving the Food Cold Chain in the Philippines" aims at promoting energy efficiency for low carbon utilizing technology for food refrigeration value chain in the country. The project is funded through a Global Environment Facility (GEF) grant of $ 2,000,000 (non-including the GEF Fees of $190000) along with co-financing amount of $25,509,500. The total cost of project is $27,509,500. The project is implemented by United Nations Industrial Development Organization in 2019 and executed by Department of Environment and Natural Resources (DENR)[104].

- **Agri Finance Working Groups:** The Philippines partnership for sustainable agriculture has developed an Agri finance working group via Inclusive Agricultural Value Chain Consortium (IAVCC) which aims to mitigate the financial risk faced by the investors to grant loans to the agricultural sector for various SCP interventions[105]. The working groups of PPSA and IAVCC are working together to ensure creation of financial policies and instruments that would create Agri business value chain in the economy.

[101] *https://www.ppsa-ph.org/#:~:text=The%20Philippines%20Partnership%20for%20Sustainable%20Agriculture%20(PPSA)%20builds%20and%20nurtures,and%20achieving%20inclusive%20agricultural%20growth.*

[102] *https://www.international-climate-initiative.com/en/details/project/establish-sustainable-consumption-and-production-a-south-south-transfer-scp-southsouth-17_I_295-538*

[103] *https://www.international-climate-initiative.com/en/details/project/establish-sustainable-consumption-and-production-a-south-south-transfer-scp-southsouth-17_I_295-538*

[104] *https://www.thegef.org/projects-operations/projects/9921*

[105] *https://www.ppsa-ph.org/agri-finance*

II. SECTOR- MANUFACTURING

Philippines have developed sustainable manufacturing and an industry roadmap to strengthen its manufacturing and industrial sector by ensuring inclusive green growth. Philippines has to position itself in the global market by making the industrial sector more competitive, sustainable and boost "Green Economic Development (GED)". The leading manufacturing units of Philippines include Automotive Manufacturers, Auto Parts Industry, Pulp and Paper Industry, Plastic Industry, Housing Industry and Furniture Industry.

The manufacturing sector of Philippines has to overcome several challenges by increasing product and process innovation in manufacturing units which will enhance the cost performance and build technological innovation. This will also build effective value chains and boost capacity generation of the manufacturing units.

The main SCP focus is to ensure energy and resource efficiency by improving product innovation in the manufacturing sector of the economy. The green economic development ensures green financing available for promoting green jobs and growth of manufacturing and service-based industries of Philippines. The Philippines development roadmap 2017-2022 is in line with enabling a sustainable environment for building green growth of the manufacturing sector of the country.

Tools for Financing key SCP initiatives: Specific Cases

Grants: The Lead Paint Elimination Program which aims at reducing the childhood lead paint diseases, it is funded by European Union and implemented through The SWTICH Asia. The amount of grant received for this project is EUR 1.8 million (EU Contribution: 77.8%) in the time period 2011 - 2015[106]. Another project on 'Promoting sustainable handwoven eco-textiles in Philippines' aims at promoting SCP interventions in the eco-textile industry by upscaling and market segmenting in Philippines. This has also being funded by EU and implemented through SWITCH-Asia. The amount of grant received for this project is EUR 1,999,972.60 (EU Contribution: 80%) for the time period 2013 –2017[107].

III. SECTOR- INFRASTUCTURE

The Government of Philippines has embarked 2019 as the "Golden Year of Infrastructure" as the government entered more than 100 infrastructural development projects by overcoming the challenges posed by this sector, which includes poor quality infrastructure, bad transport congestion and high greenhouse gas emissions. The program "Build Build Build" aims to raise the infrastructural spending up to 7 % of Philippines GDP by 2019[108].

Green infrastructural financing strengthens climate resilience and scaling up of infrastructural development projects by public private partnerships (PPP). The

[106] *https://www.switch-asia.eu/project/lead-paint-elimination/*
[107] *https://www.switch-asia.eu/project/handwoven-eco-textiles/*
[108] *Green Infrastructure Investment Opportunities: Philippines 2020 Report (adb.org)*

Public Investment Program (PIP) 2017-2022 promote the amalgamation of the efforts of government and non-government institutions of Philippines to upscale and initiate several green infrastructural building programs. This will be in line with deduction of 70 % of greenhouse gas emissions by 2030[109].

The green financing trends have been strongly observed in Philippines, where there is an increasing focus towards green labelled products. Philippines have been the leader of green finance in ASEAN nations[110]. Philippines has a mix of both debt-based and equity instruments used for green financing the infrastructural and renewable energy development projects[111]. The first green bond in ASEAN was issued by AP Renewables Inc. in 2016, in Philippines. The BSP bank has invested in $200m green bonds. Besides, this green financing opportunities there have been significant green and sustainability banking system which has created a green stock exchange system for Philippines .

Tools for Financing key SCP initiatives: Specific Cases

- **Blended Finance:** The "ASEAN Catalytic Green Finance Facility" is a green finance program which aims at promoting an effective financing scheme via enhancing public-private partnerships to promote green infrastructural development and upscaling of on-going projects in the economy. The project is based on a blended finance model, which uses both loan and grant as financial instruments. Green Climate Fund has provided a loan of $280 million and a grant of $20 million for this project. Further, this project is co-financed by Asian Development Bank, through a loan of $3385 million. The duration of this project. The implementation of the project will be from 2021 to 2039.

- **Grants:** The project titles as 'Development for Renewable Energy Applications Mainstreaming and Market Sustainability (DREAMS)' aims at promoting the commercialization of the renewable energy market via removing restrictions on the renewable energy markets such that it will attract more private investment in the country. The project is funded through a Global Environment Facility (GEF) grant of $5,200,000 along with co-financing amount of $38,302,222. The GEF fee included in the total cost of the project is $494,000. The total cost of the project is $43,602,222.00. The project duration was 2013-2016 [112].

[109] *Green Infrastructure Investment Opportunities: Philippines 2020 Report (adb.org)*
[110] *Green Infrastructure Investment Opportunities: Philippines 2020 Report (adb.org)*
[111] *Green Infrastructure Investment Opportunities: Philippines 2020 Report (adb.org)*
[112] *https://assembly.thegef.org/project/development-renewable-energy-applications-mainstreaming-and-market-sustainability-dreams*

***Table 12**: Sector Specific SCP Financing in Philippines*

Sectors / Sources of Funding	Agriculture	Tourism	Infrastructure	Manufacturing	Transport
Public-Grants & ODA	"Global Partnership for Improving the Food Cold Chain in the Philippines [113] $27,509,500	Building Energy Autonomous Resorts Creating Appropriate Technology Solutions EUR 2,108,859 (EU Contribution: 80%)[114]	Development for Renewable Energy Applications Mainstreaming and Market Sustainability (DREAMS) $43,602,222.00 [115]	'Promoting sustainable handwoven eco-textiles in Philippines EUR 1,999,972.60 (EU Contribution: 80%)[116]	Increasing the Uptake of High Efficiency Motors (HEMs) and Drive Systems in Philippine Industries EUR 1,970,469.20 (EU contribution: 80%)[117]
Blended			ASEAN Catalytic Green Finance Facility 20 million (grant) and 280 million (loan)[118]		
Debt based financing-Bonds			Green structured bond (issued by AC Energy Finance LTD.) $585m with a 5-year tenor and a coupon of 4.75% per annum, priced at 99.451.[119]		

Source: Compiled by authors from various sources

[112] *https://assembly.thegef.org/project/development-renewable-energy-applications-mainstreaming-and-market-sustainability-dreams*
[113] *https://www.thegef.org/projects-operations/projects/9921*
[114] *https://www.switch-asia.eu/project/zero-carbon-resorts-zcr/*
[115] *https://www.thegef.org/projects-operations/projects/5363*
[116] *https://www.switch-asia.eu/project/handwoven-eco-textiles/ https://www.switch-asia.eu/project/handwoven-eco-textiles/*
[117] *https://www.switch-asia.eu/project/high-efficiency-motors/*
[118] *https://www.greenclimate.fund/sites/default/files/document/funding-proposal-fp156.pdf*
[119] *https://www.acenrenewables.com/2020/07/ac-energy-issues-60-million-green-bonds/*

Summary of the Findings

Philippines has emerged as the leader of green financing among the ASEAN nations[120]. There is strong momentum of green financing for SCP initiatives in the country. There has been increase in return to both private and public investors by use of green financial instruments which have further driven the development of green bonds, ESG, sustainability bonds and loans and grants[121]. These are new forms of financial instruments which are used by Philippines's economy to upscale and expand SCP initiatives in the country.

For promoting climate resilience and reducing GHG emissions there is a need of issuing $1 trillion per annum worth green bonds by 2020. Green bond market is most developed market of Philippines[122]. This will build climate resilient infrastructure, industrial sector, energy and resource efficient manufacturing unit and ensure SCP development in the country.

Philippines has both green debt and equity instruments to diversify the availability of fiancé for carrying out SCP initiatives in the country. Further, there is promotion of "greening the stock exchange" of the country and promote sustainable banking. The central bank of Philippines (BSP) has issued $200 million of green bonds, and promotes sustainable and green economy measures to carry out the banking services of the country. BSP has further provided guidelines to other banks on sustainability and climate change norms[123]. The stock exchange of Philippines (both SEC and PSE) has also issued sustainability reporting guidelines for the listed companies to follow climate resilience and promote green economic principles.

The green fund market is diverse to finance SCP initiatives in various sectors. Under the "Access to Sustainable Energy Program" the department of energy of Philippines along with European Union has a grant of PHP 3 billion for enabling rural electrification and renewable energy development. Various SCP projects are financed through the Renewable Energy Asia Fund in Philippines[124].

***Table 13**: Snapshot of overall SCP Funding in Philippines*

Sectors	Blended	Public		Private	
		Grants	Loans	Grants	Loans
Manufacturing		✓	✓	✓	✓
Agriculture	✓	✓	✓	✓	✓
SMEs					
Infrastructure	✓	✓	✓	✓	✓
Tourism					
Solid Waste Management					

Source: Based on authors' analysis

[120] *https://www.greenclimate.fund/sites/default/files/document/funding-proposal-fp156.pdf*
[121] *https://www.acenrenewables.com/2020/07/ac-energy-issues-60-million-green-bonds/*
[122] *Green Infrastructure Investment Opportunities: Philippines 2020 Report (adb.org)*
[123] *https://reglobal.co/opportunities-for-green-finance-in-the-philippines/*
[124] *https://reglobal.co/opportunities-for-green-finance-in-the-philippines/*

4.6 Country: Bhutan

Brief Overview on Major Economic activities of Bhutan

Bhutan is a mountainous, developing country landlocked between China, Tibet and India. Despite its small geographical and population size and having only recently been opened up to globalisation, its economy was recognised as one of the fastest growing economies in the world in 2013 (IMF, 2014). Such growth has mainly been driven by capital and power intensive sectors like hydropower, construction, and manufacturing. However, the livelihoods of majority of the country's population are dependent on agriculture and forestry activities. Therefore, Bhutan's development is intrinsically dependent on climate-coupled sectors (CPF- World Bank, 2021)

Over the years the share of the electricity sector has grown and at almost 20% of the GDP, it has overtaken agriculture as the largest economic contributor. Bhutan has immense potential for hydropower generation and presently exploits only about 5% of its total hydropower capacity. Growth in generation capacity is expected to stimulate employment and overall economic conditions of the country. Given Bhutan's natural endowments, its tourism, agro-based and socio-cultural industries also have growth potential and are promoted accordingly. Over 96% of the total industry is made up of Cottage and Small Industries (CSI) (Kezang et al., 2017).

[125] *https://reglobal.co/opportunities-for-green-finance-in-the-philippines/*
[126] *https://reglobal.co/opportunities-for-green-finance-in-the-philippines/*

Need for SCP Interventions in Bhutan

Bhutan's human development index places it at a medium development category (UNDP, 2020). But what is truly unique about Bhutan and has set an example for the world, is its focus on Gross National Happiness (GNH). GNH is an attempt at operationalizing social and economic development in a manner that ultimately promotes the collective happiness of the country's citizens. This philosophy is backed by four pillars- 'good governance, sustainable socio-economic development, cultural preservation, and environmental conservation'. Accordingly, the numerous policies that have been approved in pursuit of GNH have also been in alliance with the global understanding of Sustainable Consumption and Production goals.

However, implementation of such policies has not been smooth. When set against policy targets, it was found that in practice, several government offices, private businesses and individuals continued to follow unsustainable practices. A 2014-15 study conducted on the sustainability and efficiency practices of Bhutanese industries highlighted the absence of even basic measures like energy audits or waste management mechanisms. To offer another example, surveys among school children in the capital city of Thimpu indicated the lack of awareness about sustainable practices and lifestyles (Lama, 2017). Certain assessments conducted by Yangka et al. (2018) indicate that Bhutan's material usage since 1970 has been unsustainable.

Thrust on SCP Activities

Initiation of sustainable consumption and production (SCP) has commenced from the year 2015 in Bhutan. The major thrust comes from the Royal Government of Bhutan (RGB) through the following activities:

- Revamping of existing policies by mainstreaming sustainable consumption and production across existing plans and programmes
- Integrating SCP practices in the Tourism sector, which is a major revenue earning sector for the country
- Green Public Procurement
- Capacity Development through raising awareness
- Paperless Initiative

The Royal Government of Bhutan has emphasized on reducing the use of paper and henceforth started tracking per capita expenditure on stationary. A study conducted by the Department of National Properties indicated that consumption of virgin paper by 18 government ministries had been more than 178 tonnes in the year 2011-2012. Subsequently a guideline was launched in 2016 to institutionalize paperless operations.

Despite this top-down push, inherent limitations to scale up sustainable production and consumption practices exist in the form of limited market size, insufficient human resources and lack of consistency in the quality of products, services and the overall infrastructure. These limitations have had inadvertent effects on the state of the national finances and Bhutan has traditionally been dependent on development aid and donations from international donors. Some of the major development partners associated with Bhutan include the European Union, the World Bank, the Asian Development Bank, the Government of India, among others. Over the years, the country's reliance on external aid has fallen, however, ODAs, grants and other public funds have continued to dominate the funding of SCP and green practices.

Financing for Sector Specific SCP Initiatives

I. SECTOR- AGRICULTURE

Agriculture is of vital importance to Bhutan's economy, particularly as a source of livelihood for the rural poor. This is evidenced in the share of agriculture in GDP (over 13%) and the percentage of population employed in the sector (over 56%). However, the total land cover classified as agricultural land is less than 3% and farming is predominantly subsistence farming, that is, beyond the major crops (paddy, maize, apple, oranges and potatoes) and major livestock (cattle and poultry) demands of other food groups and nutrients are met through imports.

Hence the Five-Year Plans of the Royal Government of Bhutan have specifically included targets to enhance self-sufficiency in food cultivation and production.

The challenges faced by the sector include:

- Declining yield per hectare
- Insufficient labour due to out-migration from rural areas
- Limited access to markets due to underdeveloped farm road linkages
- Lack of irrigation
- Lack of good storage and processing facilities
- Other challenges such as excessive soil erosion rate, vulnerability to infestations, diseases, and wild animal invasion

In order to address these challenges, policy makers have targeted a strategic shift from subsistence to commercial practices and development of innovative agri-enterprises to augment rural incomes and enhance economic growth.

Tools for key Financing SCP initiatives

The national bank of the country, Bank of Bhutan, provides loans at favourable/concessional rates to agriculturists via its agriculture-focused loan products and Green Finance window. The Ministry of Agriculture and Forests, along with other relevant ministries, supports and encourages social enterprises undertaking organic and scientific methods of farming. International humanitarian organisations and donor funds, such the World Food Programme (WFP), work with the government to improve production capacity, strengthen value chains and enhance livelihoods. Particularly in the case of building resilience to the changing climates, several multilateral organisations such as the IFAD, UNDP (Green Climate Fund) and the World Bank have been supporting Bhutan's efforts by providing loans and/or grants focused at promoting agricultural practices designed to absorb climate-induced shocks and improve food security.

Specific Cases of Financing

- **Blended Finance:** Commercial Agriculture and Resilient Livelihoods Enhancement Programme (CARLEP)- An ongoing programme to improve marketing, storage and processing facilities for smallholder Bhutanese farmers, the programme is funded by the IFAD using Blended Finance instruments. The Food Corporation of Bhutan and the National Government act as domestic co-financiers.
- **Grant:** Climate Resilient (Smart) Agriculture- In order to support the Royal Government of Bhutan's efforts, this programme has received funding from the Green Climate Fund under the UNDP and the Global Agriculture Food Security Program (GAFSP) under the World Bank. Its objectives are in line with the 11th FYP as well as the overall GNH philosophy.
- **Social Enterprises:** With growing institutional support as well as education and awareness, private citizens have been taking up innovative social entrepreneurship projects to supplement agricultural incomes. Such enterprises have employed financing tools ranging from blended equity instruments to grants and crowdsourcing campaigns.

II. SECTOR- TOURISM

Tourism is the second biggest source of revenue for Bhutan and offers significant employment opportunities. It is also a crucial revenue and foreign exchange generating sector for the Bhutanese economy, particularly since the focus is on international tourists while domestic tourism is practically insignificant. Industry operations commenced from 1974 and was privatised in 1991 but is still largely governed by top-down policy approaches. Being cognisant of the ecological impacts of tourism, Bhutan's priority since it first opened for tourists has been towards ensuring the environmental sustainability of the sector. This has been driven through its implementation of the High Value-Low Volume (HVLV) tourism policy, wherein the entry and activity of tourists is operated through selected authorised agencies. While such top-down approaches have been helpful in monitoring activities, it has also brought up concerns over tourism revenues being collected by the government rather than benefiting the local communities directly.

The sector also faces challenges based on the seasonality of the services, accessibility and diversification of offerings. Targeted efforts to diversify the tourism services and launch eco-tourism products such as the abji-Korphu community-based trail in Jigme Singye Wangchuck National Park or several farm stay programmes have been undertaken by key stakeholders including The Tourism Council of Bhutan

Over the years the HVLV policy has migrated to a High Value-Low Impact policy, meaning that despite the increase in number of tourists over the years, the government has remained mindful of the impact associated with it. Hence, it provides stakeholders with SCP linked incentives in various hospitality, tourism and transport practices. The Bhutanese Government has also established classifications and standards for green hotels along with the corresponding incentives. When an increase in the number of tourists is managed keeping the low-impact goal in mind, it can result in higher consumption levels in addition to creating much needed employment in the country.

Tools for key SCP initiatives

Financing opportunities for implementing SCP initiatives in the Bhutanese tourism sector are diverse. The HVLV policy itself provides for the collection of Minimum Daily Package Rate (MDPR) and Sustainable Development Fee (SDF) to manage the impacts of tourist activity. A separate Tourism Development Fund is maintained for the purpose of upkeep of infrastructure, developing new eco-tourism products and joint marketing programmes.

Bank of Bhutan has several schemes for Sustainable Mountain Tourism, including the National Credit Guarantee Scheme to allow access to credit for MSMEs as well as the Green Finance Window. The National CSI Development Bank also offers low interest rate credit to Cottage and Small Industries, including tourism-based ones.

Several international nature conservation programmes and funds also support the development of sustainable tourism practices in Bhutan. These include the Royal Society for Protection of Nature (RSPN), the World Wildlife Fund and others working in conjunction with the Ministry of Tourism and the Nature Conservation Division (Ministry of Agriculture).

Specific Cases of Financing

- **Grants:** Global Environment Facility (GEF)- The project to be implemented by the UNDP, Global Wildlife Programme aims at mainstreaming biodiversity into tourism by developing an ecotourism model in certain wildlife sanctuaries across the country.
- **Commercial Private Loan:** The Zhiwa Ling Hotel was the first private company in Bhutan to receive an external commercial loan in the form of borrowing from the IFC.
- **Official Development Assistance:** The EU has been infusing funds into the country both directly and via the SwitchAsia projects. Projects such as SUSTOUR and SHINE work in collaboration with domestic partners such as ABTO and are in line with Bhutan's Vision 2020.

III. SECTOR- INFRASTRUCTURE

Tools for Financing key SCP initiatives

Bhutan is a mountainous and heavily forested region with forests being a crucial natural resource for the country. With long term sustainability in mind, the country is constitutionally required to always maintain at least 60% of the land under forest cover. Despite this, the negative effects of urban expansion and the establishment of new infrastructure, such as roads and hydropower projects, have not entirely escaped the forest resources.

Bhutan has tremendous potential for hydropower generation. Accordingly, the Royal Government of Bhutan in a public-private partnership, along with development partners like Asian Development Bank (ADB) and consortium of Indian Commercial Banks have been funding the development of hydro projects using syndicated loans and grants. Sale of power to neighbouring India is a substantial source of revenue for the country.

Specific Cases of Financing

- **Public Private Partnership- Loans, Grants and Technical Assistance:** The Hydro-power Plant in Dagachhu completed in 2014, was the first infrastructure PPP in Bhutan, including a loan from ADB. As a cross-border project, it was also the first of its kind to receive Clean Development Mechanism (CDM) carbon credits. CDM is a market-based scheme to earn certified carbon credits for emission-reduction initiatives from developing countries.

- **Co-financing Investments:** Bamboo for Sustainable Construction and Rural Value Chain Development Pilot Project- With the objective of developing the bamboo industry, particularly for construction requirements, the Royal Government of Bhutan, INBAR and the Social Forestry Extension Division (SFED) implemented a jointly funded project- a Common Fund for Commodities (CFC).

To illustrate the various instruments of sustainable investments being employed in Bhutan at present, a few examples are provided below.

***Table 14**: Sector specific SCP financing in Bhutan*

Sectors / Sources of Funding	Agriculture	Tourism	Manufacturing & Solid Waste	Transport
Public- Grants & ODA	Commercial Agriculture and Resilient Livelihoods Enhancement Programme [125]	SwitchAsia- SUSTOUR EUR 1.302.895 (EU contribution: 90 %)[126]	The GEF Small Grants Programme (2013-2015)- Community Solid Waste Management SGP US$47,050 In-cash co-financing US$106,000 In-kind co-financing US$60,320[127]	Sustainable Low-emission Urban Transport Systems (2017-2023) GEF Trust Fund Partners- UNDP Ministry of Information and Communications (MOIC) 13,057,726 $ (Total Project Cost)[128]
	IFAD: Food Corporation of Bhutan Ltd (US$ 4.8 million) National Government (US$ 5.77 million) Beneficiaries Cash (US$ 2.32 million)			
Private- Commercial loans	Priority Sector Lending by Bank of Bhutan[129]	Loans from National CSI Development Bank and BoB[130]		

[125] *https://www.ifad.org/en/web/operations/-/project/1100001739*
[126] *https://www.switch-asia.eu/project/sustour-bhutan/*
[127] *https://sgp.undp.org/case-studies-189/847-bhutan-waste-paper-recycling-for-youth-employement/file.html*
[128] *https://www.thegef.org/project/bhutan-sustainable-low-emission-urban-transport-systems*
[129] *https://www.bob.bt/personal-banking/borrow-loans/agriculture-green-finance/*
[130] *https://www.csibank.bt*

Sectors / Sources of Funding	Agriculture	Tourism	Manufacturing & Solid Waste	Transport
Blended	Global Agriculture Food Security Program (GAFSP) World Bank- US$8 million[131]		Bhutan Youth Development Fund[132]	
Debt based financing- Bonds				Bhutan Green Transport Project 2023 World Bank Commitment Amount- US$ 5.00 million[133]
Institutional Investment (Equity)- PE, VC, Mezzanine, Structured Finance etc.			Gasa Soechu Ltd (bottled water) Community-owned equity	

Source: Compiled by authors from various sources

Summary of Findings

Overall, the development funding for SCP in Bhutan is primarily public financing supported by international aid and borrowing. The private sector and market-based financing is still relatively under-developed. However, the growing number of innovative, sustainability-focused start-ups and social enterprises indicates improving access to education and awareness and in turn hope for a more broad-based, participatory approach towards sustainable development.

[131] *https://climateknowledgeportal.worldbank.org/sites/default/files/2019-06/CSA-in-Bhutan.pdf*
[132] *https://www.rma.org.bt/RMA%20Publication/papers/e-FinlLit%203rd%20edition%20newsletter%202020.pdf*
[133] *https://projects.worldbank.org/en/projects-operations/project-detail/P171012*

***Table 14**: Snapshot of Overall funding Patterns in Bhutan*

Sectors	Blended	Public		Private		
		Grants & ODA	Debt (Loans + Bonds)	Debt	Equity	Others (Crowd-funding)
Manufacturing		✓				✓
Transport		✓	✓	✓		
Tourism		✓				
Agriculture	✓	✓		✓		✓
Infrastructure	✓	✓				

Future Outlook

Bhutan's climate smart investment potential over a period of 2018-2030 as estimated by the International Finance Corporation (IFC) is $42 billion. This can be broken down as:

- $40.7 billion in Renewable Energy
- $615 million in Low-carbon transport infrastructure
- $390 million in Green Buildings
- $140 million in Climate Smart Agriculture
- $106 million in Climate Smart Urban Water
- $11.5 million in Municipal Solid Waste

Being mindful of the country's vulnerability to the adverse effects of climate change, these investments would carry a focus on building climate resilience in addition to relevant mitigation activities. In order to attract such investment, it is important that the country diversifies its economic base from a hydropower focus to a more holistic 'Brand Bhutan'. Policy and regulatory environment must not only encourage private participation but also implement and demonstrate successful Public Private Partnerships, such that it builds up confidence in investment opportunities. (IFC, 2017)

4.7 Case Studies on SCP Financing in Selected Asian Economies

Case Study 1: Xuzhou circular economy industrial park of China with policy support and innovative business model

Country: China

Sector: Solid Waste Recycling

Summary

Encouraged by strong supports of national multiple policies of 'zero-waste' pilot city development, the Yangtze river protection, and ecological development, Xuzhou municipal government established the top-level coordination and promotion mechanism on boosting the municipal zero-waste development strategy, and issued a local policy to provide financial incentives and encourage investment for the construction of Xuzhou Circular Economy Industrial Park, a priority project of Xuzhou's 'zero-waste' pilot city development and the city's economic development. With the policy support from Xuzhou municipal government, Xinsheng Lvyuan Circular Economy Industry Investment and Development Company Ltd. (abbreviated as Xinsheng Lvyuan), was attracted to invest the Industrial Park as the controlling shareholder. Lvyuan practiced an innovative financing model by harmonizing the overall operation of various projects within the industrial park, coordinating and centralizing the source of repayment to promote the credit of the whole industry park and to mobilize sustainable investment for the development of the industrial park. In general, the strong policy support, the harmonizing financial mechanism with investor and operator, as well as marketing business model, increased the overall credit of Xuzhou Circular Economy Industrial Park and finally received 20-year credit loan from China Development Bank (CDB).

Context

Xuzhou city, Jiangsu Province of China, is an old industrial city. With rapid industrialization and urbanization, increasing volume of solid waste generated became urgent issues faced by the local government including industrial waste, hazardous waste, plastic waste and municipal waste, due to the weak and inadequate existing capacity on waste recycling and disposal.

In 2019, 'zero-waste' pilot city programme was initiated by Ministry of Ecology and Environment (MEE) in collaboration with around 20 relevant ministries and departments in China, as an innovative solution at city level to solve the complex waste problems caused by high speed economic and urbanization development. The zero-waste pilot

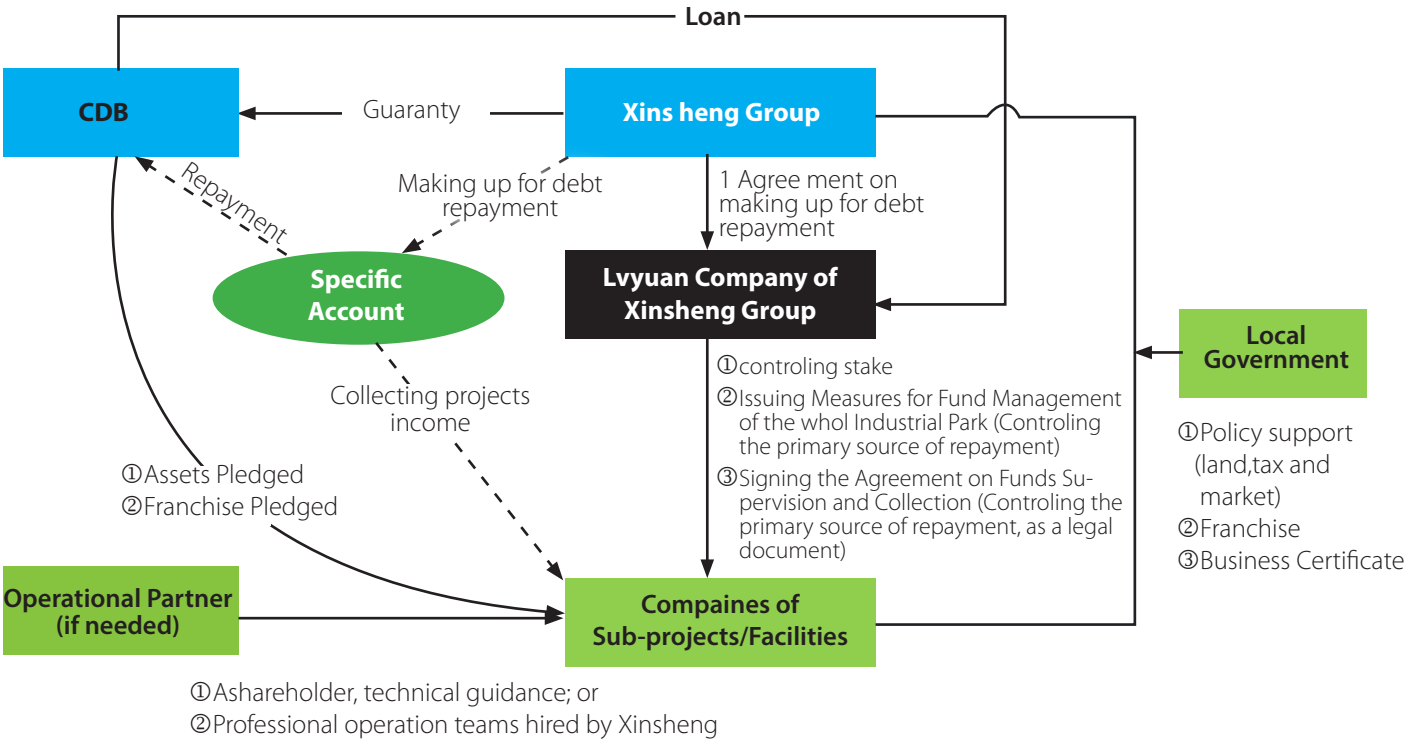
city programme sets minimization of waste generation, promotion of recycling, minimization of landfill, and promoting green lifestyle as key tasks. Xuzhou government actively applied to joining in this programme and was selected by MEE as one of sixteen pilot cities/ regions to achieve 'zero-waste' at city level in 2019 with self-finance mobilization.

Under this programme, the Circular Economy Industrial Park being constructed in Dapeng Town, Tongshan District of Xuzhou, was set by the local government as one of key activities to promote development of zero-waste pilot city in Xuzhou, covering a total area of 8,295 mu (a Chinese local unit, 1 mu is equal to 0.165 acres), with five functional facilities including solid waste treatment, waste recycling and resource utilization, environmental protection equipment manufacturing, and scientific research and education.

Encouraged by the strong support of a series of national multiple policies covering 'zero-waste' pilot city development, the Yangtze River protection and ecological development, Xuzhou municipal government provided an additional local financial policy to encourage the investment to the Circular Economy Industrial Park in Xuzhou. With these policy support, Xinsheng Lvyuan Circular Economy Industry Investment and Development Company Ltd., branch company of an investment holding group: Xinsheng Group Co. ltd, was attracted to invest the Industrial Park as the controlling shareholder. Xinsheng Lvyuan practiced an innovative financing model by harmonizing the overall operation of various projects within the industrial park, coordinating and centralizing the source of repayment to promote the credit of the whole industry park and to mobilize sustainable investment for the development of the industrial park.

Xinsheng Lvyuan, with support of its headquarter Xinsheng Group, is in charge of overall financing and operation of Xuzhou Circular Economy Industrial Park, including financing, construction, operation and repayment. Through this business model, each facility or plant within the park is managed by professional enterprises through signing contracts with Xinsheng Lvyuan Company. The income of all the facilities or plants within the park will be uniformly received and managed by Xinsheng Lvyuan to ensure the repayment by establishing a fund mechanism and controlling cash flow all over the park. Xinsheng Group, as headquarter of Xinsheng Lvyuan, undertakes the difference to make up for debt repayment obligations. The business model with financing mechanism and professional management of the park by Xinsheng Lvyuan increases the bank's trust in the park's repayment ability and reduces the risks on repayment.

Figure 4: *A chart on the business and financial models of Xuzhou Circular Economy Industrial Park*



Source: Translated from Zero-waste city development - model analysis and case studies. 2021)

Finally, a 20-year, 4.55 billion Chinese yuan credit loan was approved by China Development Bank (CDB) and released to the overall development of Xuzhou Circular Economy Industrial Park. This is the first time for a resource recycling industrial park to get credit loan approved by CDB. Credit loan refers to the loan that the bank sets the maximum credit limit according to a certain ratio of the mortgaged value. In this case, credit loan means the loan will be delivered respectively to the 8 sub-projects of the industrial park only when the sub-project to meet the conditions requested by CDB and with the 8 sub-projects' total maximum limit of 4.55 billion Chinese yuan.

With the successful credit loan, at present, 37.5 million tons/a municipal waste incineration power plant phase I was put into operation in July 2020. Two facilities of one 80,000 tons/a hazardous waste disposal phase I plant, and one 10,000 tons/a medical plastic waste recycling plant are under construction. The second phase of Circular Economy Industrial Park started planning, focusing on introducing projects/plants on resource recycling, environmental equipment manufacturing, and environmental new materials research and production.

Financial Structure and Sources of Funds

Green Credit Loan received with 20-year and 4.55 billion Chinese yuan from China Development Bank (CDB), a policy bank to finance the government's large-scale development projects.

Analysis of enablers and barriers

For investors, Circular Economy related projects or facilities still have the characters of high risk, high investment and long investment cycle, while bank credit loan pursues safety, profitability and liquidity. Affected by these factors, the financial institutions are still not willing to finance circular economy especially in local cities.

Barrier analysis

Currently, the lack of uniformity in the green finance standard system and the lack of a unified standard at the national level generally makes it difficult to identify green projects with a harmonized standard and makes financial institutions at a loss what to do and unable to provide precise support. Since 2021, the People's Bank of China has been continuously promoting the improvement of the green finance standard system under the national strategy on carbon peaking and carbon neutrality. The People's Bank of China will improve the green finance standard system focusing on climate change, pollution control and energy conservation and emission reduction. [3]

Lack of effective information disclosure is one important barrier for environmental related projects to get green financing, e.g., the establishment and operation of a circular economy industrial park. For example, information disclosure of green bonds is not good, as the information on impacts to climate change and environment from the funds supply side and the funds demand side comparable, and sometimes the regular information disclosure is neither active nor qualified.

An incentive mechanism of green financing would be effectively to make up for the weakness of financing in the initial period, such as low returns and high risks. Currently, the lack of incentive mechanism on green financing results in the lack of commercial sustainability of green financing.

Whether the technical route is right or not is another key risk for green financing in the fields of SCP. Technologies in the field of sustainable consumption and production, such as circular economy, are driving the progress of sustainability and are still in the active stage of innovation and adaptation. The technology development route is sometimes uncertain and might be replaced by other more advanced technology, that is the concern of investors.

Therefore, risks in sustainable financing are additional, except for the conventional financial risks including risks on tack-back cycle and credit. This fact makes the sustainable financing in SCP is more complicated.

Analysis of Enablers

Policy support: Encouraged by strong national multiple policies of 'zero-waste' pilot city, the Yangtze River protection and ecological development, Xuzhou municipal government issued the local policy document 'Notice on Preferential Policies for Supporting the Construction and Development of Xuzhou Circular Economy Industrial Park' [No. (2019) 70], providing clear and comprehensive policy support to borrowers and projects, in the early stage of the project. Xuzhou Circular Economy Industrial Park is the key and priority project at city level in environmental, economic and social dimensions, which has driven the local policy document issued. Through this policy, the local policy request local authority to ensure the land use for the industrial park, to return the local taxes paid by the facilities and enterprises within the industrial park, to list recycled products with certificates into government procurement catalogue and promote to use them in green construction.

The marketing-based business model: Xinsheng Lvyuan Company is in charge of overall operation of Xuzhou Circular Economy Industrial Park. Each facility or plant within the park is managed by professional and certified enterprises through signing contracts with Xinsheng Lvyuan Company. The marketing-based business model increases the professionalism of technology used in and operation of the facilities within the industrial park.

Centralized financial management mechanism: The income of all the facilities or plants within the park will be uniformly received and managed by Xinsheng Lvyuan Company to ensure the repayment by establishing a fund mechanism and controlling cash flow all over the park. Xinsheng Group, as a shareholder and headquarter of Xinsheng Lvyuan Company, undertakes the difference to make up for debt repayment obligations.

With the strong local policy support, the business model on joint operation of the park and the centralized financial management mechanism by Xinsheng Lvyuan Company increase the bank's trust in the park's repayment ability and reduce the risks on repayment concerned by the bank.

Lessons learnt

Industrial and circular economy park operated by professional private sector, as a business model on centralizing small-medium sized enterprises of waste recycling and treatment together, will increase the advancement of technology, promote professional operation, and enhance the emissions control. This way would make the industrial park being operated sustainably and entrust the investor. Moreover, the overarching solid waste management policies including the national 'zero-waste' city development program initiated by the government in China have also led to successful implementation of the project.

Case Study 2: Grant Based Agribusiness Value Chain

Country: Cambodia

Sector: Agriculture

Summary

This project aims to strengthen the agribusiness value chain in the three regions of Cambodia namely the provinces of Kampong Cham, Kampot, Takeo and Tboung Khmum. This project has been implemented to achieve outputs under the following:

Output 1: Improve agribusiness value chain infrastructure improved and made climate resilient.

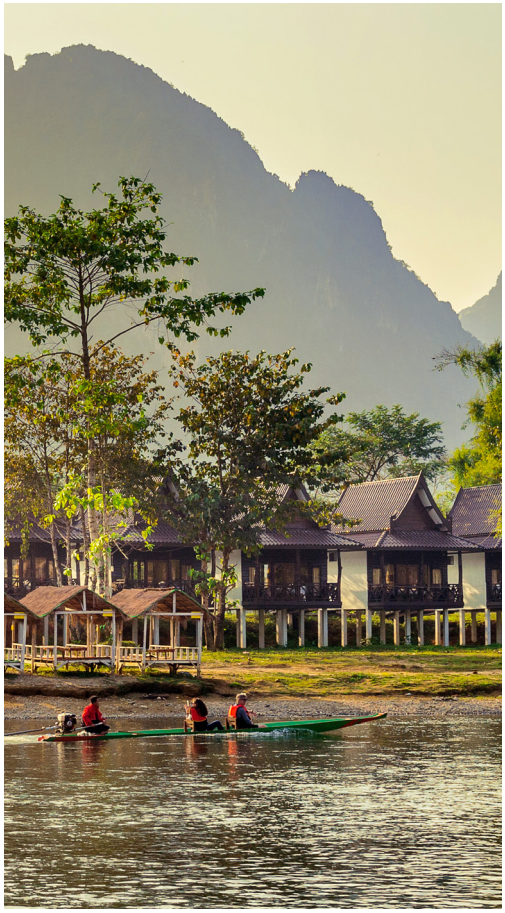
Output 2: Promoting climate smart agriculture and agribusiness.

Output 3: Enhancing enabling environment for climate friendly agribusiness.

This project will be implemented in order to ensure the diversity across various crops. It will essentially help in commercialization of various crops namely rice, maize, cassava, and mango, etc. by enabling an efficient infrastructural and institutional framework so that it leads to commercialization of crops as an outcome for strengthening effective and efficient agribusiness value chains in Cambodia.

Background

The traditional agriculture sector of Cambodia contributes about 33.7 % to the GDP and is majorly dependent on subsistence farming. There is history of poor and inefficient value chain in the agricultural sector of Cambodia. Due to lack of effective infrastructure, unsupportive policy practices and inadequate irrigation facilities, the sector thrives poorly. This project will tend to build an infrastructure that would boost the agricultural value chain in Cambodia and would lead to development of the overall economy.



Financing Model

Financial model is composed of two financial instruments viz. loans and grant. The total financing required for the project is 141.4 million USD, which is comprised of GCF fund and a loan from ADB. This project has been initiated in 2018 and is expected to be completed in 2025. The government of Cambodia will borrow this fund and would imply in accordance to the project description.

This financing breakup is as follows:

Green Climate Fund US$ 10.00 million (Loan)

Green Climate Fund US$ 30.00 million (Grant)

Asian Development Fund US$ 90.00 million (Loan)

Analysis of Barriers

There are various barriers associated with the traditional infrastructure sector of Cambodia amongst which the primary barrier is of leap frogging and out-dated technological and institution mechanisms that hinder the effective production and reduces the capacity generation which lacks in growth of agricultural value chains. Agriculture itself is associated with a lot of risks both at the time of production season and at the time of harvest. Poor harvests, long gestation periods are some of the associated risks. Hence, there is a need of developing a better infrastructural and institutional mechanism to strengthen this sector.

Further, the need of strengthening the agribusiness value chain in Cambodia is also due to lack of efficient policy and regulatory framework for developing the agricultural value chain. Lack of a proper institutional framework might lead to degradation of the resource base of the economy causing climate shocks and hence demand climate resilience.

Analysis of Enablers

The project for strengthening the agribusiness value chains in Cambodia has been initiated through joint efforts of various stakeholders which include financing institutions, the Central Bank of Cambodia and other executing and accrediting agencies.

The project will contribute to the government's Agriculture Sector Strategic Development Plan and the Industrial Development Policy, thereby improving the competitiveness of agribusiness value chains in Cambodia.

Moreover, the project is expected to boost the climate resilience of the agribusiness value chain in Cambodia through enabling infrastructure. The better infrastructural and institutional capacities will lead to commercialization of various crops such as rice, maize, mango, etc. which would further enhance profitability and income of farmers and other stakeholders.

Impacts Generated

The project has led to the creation of better and mechanised farms which have resulted in increase of employment in the agricultural sector and has further improved the incomes of the farmers and other stakeholders till date.

The norms and procedures that are followed in creation of climate smart agriculture have created better policy framework and institutional mechanism that has boosted the productivity of the traditional agricultural sector and further led to mitigating the risk of climate shocks in the economy Cambodia.

This project has led to enhanced capacity generation of both public and private sector institutions. There is a better infrastructural arrangement in making various crops to commercialize via increasing its production post the implementation of this project.

Various crops like rice, maize, mango etc. have been benefited through this project as these crops have significantly saw crop diversification which have been linked with the goal of commercialization of crops and strengthening the agribusiness value chains in Cambodia.

Lessons Learnt

The case provides various insights and draws our attention towards various institutional arrangements that leads to capacity generation in a traditional agricultural sector by enabling climate smart agricultural techniques which promotes better infrastructure for carrying out agricultural activities like irrigation, prevents climate shocks which are caused due to old and outdated agricultural techniques, bad financial system and many more.

The better environment leads to better infrastructure which further promotes better policy for environment which in turn strengthens the agribusiness value chains in Cambodia. The joint effort of utilizing the financial amount of the project by the Government of Cambodia would allocate specific funds for each output and ensure climate resilience in strengthening the agribusiness value chains in Cambodia.

This project has transformed the traditional agriculture sector which had outdated infrastructure with leap frogging in institutional framework, with better mechanism of crop diversification with mitigating climate shock along with ensuring agribusiness value chain management as a by-product of climate smart agriculture in Cambodia.

Case Study 3: Grant Based Project to increase private sector investments in the RMG and Textile sector

Country: Bangladesh

Sector: Manufacturing

Summary

The case study highlights the market transformation of the Textile and RMG sectors in Bangladesh to increase the penetration of energy efficiency measures, leading to a shift in sustainable development practices. The case is divided into 5 key Component where each Component highlights different energy-saving measures in the textile industry and RMG of Bangladesh. The implementation of this issue is different in both sectors so that financial benefits can be collected, and market participation can be improved.

Background

The industrial sector in Bangladesh accounted for 47.8% of commercial energy consumption, in the form of natural gas and electricity where the textile sector ranks second in industrial power with a consumption sector of 12.40% after the Garment sector (15.40%). However, the use of outdated technology in clothing making has been justified due to inadequate funding, mismanagement and a lack of technical and financial professionals.

This program aims to support entrepreneurship in the textile sector and RMG through financial and market resources to identify investment opportunities to develop energy saving technologies that will create a positive market environment and a growing business model for investment in energy efficiency development, leading to significant energy savings. and compliance with reducing greenhouse gas (GHG) emissions. It will go a long way in achieving Bangladesh's Nationally Determined Contribution (NDC); that is, a reduction of GHG by 15% compared to the Business Status As usual by 2030 with international support, under the Paris Agreement. In addition, the program also contributes to the Government of Bangladesh's goal of achieving a 10% reduction in energy consumption in the industrial sector by 2030, assistance in creating an enabling environment by integrating areas such as capacity building, awareness, loan support and monitoring and evaluation of system parameters. The program comprises five components:

Component 1: $133.00 million Funding for Energy Saving Resources and Textile Industry Technology

Component 2: $3.05 million GCF Technical Assistance (TA) to develop an EE investment climate

Component 3: $200.00 million funding for RMG Energy Saving Equipment and Technology

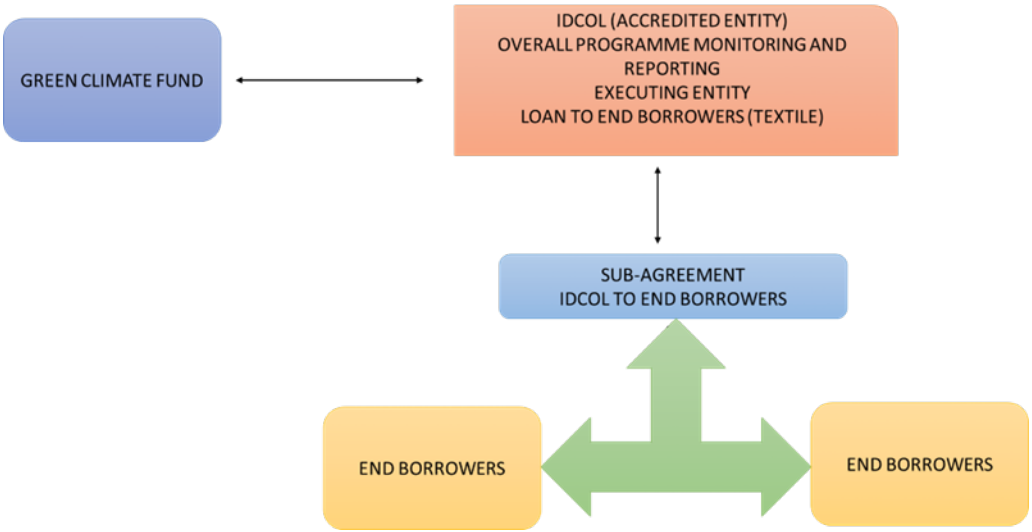
Component 4: $2.30 million GCF Technical Assistance (TA) to develop an EE investment climate for RMG

Component 5: $1.15 million GCF Technical Assistance (TA) to strengthen the regulatory and institutional framework at national level to overcome operational barriers related to the implementation of EE & C in the country

Financing model

Total amount including GCF and co-financing i.e., $340.50 million including 6.48 million in grant and 250 million through loans. The working life will be 12 years and 21 years for the entire life of the project. The project will fall into the ESS B phase.

Figure 5: *Financing Model EE in Industrial sector of Bangladesh* [100]



Source: Green Climate Fund 2020

Implementing Partner for this case is government of Bangladesh but will not be an executing Entities.

Executing entity for different composes are listed as follows:

Component 1, 2 & 4:

Infrastructure Development Company Limited (IDCOL) is also the EE

Component 3:

Local Financial Institution (LFIs) EEs namely- South East Bank Limited, City Bank Limited, BRAC Bank Limited and IDLC Finance Limited or any other eligible LFIs as per selection criteria. IDCOL may also be the EE in some cases when it lends directly to the RMG manufacturers.

Component 5:

Infrastructure Development Company Limited (IDCOL) as EE. Sustainable Renewable Energy Development Authority (SREDA)

[100] *https://www.greenclimate.fund/sites/default/files/document/funding-proposal-fp150.pdf*

Financing under each component is mentioned as follows:

In the case of Component 1, 2 & 4: IDCOL will be an Executing Entity for Component 1, 2 & 4. The borrower will require payment from IDCOL for both USD and BDT for energy-efficient assets and technologies in accordance with the proposed capacity to be used annually during the implementation of the program.

Under Component 2, IDCOL will also be responsible for performing functions under Technical Assistance (TA). As Component 2, section 04 will be used by IDCOL which contains proposed activities such as Technical Assistance to improve access to information and resources and build capacity for the effective implementation of Part 03 to bring about systematic change in the RMG sector. In the case of Component 3, IDCOL will transfer funds from GCF in the form of a loan, to Managing Companies (EEs) i.e. LFIs. BRAC Bank, City Bank, South East Bank and IDLC and any other LFIs are eligible in terms of selection to reach the end-to-end borrowers which are independent clothing manufacturers in this regard. In some cases, IDCOL will lend directly to RMG manufacturers. Authorized Business (AE), IDCOL will receive the fund from GCF and send it to Small Businesses (EEs). EEs will demand payment from IDCOL for energy and technology assets in accordance with their annual loan application pipeline for the duration of the program. Activities across the station will be in USD. Section 05: This section will deal with policy-level issues in order to create a conducive environment for funding energy savings in the country. It will focus on strengthening the regulatory and institutional framework at the national level in order to overcome operational issues related to the implementation of EE & C in the country. The Sustainable and Renewable Energy Development Authority (SREDA) under the Department of Energy, Minerals and Minerals, Government of Bangladesh, will be our partner to implement this component.

Under Components 01 and 03, GCF funding in the form of high-interest loans will support the final borrowers of the textile sector and RMG respectively, by issuing a credit line to ensure long-term financial support is available in the market to overcome high barriers. previous costs, as well as longer payment periods, to encourage private sector investment in EE equipment. GCF Non-renewable resources (technical assistance), which include under Sections 02 and 04, aim to improve the market perception of energy efficiency and provide support to relevant stakeholders at all stages of implementing energy efficiency measures. It is envisaged that links between energy efficient producers or manufacturers and post-investment decision-makers will be used to save energy, ie the final borrowers of Textile & RMG, thus helping to disseminate information related to energy efficiency and resolve any query unit owners may ask. babe.

The proposed program focuses on project focus on overcoming the technical and financial barriers of the private sector (including Local Financial Institutions), by providing information and capacity building

and ultimately by creating an enabling environment for EE & C investment promotion in the textile and RMG sector. of Bangladesh. National impact will also be gained through the implementation of section 05, through the Government SREDA, to strengthen the regulatory and institutional framework at the national level in order to overcome operational barriers related to the implementation of EE & C in the country.

Analysis of Barriers

- Low interest rates: To ensure competitive profitability, unit owners operate on ever-declining genes. In such a case, interest rates are much lower than the current market rate (5-6%) which will be required to encourage unit owners to take out loans for energy saving projects only.

- Complex loan application process: In order to achieve funding for energy efficiency, unit owners need to conduct energy research. After auditing, banks undertake a standard loan measurement process, making the entire process longer and more complex. Also, unit owners must pay in advance for the cost of energy testing, in addition to the cost of using energy savings.

- Limitations of banks in the analysis process: Bank officials have limited understanding of the technology of the energy saving project even though they understand the RMG business. Bank officials have limited access to standard tools, strategies and framework for evaluating energy saving projects. This leads banks to focus less on developing financial products that target investment savings or to further the project's debt in a faster and more efficient manner.

- Non-availability of loans with existing banks affiliated with RMG units: RMG owners prefer to continue their business relationship with their existing banks rather than start new relationships and in the event of long-term relationships, RMG owners protect loans at lower interest rates than the existing market. prices from their existing bank. In a situation where existing banks do not offer energy savings loans, RMG owners are reluctant to reach out to new banks to get electricity savings - a barrier that adds to energy savings issues.

- Over-focusing on the top line vis-a-vis bottom line by factory owners: In a competitive market environment, factory owners are more likely to invest in increasing production capacity to increase revenue i.e., top line instead of investing in improving efficiency to increase profits i.e., bottom-line. Therefore, investment in energy efficiency is not the most important factor for owners.

- Large investment requirement: Investment costs in the fast-moving energy efficiency and depend on a certain amount taken. In many cases, units do not have sufficient funding to invest more in order to maximize productivity and therefore, they have no doubts about such investments. Also, in order to realize energy efficiency schemes, owners

need to spend money on renting power plants. This adds to the cost of taking energy saving measures.

- Insufficient exhibition examples: Examples of real savings achieved in savings are few and far between in Bangladesh. Owners are often reluctant to make additional investments when conducting research that helps them become fully aware of the needs that are available to reap the benefits through energy saving measures.

- Lack of technological balance and energy saving processes: There are limited market information available to owners to understand energy technological details of energy efficiency and to rely entirely on the auditors' perception of energy to use a certain scale. The list of standard technologies and commonly used technical annotations that can be used in the RMG sector can be seen as a useful tool for informing owners and subordinates about energy-saving devices.

- Limited market information: There is limited information available on the market about the processes and procedures that need to be taken to identify potential energy savings and assess potential benefits. Established templates and SOPs can help close this information gap and instil a sense of confidence in the owners about the entire energy efficiency testing process.

Analysis of Enablers

The key enablers have led to the success of this SCP in Bangladesh. Firstly, the IDCOL make sures that all the 5 components are monitored and implemented as the framework is design is made in order to achieve maximum outreach of the case.

Secondly, the efficient energy consumption laws in both Textile and RMG sector have ensured that the maximum about of fund is utilized in adopting sustainable technology for production.

Furthermore, the program will also contribute to the Government of Bangladesh target to achieve 10% of energy consumption reduction in the industry sector by 2030 and 20% improved energy intensity by 2030. This would be done by the constant support that the executing entity provides in the implementation of the program.

Impacts Generated

Energy Saving Energy: The textile industry is one of Bangladesh's largest energy-intensive industries with a total industrial demand of 1,701 TOE / year which is up to 17% of total energy demand. According to the feasibility study, production and operating procedures in this sector are not performing well due to the use of separate equipment to save costs and thus there is a greater chance of using energy-efficient equipment or repairing existing equipment with energy-efficient technology. Due to the use of energy savings under the system in the textile sector, the total energy saving in the sector is estimated at 6,547 GWh.

Pollution Reduce Energy: This program is expected to result in a reduction of 4.00 million tCO2 emissions, by simplifying and increasing investment in energy efficiency improvements in many textile resources. Energy efficiency development projects include both mechanical and technical measures in selected textile industries.

Capacity reduction per USD million investment (Cost per tCO2eq): Expected program costs for the Textile sector $133 million of which, $100 million will be funded through GCF, $33.00 million from IDCOL in the form of loans. There will be funding of up to $33.00 million in the form of equitable investment from borrowers in the end. Financial viability indicates that the estimated cost per tCO2eq (a / c) is $34.33 / tCO2e and the average GCF cost per tCO2eq deducted (b / c) is approx. $25.81 / tCO2e.

POSSIBLE IMPACT ON RMG: The contribution is made by providing targeted market financing for energy saving measures that will lead to savings on output products and provide market participants (RMG units, banks, policy makers) with the necessary technical assistance. to promote Bangladesh's energy efficiency market, and to support the implementation of energy efficiency programs. The launch of the program will also help Bangladesh meet its country's 59 climate targets, targeted at 60, to contribute to global climate change efforts. As the program targets the RMG sector, which contributes significantly to Bangladesh's economy (a sector that contributes to 11% of the country's GDP and employs about 4 million people) it will help facilitate industrial development through human development.

Lessons Learnt

Historically it has been seen that there is dependence on the government sector to support the projects that are developed for specific country, but this program highlights the movement towards grand based loan lending system which requires stakeholders which is mix of both private sector and public sector contributing for the working of this project.

This project tries to achieve energy efficiency in the RMG and textile sector of Bangladesh which shows scope of such developmental projects that can be replicated for other sectoral projects as well such as for agricultural sector etc. This kind of financing mix of grant and loan can be also used for other projects in Bangladesh that can ensure the movement towards SCP in Bangladesh.

Case Study 4: Micro Financing Model of Living in the Light in Bangladesh

Country: Bangladesh

Sector: Energy

Summary

SDG 12 aims at promoting sustainable consumption and production (SCP) across different sectors of the economy and in Bangladesh where more than 60% of population reside in areas which have either less or no access to electricity.

Solar homes system (SHS) is a cost-effective solution to provide electricity to off-grid locations. Initiated in 2003, SHS gained impetus around 2013-2015 and then started to decline due to varied set of reasons explained below in detail, however in Bangladesh the SHS aims to continue over 2021 and ahead. SHS is managed by the Infrastructure Development Company Ltd. (IDCOL) and is playing a significant role in bridging the financing gap for developing medium to large-scale infrastructure and renewable energy projects in Bangladesh. The company now stands as the market leader for private sector energy and infrastructure financing in Bangladesh. IDCOL formulates standards for loan procurement, provides training and support to 57 (2015) partner organisations (PO) such as private banks which act as dealers of microcredit to poor households. Financing of this SCP Initiative is done by World Bank along with others, namely the Asian Development Bank (ADB), the German development bank (KfW), the German Agency for International Cooperation (GIZ), the Islamic Development Bank, and Japan's International Cooperation Agency) which provides funding through zero interest long term loan to ICDOL which in turn provides loans to PO at higher interest but for a shorter duration. The difference contributes to the profitability of ICDOL.

Typically, this funding process does not need any collateral. Households are provided loans with an annual rate of 8–15 % flat interest rate over a term of one to five years.

Payment terms are designed in such a way that the monthly instalment payments can compete with the equivalent cost of paraffin. At each step, the interest rate limit serves as an aid to the costs of promoting and managing the program, such as training homeowners with routine care and maintenance.

The system of standards and product guarantees controls equipment risk; equipment suppliers in the system are required to provide warranty on POs (from 20 years of solar module up to 3 years of charging control and circuit). If these components stop working customers can suspend their payments until the problem is resolved. POs compete to offer attractive credit packages that reduce some of the risks. For example, Grameen Shakti offers additional payment

guarantees and will purchase the system again if a grid connection is available. POs are expected to set up local centres to repair solar facilities and train professionals (usually women) to provide after-sales service, which produces local rental. Grameen Shakti, for example, has set up 46 Grameen Technology Centres to produce local SHS accessories. The POs sold SHS to customers on credit with payments spread out over a period of up to three years at interest rates of 12 to 16 %. Small grants, declining over time from 19 % of the cost in 2003 to 5 % by 2017, were given to increase the affordability of the SHS and to help the POs strengthen their institutional capability. The customers repaid the loans to the POs which repaid their loans to IDCOL.

Analysis of Barriers

The microfinance scheme is unique and the entire set-up of engineers and entrepreneurs from rural communities is innovative to finance this SCP but when it comes to Bangladesh due to extreme poverty and lack of access to better technology this scheme might not work on a full pace.

Even though the Government of Bangladesh is working on grid expansion, SHS creation and providing systems at no cost to the poorest households and public institutions under the TR/KABITA Program, but there is lack of coordination among the implementation efforts of the government that leads to decline in SHS installation post 2013.

Also, there are barriers that hinder the coordination amongst the development partners, implementing partners and other stakeholders that are involved in this SCP initiative.

Analysis of Enablers

First the microfinancing model that is used to implement this framework has led to the success of SHS creation at an expansionary rate. The financing technology has tied up various stakeholders in a single chain that accounts the participation of rural economy along with the implementing agencies which is supported under the rural electrification and employment generation scheme of Bangladesh.

Secondly the SHS market quality is supported by the Lighting Global Program (2010) to make modern SHS products accessible and accessible to off-grid users. booths to cater to more customers, thus increasing revenue.

More than 1 million SHS spent until 2013. Apart from the PV module, other components are produced at home, with the hiring of specialists in rural areas and in the production of charging controls and solar lights. This is supported through effective infrastructural and technological development authorities of Bangladesh.

Third the implementing authority IDCOL has enabled rural electrification and infrastructural development that has transformed the rural economy and reduce the level of unemployment and poverty. Further, the options for credit creation have opened the roots for other financial and renewable energy creation projects.

Impacts Generated

Social Impact: SHS households enjoyed greater safety, comfort, and convenience compared to non-SHS households. Bright electric lighting afforded a greater sense of security. SHS households had easier and lower cost access to TV, radio, fan, and mobile phone charging. SHS had a positive influence on women's mobility, general and economic decision-making, and sense of security.

Villagers were empowered as all Shakti engineers and technicians learn the business from scratch by providing a service to villages and enhanced social well-being by providing energy to rural population of Bangladesh.

Enhanced Livelihoods: This has directly improved the rural economic development as individuals are earning more and innovating across other areas as having a basic need, energy, met is allowing them to do much more than in the past.

Enterprise and Service Sector Development: The SHS benefited nearly 200,000 enterprise and social service customers with better quality light, extended hours of operation, and power for small appliances. These included offices (about 2,300), educational institutions (3,700), restaurants (270), retail shops (10,600), mosques (177,300), and other enterprises (4,600).

These beneficiaries accounted for about 5 % of the total SHS sold.

New green finance plan: loans are provided without any collateral and are repaid with weekly installments distributed throughout the year and various other financial models are available depending on each individual initial investment. The SHS program is a grassroots program that proves the success of rural community involvement and how a new low-income model can alleviate poverty and make natural growth possible.

Fuel savings: The SHS Program would have saved about 4 billion litres of kerosene from 2003 to 2021. The value of kerosene saved by households between 2003 and 2018 at the retail price is estimated at USD908 million (in constant 2018 USD discounted at 10 %).

By 2018, cumulatively, over 4.1 million SHS were sold under the SHS Program. The total solar PV capacity installed was 163 MW. Over their useful lifetime (conservatively assumed to be 12 years), SHS would supply about 2 GWh of electricity.

Employment Creation: The program contributed to the development of the solar PV industry, including SHS retailers, service providers, financiers, and manufacturers. The program led to backward integration of the industry with Bangladesh extending manufacturing from deep-cycle batteries and other components, including in later years, to solar PV module manufacture. At its peak in 2015, the POs had about 29,000 staff in their SHS operations. There was, in addition, indirect employment created in the SHS supply sector and those using the electricity available from SHS.

Environmental Management: SHS Program mandated that all battery manufacturers adopt international standards for battery manufacture and those facilities were regularly inspected by IDCOL. Four battery

recycling centres were supported, and all participating battery suppliers had to send their spent batteries for recycling. The global environment was improved by the reduced kerosene combustion due to the reduction in CO2 and black carbon emissions. The carbon emissions avoided between 2003 and 2021 by kerosene offset by the SHS are estimated at 9.6 million tons of total carbon emissions.

SCP Scheme implemented in Bangladesh through SHS has raised the household's value and willingness to pay for the related services. It was reported that the sale of 4.1 million systems in a target market of 15 million rural households without electricity at the start of the program.

SHS was economically justifiable from the national and global perspectives with a measure of EIRR 20% without considering global emission reduction benefits, from savings in kerosene and cost of lightening.

Households benefited substantially from the program on a financial basis, with an FIRR of 17.2% considering loan defaults by households to POs and 13 % if there had been no defaults based only on savings in kerosene/grid electricity use; the best evidence of benefits is the marketplace.

The SHS programme succeeded from 2003 to 2014 based on the implementation model of micro financing and through the leadership of IDCOL and other implementors that lead to strong implementation of SHS.

Post 2015 sale of SHS started to fall as the grid expansion increased household connections by 280% in five years caused defaults on SHS Households on debt repayments.

Further the SHS programme decline due to increased availability of the grid by the expansion of the TR/KABITA off-grid program that provided SHS to households at no cost and then led to expectations for free SHS.

The SCP initiative made a significant contribution and rural electrification. It provided electricity service that was adopted by rural households cost-effectively and with net benefits to all participants except kerosene dealers while also reducing kerosene consumption by 4.4 billion litres and reducing greenhouse gas (GHG) emissions by 9.6 million tons. SHS provided electricity to around 20 million people through the provision of 4.1 million SHS.

Lessons learnt

An innovative microfinancing scheme along with efficient implementing agencies have made the success of SHS possible. IDCOL along with other stakeholders has led to active participation in granting credit loans and implementation of SHS and achieving the objective of rural electrification in Bangladesh.

Technical and commercial sustainability has been a key to the success of the solar energy program. Technical assistance resources included in the project have aided IDCOL in establishing a market for

SHSs and its management. IDCOL's independent Technical Standards Committee approves the standards for SHSs and practiced constant enforcement with the POs of technical and performance standards. Benefits of economies of scale were achieved in implementation of SHS programme due to a large size of Bangladesh population.

Making this SCP affordable through a combination of consumer credit, subsidies, and product choice opened the way to their widespread adoption. The project showed that rural households will pay for a SHS if monthly costs are commensurate with current expenditure on other energy sources.

Case Study 5: Social Enterprise using Blended Finance tools to create Sustainable Livelihood Opportunities- Mountain Hazelnuts, Bhutan

Country: Bhutan

Sector: Agriculture

Summary

The following case describes the implementation of an innovative sustainable financing trend- Blended Finance. This category of capital uses a mix of public, private and philanthropic funds and targets development objectives of emerging and vulnerable economies. [135]Normally, the financial sector is restricted from providing finance to agriculture-based businesses due to the high level of perceived risks and inadequate economic viability. As a result, initiatives attempting to introduce sustainable practices in agricultural production find it difficult to access required funding assistance.

Here we see the instance of Mountain Hazelnuts, an agribusiness based in Bhutan with a unique public-private-community centric approach, which has benefitted from the blended finance tool offered by multilateral development agencies in partnership with the Royal Government of Bhutan. As the first 100% foreign direct investment of the country, it has set the standard for sustainable investment in Bhutan and other developing regions.

Background & SCP Issues

Agriculture is the primary source of income for over 50% of Bhutan's population but amounts to lower than one-fifth of the total GDP. Most of the rural population lives in poverty and given the hilly terrain, does not have access to good quality land, irrigation facilities and other required resources. Hence the potential for agriculture and related livelihood activities is limited.[136]

Building resilience in agricultural systems and introducing practices that are resource-efficient, and sustainable is one of the key ways of facilitating Sustainable Consumption and Production (SCP) in developing regions such as Bhutan. However, most initiatives targeting agricultural activities do not boast of the levels of economic benefits required to attract conventional sources of finance. The dismal risk-return ratio of agri-businesses discourages banks and other financiers from extending funding.

[135] *https://www.gafspfund.org/news/blended-finance-bhutanese-nutshell*
[136] *https://www.gafspfund.org/projects/blending-happiness-hazelnuts-bhutan*

Thrust on SCP Interventions

In order to overcome this barrier, a multilateral financing instrument- Global Agriculture and Food Security Program (GAFSP) was launched by the G20 with the specific intent of providing financial resources to agricultural projects across the value chain.

It is dedicated to eradicating hunger, malnutrition, and poverty in the least developed countries of the world by supporting sustainable agricultural practices. GAFSP forms partnerships with other development agencies as well as private sector actors to provide innovative financing solutions and promote sustainable agriculture and food security.

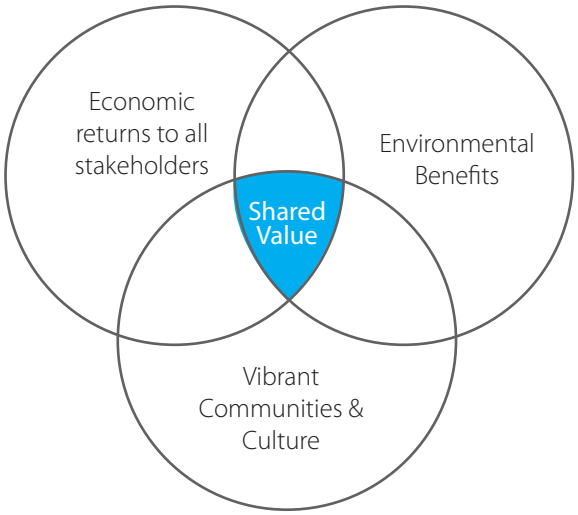
Against this backdrop, Mountain Hazelnuts, a social enterprise co-founded by Daniel Spitzer and Teresa Law, has been able to capitalise on funding from GAFSP and its partner multilateral financial institutions- IFC and ADB.

Founded as a public-private-community partnership along with the Government of Bhutan, the company's efforts to facilitate hazelnut plantations contribute to the achievement of SDG 12 by creating sustainable and reliable livelihood opportunities for rural populations, restoring ecological balance, and nurturing cohesiveness in the community.

The business model of Mountain Hazelnuts seeks to take advantage of the perfect growing conditions for the hardy hazelnut plant and the growing international demand among confectioners and food producers for the valuable tree-nut crop.

The community too contributes by virtue of their land-holding and agricultural labour. Accordingly, the shared prosperity model that the enterprise follows seeks to maximise value to all stakeholders in a sustainable manner.

Figure 6: *Shared Value Creation for Mountain Hazelnuts Project in Bhutan*



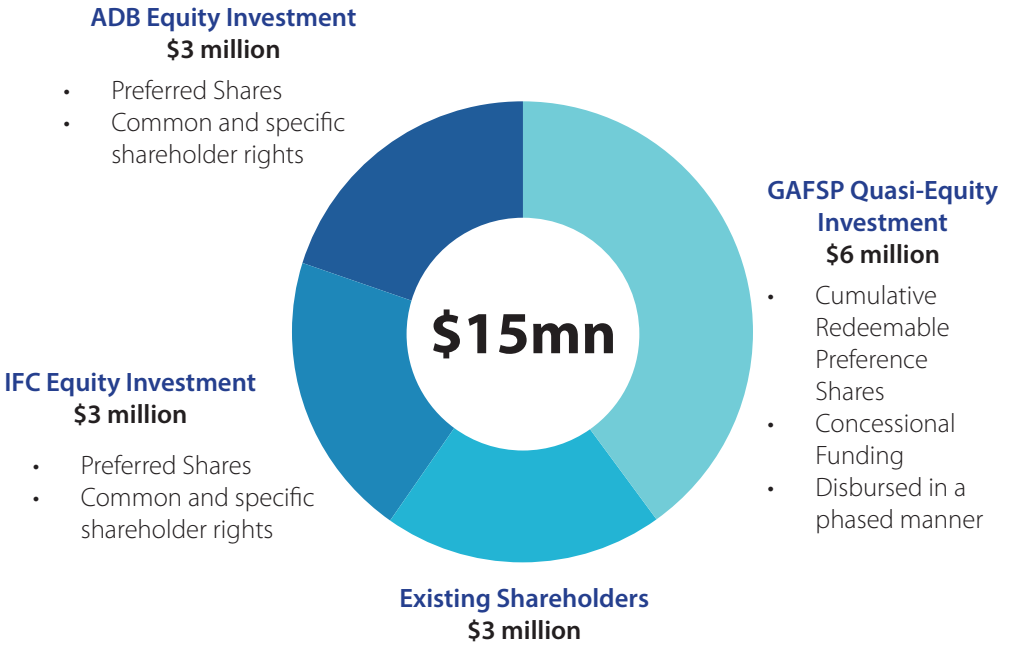
Source: Mountain Hazelnuts, 2022

Financial Structure of the Initiative: Thrust on Blended Financing

Mountain Hazelnuts marks Global Agriculture & Food Security Program's (GAFSP) first agribusiness investment in Bhutan. The funding for this enterprise came specifically as a part of GAFSP's Private Finance Window which channels donor funding from regional and multilateral agencies funding for agribusinesses with development impact potential that may not attract private capital due to commercial risks. Its support has meant a reduction in the perceived risks associated with the project and encouraged investments from both the Asian Development Bank (ADB) and IFC.

A total of $12 million investment has been injected in a phased manner by the three multilateral development agencies. IFC and ADB have each invested $3 million in equity and the Private Sector Window of GAFSP has matched it with a $6 million blended investment involving concessional funding. This form of financing has enabled Mountain Hazelnut to reach the break-even point and improve long-term profitability and cash flow.

Figure 7: *Financing Model of Mountain Hazelnuts in Bhutan*[137]



Source: IFC (Mountain Hazelnuts), 2016

[137] *https://www.ifc.org/wps/wcm/connect/06660ea0-81e9-4cce-8a6b-893ab7f9e5fe/GAFSP-Blending+Happiness-and-Hazelnuts-with-Finance.pdf?MOD=AJPERES&CVID=lvYEowM*

Analysis of Barriers

IFC was initially hesitant to invest given the high-risk profile of the project and its unique shared prosperity model wherein the company owns neither the trees nor the land and instead seeks to provide significant economic returns to all stakeholders. While such a vision is ideal in terms of sustainable production patterns, it raises investor concerns.

Following were some of the investor perceived risks of the project:

- Challenges in managing and persuading untrained farmers to adopt the level of good and sustainable agricultural practices required to grow the trees in rugged terrain and with limited infrastructure.
- Threats of virulent pests or natural calamities such as floods and earthquakes wiping out the plantations.
- Further apprehension regarding the ambitious and aggressive targets set by MH considering the growth period of the trees (4-5 years) and the need to establish a logistics and international marketing network from scratch before any meaningful cash inflows could be expected.
- Risks associated with the volatile nature of the global hazelnut market (prices had seen a fluctuation of over 100% in 2014 alone)
- Potential side selling by participating farmers in case of inability to form a bond of trust or buyers from neighbouring India and China offering better prices.

Analysis of Enablers

The substantial backing afforded by the GAFSP assuaged the investor's fears in terms of perceived risks of the project and allowed both IFC and ADB to invest in the project.

- Although Mountain Hazelnuts was not in a position to service debt for several years, GAFSP's choice of instrument- equity with the characteristics of a loan- enabled an investment with the best of both worlds, that is, fixed coupon and redemption timeline, no shareholder value dilution and no mandate to pay dividend each year.

How Enablers facilitated the growth of the initiative

The company began its operations in 2011 by delivering the first batch of hazelnut seedlings to registered farmers. At the time, the company was in too nascent a stage to receive international funding. By 2014, it had planted more than 2.5 million hazelnut trees and was better positioned for commercial production and generating first marketable yields. This renewed the interest of the IFC and in 2015, Mountain Hazelnuts had an injection of the first phase of equity investment by the three funding partners. The investment allowed greater scale and efficiency of operations and by 2017, the company reported $0.1 million of revenue and $2 million in the following year. As of 2020, Mountain Hazelnuts has grown to become the biggest private-sector employer in Bhutan. [138]

[138] *https://www.businesscalltoaction.org/news/bhutans-mountain-hazelnuts-a-transformative-model-in-a-remarkable-part-of-the-world*

Expected Impacts from funding the SCP initiative

- The project is expected to reach 15,000 farmer households in poorer, eastern regions of Bhutan. When including the household dependents, the project reach will translate to about 15% of the country's population
- The company's efforts will develop value chains for connecting local farmers to international markets
- Project activities are slated to create 400 additional jobs, support to over 1,200 entrepreneurs (including truckers, construction labourers), grow female labour force participation
- Over the productive lifetime of the 10.8 million (targeted) hazelnut trees, carbon dioxide up to 1.5 million metric tons will be sequestered
- By providing economic opportunities in rural areas, it will check the paralysing out-migration of younger populations to urban areas
- Yearly pruning of the trees will also offer a sustainable source of fuelwood
- The hazelnut orchards will be grown on degraded, otherwise barren, unusable land. Therefore, no existing crops will need to be replaced, meaning income generated will be incremental. In time, this income is projected to double the household income
- Planting orchards on deforested and overgrazed hillsides or land degraded due to 'slash and burn' or 'shifting cultivation' will also contribute to capturing soil and controlling soil erosion

Lessons Learnt

In order to bring about transformative and lasting change in consumption and production patterns across the world, it is essential to target the agricultural sector which accounts for a significant portion of the global greenhouse gas emissions. Unfortunately, the financial resources essential for the effective implementation of sustainable agricultural practices are often out of reach due to the restrictive mandates of most commercial banks. Therefore, funds created with the specific intent of catalysing private capital for targeted agricultural initiatives play a pivotal role in enabling the achievement of SCP goals. Funds such as the GAFSPs and others (for example, Agri3 Fund) can effectively bridge the divide between the needs of the agricultural sector and the limitations of financial institutions by tapping into partnerships with public and private funds and using tailor-made risk-mitigating financial instruments. This is possible in part due to the development potential compensating for financial returns and due to the operational capacity of international development banks in absorbing risks that other banks or capital markets may not find prudent.

Success stories such as that of Mountain Hazelnuts succinctly illustrate the sustainable development potential of innovative funds and instruments. Providing further impetus from policy, regulatory and overall systemic perspectives will go a long way in mainstreaming such evolving and sustainable finance avenues.

Case Study 6: Social enterprise capitalizing on a unique business model to mobilise funding from diverse sources- Bhutan Blossoms

Country: Bhutan

Sector: Agriculture

Summary

With growing awareness of the adverse impacts of exploitive production and consumption patterns, there is also a corresponding change in perception about social enterprises. What might traditionally have been looked upon as charitable initiatives have now set the stage for innovative business models that can simultaneously provide investable returns and environmentally or socially restorative outcomes. Such a change in perception has also stretched the boundaries of the types of financing available for such enterprises. From grants and loans to successful crowdfunding campaigns from individual backers, the universe of financing possibilities for social enterprises has noticeably expanded.

The following case illustrates the experience of a food-manufacturing social enterprise from Bhutan that has been able to attract funding from diverse sources by virtue of its unique profit-sharing model as well as sustainable and ethical business values.

Background

Over 60% of the population of Bhutan is engaged in farming but a significant portion of the farmers are subsistence farmers with small holdings and living below the poverty line. Given the geographical location of the country, arable land is limited and is further affected by climate change-induced disasters. Therefore, for many of the rural youth, livelihood opportunities in agriculture are dismal and this has led to a growing concern of rural to urban migration. In order to reverse such a migration trend while also furthering the country's larger aim at becoming entirely self-sufficient in food production, smallholder farm production needs to be increased and demand for local produce boosted.

However, agriculture is a particularly resource-intensive sector and expanding activities without consideration for sustainable practices can irreversibly endanger biodiversity and lead to land degradation.

Thrust on SCP Initiatives

Against this backdrop, Bhutan Blossoms (previously Druk Metho) was founded to tackle social and environmental challenges in Drachukha, central Bhutan. The enterprise grows, dries and markets organic edible flowers through a business designed to empower local farming communities and facilitate regenerative agricultural practices. They employ a profit-sharing model wherein farmers are considered central to the project and not merely raw materials producers.

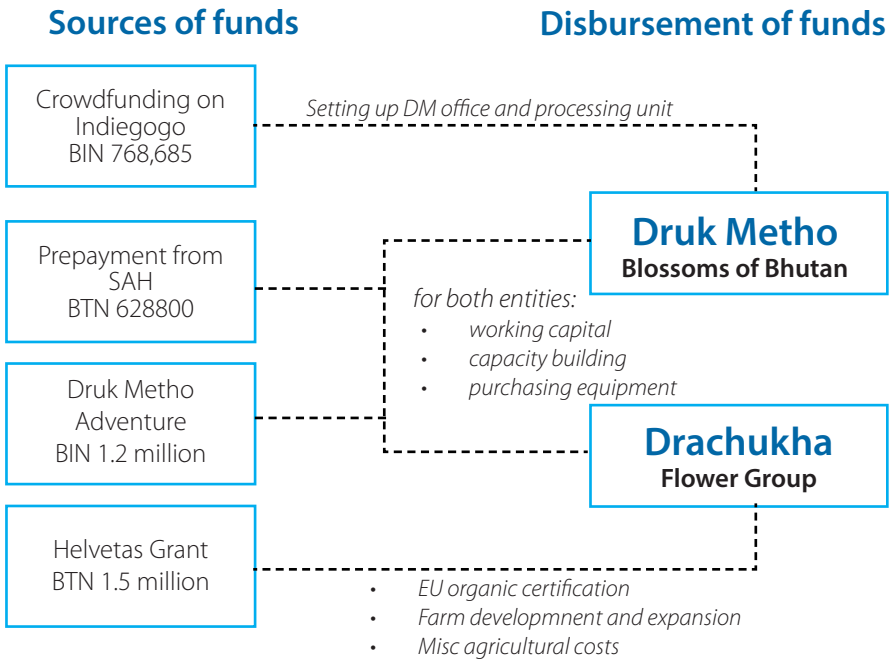
The developmental efforts of the enterprise embody both the Bhutanese philosophy of Gross National Happiness (GNH) as well as the global goals for Sustainable Consumption and Production practices. The four-pillar framework of GNH- Sustainable and Equitable Socio-economic Development, Good Governance, Environmental Conservation, Preservation and Promotion of Culture- guides the mission and progress monitoring of the enterprise. Ultimately having a sustainable source of income, livelihood opportunities for rural youth, food security and self-sufficiency promotes the happiness and holistic development of the citizens of Bhutan.

Thrust on SCP Initiatives

Bhutan Blossoms was established as a partnership between an existing business entity Druk Metho (DM) and a registered farmer's group Drachukha Flower Group (DFG). The two entities have employed a radical profit-sharing model according to which profits of the business are shared on a 40:60 basis among DM and DFG.

Since its inception, the project has been able to fund its operations by tapping into diverse financing mechanisms rather than relying on loans or private investment. In addition to conducting a successful crowdsourcing campaign, they received a grant from Helvetas, an independent development organisation from Switzerland, the entirety of which was used by DFG for community-wide agricultural development activities. As part of their development partnership with Swiss Alpine Herbs (SAH), they were also able to secure an initial prepayment which they paid back with flower delivery. Therefore, the enterprise does not have any significant financial liabilities while its assets are entirely owned by them, placing them in a healthy financial position.

Figure 8: *Financing Model of Bhutan Blossoms*



Source: Druk Metho Annual Report, 2019

Analysis of Barriers

There are several challenges inherent to financing agriculture-based business ventures. The low-risk appetite of conventional financiers, the uncertainty of economic returns and the dependence on climatic forces are a few of the common ones. In the case of Bhutan Blossoms, the following added to the perceived risks of the project:

- The lack of knowledge and experience of initial promoters (farming group and community members) in terms of building a sustainable business from scratch.
- Lack of existing market networks for the product and therefore the lack of a reliable source of revenue. The project's operations required them to venture into unchartered territories in terms of creating a new market segment for dried flowers and developing domestic and international networks to market their products.

Analysis of Enablers

Finance is crucial to the success of any project. But especially in the case of social enterprises, it is vital to be able to access sources of finance that not only share an economic vision but also align with and are willing to facilitate the developmental potential of enterprises. Bhutan Blossoms was able to connect with philanthropic funds, private sector companies and individual backers for due to their holistic approach across operations.

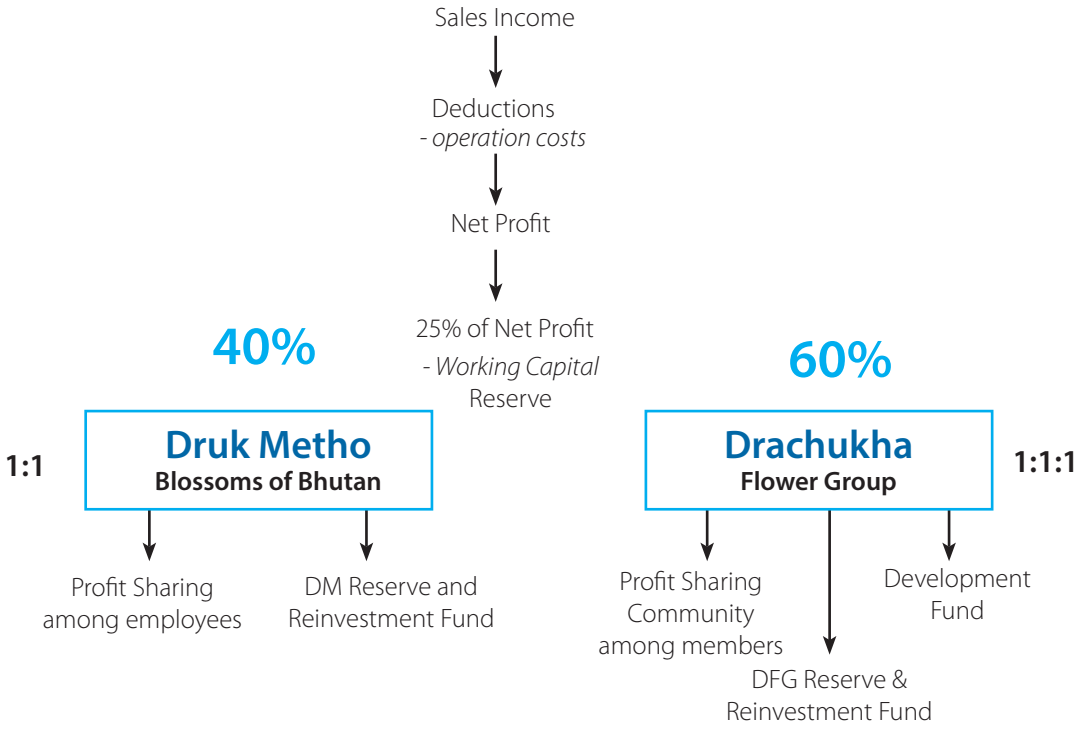
- By striking a partnership with Swiss Alpine Herbs, Bhutan Blossoms was able to secure a guaranteed market for their product and a reliable source of revenue. Thus, enhancing the financial viability of the enterprise.

- With the help of business experts from the Entrepreneurialism Clinic at JSW School of Law, and organic farming experts from Switzerland, Bhutan Blossoms has been able to strengthen and diversify their business model, such as developing products suitable for different markets including Australia and a premium product line for domestic markets. Such expansion efforts have increased the confidence and reduced risk perception of investors.

- Its crowdfunding campaign was a success because the enterprise was able to effectively communicate and stay true to their values. Features of the campaign included- openly stated campaign goals, flexibility for funders to choose preferred levels of contributions, complete transparency in the plans for fund disbursal and development impacts of operation. These resonated with individuals and organisations alike, who could then mobilise the required funds.

By making their enterprise fully transparent, employing an overarching profit-sharing model, and empowering their partner farmer group, Bhutan Blossom was able to attract funds from diverse channels. The revenue-sharing model employed by Bhutan Blossoms is central to the business philosophy and ethics of the enterprise.

Figure 9: *Revenue Sharing Model of Bhutan Blossoms*



Source: Druk Metho Annual Report, 2019

The terms of the agreement were arrived upon by taking into consideration the project's contribution to enhancing the livelihoods of all members, development of supply and value chain as well as the overall advancement of the community. Such commitment acts as a stimulus in mainstreaming sustainable practices and entrepreneurial vision in agriculture across the region.

How Enablers facilitated the growth of the initiative

Bhutan Blossom's business model and financial choices empower their partner farmer group and strengthen community relations. This in turn improves the management and flexibility of their logistics, product development and marketing facilitating sustainable, long-term growth.

Donations from crowdsourcing enabled them to:

- Become the first in the country to receive EU certification for organic farming (Bio Suisse Standard)
- Invest in equipment, seeds and other logistical requirements for marketing to Switzerland
- Build quality infrastructure for manufacturing processes and purchase professional drying equipment

As of June 2021, the company received a grant from the Bhutan Foundation and Loden Foundation. This enabled them to rebrand (Druk Metho to Bhutan Blossoms) and expand their operations. In addition to procuring equipment and furniture, they have been able to upgrade their packing

material and have begun exploring export markets for Australia. They have also been working on the pricing and feasibility of premium products in local markets.

Impacts

- The activities undertaken by the enterprise have provided a valuable and reliable source of income for the farmers in Drachukha village.
- By offering viable prospects for farming, Bhutan Blossom has contributed to stem the devastating effects of urban migration of youths on the community.
- By engaging in sustainable and regenerative farming practices they are contributing towards improving the agricultural landscape, food security and overall ecosystem health.
- Workshops and training sessions organised with local and international experts help in capacity building of members of both the entities, including farmers.

Lessons Learnt

Perceptions of high investment risk and lack of enticing results in agriculture are based on a multitude of factors. However, concerted efforts at thoroughly understanding the requirements of the value-chain and the underlying agricultural system, capacity building of the core team and the community can lead to the development of a financially, environmentally and socially viable business model.

As in the case of Bhutan Blossoms, having a sound foundation for their business model opened avenues of unconventional funding sources. Organising a crowdfunding campaign, let alone a successful one is still a fairly uncharted avenue for agricultural businesses. Bhutan Blossoms has set an example of how by focusing on sustainable and inclusive business models, one can attract funders and resources with shared values.

Case Study 7: Energy Renovation of Fragile Housing in Urban Areas of Ulaanbaatar

Country: Mongolia

Sector: Energy Efficiency

Context

Mongolia's cities, notably Ulaanbaatar, experience a construction boom and suffer from dangerous levels of air pollution during the winter, when residents burn raw coal for heating in temperatures that fall below -40°C. As part of Mongolia's Intended Nationally Determined Contributions (INDC), the country aims to supply 20% renewable energy by 2020, and 30% by 2030. To meet the increasing demand for electricity, reduce the country's heavy reliance on coal and improve energy security, Mongolia is committed to promote renewable energy (RE) development.

Pollution has significant impacts on citizens' health, especially in Ulaanbaatar. Increasing energy efficiency in housing and heating systems, and transitioning to alternative heating technologies are measures to reduce harmful air pollution levels [139].

The 8-month long heating season, temperatures hitting for several months -20 to -40°C and the absence of central heating systems for more than half of the urban population force them to rely on cheap and low-quality coal for satisfying household heating and cooking needs. This results in a dramatic situation of indoor and outdoor air pollution for all urban citizens. In terms of impact and specifically health impact, this might as well be the single largest challenge facing Mongolia currently [140].

Limiting fossil fuel consumption through improving the energy efficiency and decreasing heat loss of individual houses in the ger areas of the capital city is hence a key action to be undertaken to complement additional infrastructure and awareness raising projects aimed at reducing air pollution in the city, thus contributing to the reduction of respiratory infections, limiting the financial burden of excessive fuel consumption and eventually mitigating climate change effects.

Summary

Building on Geres' 20 years of experience in Asia's cold climate, the project **"Switch off air pollution" (2018-2021)**, supported by the European Union, aims at offering affordable

[139] *Mongolia goes circular the stepping stones*
[140] *ENERGY RENOVATION OF FRAGILE HOUSING IN URBAN AREAS OF ULAANBAATAR*
https://www.geres.eu/en/our-actions/our-projects/energy-renovation-fragile-housing-laanbaatar/
http://switch-asia.eu/project/switch-off-air-pollution/

building retrofit solutions to households living in semi-informal areas of Ulaanbaatar in Mongolia by focusing on insulation, heating and cooking efficiency. The objective is to increase coal efficiency and thermal comfort for families while decreasing the dramatic air pollution in Ulaanbaatar.

"Switch off air pollution" project is a coordinated initiative lad by Geres with People in Need, the Mongolian National Construction Association and Mongolian University of Science and Technology's Building Energy Efficiency Centre, in close collaboration with Ulaanbaatar Municipality and GCF funded Xac Bank green loan initiative, aiming at equipping communities and private sector with the tools to curve air pollution in Mongolia.

With broader goal to improve housing energy efficiency through the design and implementation of context-based technical solutions for the construction sector, the resort to advisory services and financial intermediation, the project aims to contribute to the addition of more sustainable consumption and building patters and behaviours. Following a comprehensive market approach for further replication and upscaling, the project intends to:

- Increase awareness of communities and households to pollution challenges and the health and economic advantages of energy efficiency
- Define appropriate and low-tech technical solutions for energy efficient dwellings, designed and shaped for dissemination to construction professionals and households
- Train and support construction MSMEs to sell and set-up energy efficient retrofit
- Define, support and provide financial intermediation services to link clients (households or SMEs) to green credit schemes such as current GCF funded XAC Bank green retail loan products.
- Further disseminate gender-informed Energy efficient solutions, perspectives and practices with the support of all stakeholders (loan officers, energy advisors, authorities) via targeted awareness raising activities.

Ultimately, it is expected that the project will pilot a system that could see systemic change, pending further replication, in:

- The overall improvement of health through the promotion of more sustainable energy consumption patterns and behaviour in the individual housing sector.
- The lasting reduction in coal and overall energy consumption and emissions of CO2 and particulate matters in ger districts and beyond.

Financial Structure and Source

A grant from EU SWITCH Asia programme: 2.191.896, 24 euro (EU contribution: 80%)

Through this project, it is expected to provide financial intermediation services to link clients (households or SMEs) to green credit schemes such as current GCF funded XAC Bank green retail loan products. For example, any microloans from XAC Bank for apartment owners who wish to put down a down payment or fully pay the upfront of Thermo-technically Retrofit project if possible)

Chapter

5

Policies on SCP Financing for Selected Asian Economies

Chapter 5: Policies on SCP Financing for Selected Asian Economies

The present chapter provides insights into the policies and regulatory framework on sustainable financing for SCP in particular in the selected South Asian countries. While most of these policies have been formulated through top-down approaches, an in-depth analysis of the regulatory framework reveals that some of the regulations and policies incentivise the framework on overall framework of finance for SCP.

Bangladesh

The government of Bangladesh has developed a keen focus on promoting green financing in the country. The Bangladesh bank has also devised green banking guidelines for the banks in 2011 which are implemented in two phases. The initial phase includes policy formulation and governance, the incorporation of environmental risk into credit risk management (CRM), the initiation of in-house environment management, the introduction of green finance, the creation of the Climate Risk Fund, the introduction of green marketing, online banking, supporting employee training, consumer awareness, and green events, the disclosure and reporting of green banking activities. The second phase includes establishing sector-specific environmental policies, green strategic planning, setting up green branches, improved in-house environment management, the formulation of bank-specific environmental risk management plan and guidelines, rigorous programs to educate clients, the disclosure and reporting of green banking activities [141]. The Bangladesh bank also initiated formation of sustainable financing units for collecting green financing activities and green financing projects in the country.

The government of Bangladesh has established the Sustainable and Renewable Energy Development Authority (SREDA) in 2012 as an agency to encourage and propagate sustainable energy, which includes both renewable energy and energy efficiency sectors of Bangladesh. SREDA operates the Power Division in the Ministry of Power, Energy, and Mineral Resources of the Government of Bangladesh as a coordinating body for the expansion of renewable energy projects in Bangladesh. SREDA has also constructed "Energy Efficiency and Conservation Master Plan" 2030 for Bangladesh. A snapshot of SCP Financing Policies is provided in the table below.

[141] *https://www.econstor.eu/bitstream/10419/190313/1/adbi-wp892.pdf*

***Table 16**: SCP Financing Policies in Bangladesh*

Regulatory Component	Key Characteristics	Financing Component
Renewable Energy and Environment Friendly Financeable Sectors [142]	Refinancing scheme launched by the Bangladesh Bank	
Sustainable Finance Policy for Banks and Financial Institutions [143]	• Implemented by BB in 2020 • Formulated to guide banks and FIs for their participation and contribution in implementation of INDCs for attaining respective SDGs • Integrates sustainable finance aspects into the monetary policy of Bangladesh	• Guide to sustainability linked finance in agriculture, MSMEs • Devise methodology for identifying green finance • Define the Sustainable Finance Taxonomy • Identification process of green products and processes • Developing Green Bond Standards • Inclusion of SCP aspects such as Resource Efficiency, Resource Recycling, waste management, Renewable energy, Energy Efficiency, Water use efficiency, waste and waste-water management eligible for green investments
National Adaptation Plan of Bangladesh [144]	• Formulation of NAP is executed by the Department of Environment and being financed by the GCF • Focus on medium to long term adaptation investment and enhance national capacity for integration of climate change adaptation in planning, budgeting and financial tracking process	

Source: Compiled by authors from various sources

[142] *Hossain, M. (2018). Green Finance in Bangladesh: Policies, Institutions and Challenges. ADB Working Paper Series.*
[143] *Govt. of Bangladesh, Sustainable Finance Policy, 2020. Available at www.bb.org.bd*
[144] *https://www.bd.undp.org/content/bangladesh/en/home/projects/national-adaptation-plan--nap-.html*

Cambodia

The Royal Government of Cambodia has initiated the National Strategic Plan 2013-2030 that promotes green economy and circular economy framework in Cambodia. The NSP 2013-2030 focus essentially on Green Investment and Green Jobs Creation, Green Economy Management in balance with Environment, Blue Economy Development with Sustainability, Green Environment and Natural Resources Management, Human Resources Development and Green Education, Effective Green Technology Management, Promotion of a Green Social Safety System, Uphold and Protection of Green Cultural Heritage and National Identity, Good Governance on Green Growth[108]. A snapshot of SCP Financing Policies is provided in the table below.

***Table 17**: SCP Financing Policies in Cambodia*

Regulatory Component	Key Characteristics	Financing Component
National Strategic Plan on Green Growth 2013-2030 [148]	• Green Investment and green jobs creation • Promote good governance on green growth • Effective green technology management • Blue Economy Development • Promotion of Green Social Safety system • Management of Green economy	Yes. The Plan exclusively focuses on attracting green investments in sectors such as agriculture, industry, trade, infrastructure, transport, tourism and other related areas • Mainstream green growth into financial, banking and economic systems • Issuing green certificates to financing institutions • Mainstreaming SCP framework into investment projects related to natural resources • Integrating the principles of 3R's into investments for natural resources • Allocating budget for green growth sectors
National Adaptation Plan Financing Framework [149]	• Drafted in 2017 • Lays down the key financing option for adaptation activities under climate change with a special focus on SCP initiatives in specific sectors	Yes. The Plan exclusively focuses on adaptation financing with focus on SCP- States the mid-term and long-term actions of finance mobilisation

[148] *https://www.greengrowthknowledge.org/national-documents/cambodia-national-strategic-plan-green-growth-2013-2030*
[149] *Royal Government of Cambodia, National Strategic Plan on Green Growth 2013-2030*

Regulatory Component	Key Characteristics	Financing Component
National Energy Efficiency Policy [150]	• Developed by the Ministry of Mine and Energy between 2015-2017 • The policy intends to regulate government actions to promote energy efficiency • Holds relevance for Business, Industry and Transport sectors	Yes. One of the actions plans under the NEEP is to enable incentives and financing for energy efficiency • Encourage incentives such as grants, rebates, tax incentives for funding the upfront cost • To incentivize private markets, non-monetary incentives such as granting developers priority • Some of the market instruments to be focused includes green bonds, energy efficiency credit lines, risk-sharing facilities etc.

[150] *Royal Govt. of Cambodia, National Policy, Strategy and Action Plan on Energy Efficiency in Cambodia*

China

The earliest labelled green financial products in China were green loans, which date back to 2012 when China Banking Regulatory Commission issued the Guidelines for Green Credit, in the context of heavy pollution issues getting big concerns for both the public and the government all over the country. [151] China has been exploring two pathways, "top-down" promotion at the top level and "bottom-up" grassroots level, to continuously promote green finance. [152] The People's Bank of China, together with 6 ministries released the Guideline for Establishing the Green Financial System on August 31, 2016. Since then, many corresponding policies and products were introduced subsequently, including the environmental disclosure requirement, green insurance, green funds, and the pilot zone for promoting green finance in local governments.

Resources conservation and environmental protection are the state policy basis for China's economic and social development. With the principle of accelerating the transformation of higher-quality, more efficient, fairer and more sustainable development and growth mode, the 13th Five-Year Plan of National Economic and Social Development (2016-2020) showed the direction for the green financing in China, which requests to establish a green financing system, and develop green credit loan, green bonds and green development funds.

The main goals of the 14th Five-Year Plan of National Economic and Social Development of China (2021-2025) include the distinct progress on the transformation to green consumption and production, and enhanced energy efficiency and resource efficiency. In the 14th Plan period, aiming at promoting green and low-carbon development, green financing will mainly support and promote the following five areas: (1) Clean, low-carbon and efficient utilization of green energy; (2) Green technology innovation and the development of green industrial system; (3) Green buildings; (4) Green and low-carbon consumption; (5) Pilot projects in zero-carbon communities, regions and cities to contribute to the achievement of carbon peaking by 2030. [153]

[151] *Green Finance in China: Overview, Experience and Outlook Research Center for Green Finance Development. Tsinghua University National Institute of Financial Research. 2021*

[152] *2019 White Paper on Green Finance and Social Responsibility. The Export-Import Bank of China*

[153] *The development trend of green finance from the "14th Five-Year Plan". https://envi.ruc.edu.cn/index/index/news_cont/id/4084. html*

Nepal

The Nepalese government has taken efforts in integrating Sustainable Development Goals (SDGs) into its National Development Plans (including its 15th five-year plan from 2020-2024) and even attempted to localise the indicators and targets by formulating a relevant Roadmap. In spite of such efforts, the country has faced institutional gaps in planning versus budgeting and financing for such goals. The United Nations Joint SDG Fund has developed a Joint Programme for Nepal with the aim to cover such gaps and accelerate integration at subnational and national levels. By focusing on a decentralised mechanism, the ongoing programme both provides assistance to the government and engages the private sector in order to adopt multistakeholder financing strategies and mobilise support from development partners. [154]

Additionally, in 2018, the central bank of Nepal adopted the 'Guidelines on Environmental and Social Risk Management for Banks and Financial Institutions'. This enabled progress in the development of its green finance system from 'Preparation' to 'Implementation' stage as defined by the Sustainable Banking Network. [155]

The PPP policy is a good starting point for mobilising finance in more innovative and risk-resilient ways. Demonstrating successful PPP projects can help create awareness and further encourage climate-smart investments from varied sources. Efforts towards solving for existing barriers such as lack of standardised technical appraisal and screening criteria will further assist in facilitating PPPs.

***Table 18**: SCP Financing Policies in Nepal*

Regulatory Component	Key Characteristics	Financing Component
Guidelines on Environmental and Social Risk Management for Banks and Financial Institutions	• Implemented by the Nepal Rashtra Bank • Lays out in details the identification, assessment and management process of Environmental and Social risks	Provides guidelines on sustainable financing

Source: Nepal Rashtra Bank (2018). Guideline on Environmental and Social Risk Management for Banks and Financial Institutions

[154] *https://jointsdgfund.org/programme/reorienting-public-finance-sdgs-acceleration-and-leveraging-additional-resources-nepal*
[155] *https://greenfdc.org/green-finance-for-the-bri-country-nepal-can-lessons-from-china-help/*

Indonesia

As seen above, the Government of Indonesia is a proactive proponent of green finance in the country. By formulating and implementing policies targeted at increasing the feasibility of green project financing within the ambit of conventional banking, the Government of Indonesia is promoting the uptake of sustainable production and consumption practices. [156]

A snapshot of SCP Financing Policies is provided in the table below.

***Table 19**: Financing Policies in Indonesia* [157]

Authority	Policy Component	Year of Issue
Bank of Indonesia	Green Lending Model Guidelines for Mini Hydro Power Plant Projects	2012
Bank of Indonesia	Government Regulation on Social and Environmental Responsibility of Limited Liability Companies	2012
OJK (Financial services authority)	Roadmap for Sustainable Finance in Indonesia 2015-2019	2014
OJK (Financial services authority)	Framework and Regulation for Green Bond Issuance	2017
Directorate General of budget financing and risk management- Ministry of Finance	Green Bond & Green Sukuk Framework	2017

Source: ADB (2020). Green Bonds for Financing Renewable Energy and Energy Efficiency in Southeast Asia: A Review of Policies

[156] **Green Bonds for Financing Renewable Energy and Energy Efficiency in Southeast Asia: A Review of Policies (adb.org)*
[157] *Green Bonds for Financing Renewable Energy and Energy Efficiency in Southeast Asia: A Review of Policies (adb.org)*

Philippines

The Government of the Philippines has initiated 'The Philippine Development Plan 2017-2022' with the aim of attaining inclusive green growth and more competitive and sustainable sectors of the Philippine's economy. This plan is in line with the initiation of the SCP activities undertaken in Philippines as the plan essentially aims at making Philippine rank globally in the Global Innovation Index at 74 out of 128 economies in 2016 and become top of one third by 2022. The plan targets to reduce poverty levels from 21.6% in 2015 to 14.0% in 2022 [158]. The plan further gives special distribution of activities undertaken by humans in terms of social, institutional, demographic, political. The plan also targets Philippines to become a middle-income country by 2022. This will ensure implementation of SCP interventions in various sectors such as agriculture, infrastructure, tourism, transport in order to attain energy efficiency and capacity generation in the economy of Philippines. A snapshot of SCP Financing Policies is provided in the table below. A snapshot of SCP Financing Policies is provided in the table below.

***Table 20**: SCP Financing Policies in Philippines*

Regulatory Component	Key Characteristics	Financing Component
Philippines Action Plan for Sustainable Consumption and Production [159]	serve as a guiding framework to influence and steer sustainable behavior and practices across sectors and levels of government by implementing programmatic policy reforms and set of actions over the short- (2020-2022), medium- (2022-2030), and long-term (2030-2040). Main focus on Policy, R&D, Innovation, Technology, Infrastructure, Promotion and Education	None
Sustainable Finance Framework [160]	• Tabled by the Department of Finance • Framework sets out how it intends to raise green, social or sustainability bonds, loans and other debt instruments in the international capital markets • Lays down the framework to ensure transparency and disclosure, eligibility of social and green projects	

Source: Compiled by authors from various sources

[158] *https://pdp.neda.gov.ph/wp-content/uploads/2017/01/PDP-2017-2022-07-20-2017.pdf*

[159] *Govt. of Philippines, Philippines Action Plan for Sustainable Consumption and Production, available at https://sdg.neda.gov.ph/philippine-action-plan-for-sustainable-consumption-and-production-pap4scp/*

[160] *https://www.dof.gov.ph/the-republic-of-the-philippines-launches-inaugural-sustainable-finance-framework/*

Philippines has emerged as one of the leading ASEAN nations to initiate green financing for SCP in the economy. The Government of Philippines has enabled a regulatory framework to support green financing for various SCP interventions across different sectors. The NEDA has developed Philippines Action Plan for Sustainable Consumption and Production (PAP4SCP) which will provide a framework for promotion of climate resilient and sustainable development of different sectors of the economy [161].

The government of Philippines is committed to Paris Climate Agreement which aims to mitigate the adversities and climate change vulnerabilities. This led to creation of interagency green taskforce which is led by the department of Finance of Philippines. This interagency green taskforce will facilitate green financing for development of various sectors of the country which will be in line with the SCP interventions in the country [162].

Philippines has also developed a strategic roadmap for manufacturing and industrial development. This has been financed through various financial instruments that promote inclusive green growth of manufacturing and industrial sector and by enabling an environment for green job creation, green service sector creation [163].

[161] *Green Infrastructure Investment Opportunities: Philippines 2020 Report (adb.org)*
[162] *Green Infrastructure Investment Opportunities: Philippines 2020 Report (adb.org)*
[163] *Greening-the-Philippine-Manufacturing-Industry-Roadmap.pdf (snrd-asia.org)*

Bhutan

Values of sustainability form an integral part of the policy making process in Bhutan. This is evident from the pioneering shift to a 'high value - low volume' tourism policy that the country adopted back in 2008 with the intention of preserving their natural endowments in the long run. Similarly, other industries falling under the purview of SCP priority sectors have also been directed by measures and values of sustainable development.

Several of the SCP linked policy initiatives have been undertaken by the National Environmental Commission. These include integrating SCP initiatives within national policies and public procurement processes along with facilitating infrastructure for sustainable hotels and other operations.

Sector-wise SCP-related policies implemented in Bhutan:

- Integrated Energy Master Plan- Developed by the Department of Renewable Energy (DRE), the policy describes the plan for improving energy access, efficiency, governance and transition to low-carbon energy. (TERI, 2010)
- Green tax on use of fossil fuels in the transport sector- With the aim of discouraging dependence on fossil fuel powered transport, a 5 % green tax was imposed by the government on fossil fuels as well as on the import of fossil-fuel run vehicles.
- Economic Development Policy (EDP) 2016- The policy was formulated in order to prioritise local production and consumption activities and establish better building and product standards with the long-term aim of incorporating sustainability into the ideals of economic growth. The EDP also calls for the promotion of Brand Bhutan by developing organic products with minimal ecological impact production processes. (NSB, 2020)
- Cottage, Small and Medium Industry (CSMI) Policy 2012- It specifies six strategic goals including facilitating access to finance and incentives, improving market access and encouraging competitiveness and innovation. By defining a clear direction for the development of the CSMI industry, the policy attempts to level the playing field and get them ready for the growth and challenges associated with globalisation (CSMI Policy, 2012).
- National Waste Management Strategy 2019- In line with Bhutan's NDCs, the waste management strategy seeks to implement the principles of circular economy and formalised the goal of Zero Waste Bhutan. (RGoB, 2021)
- Sustainable Hydropower Policy 2021- The policy develops schemes targeted towards ensuring energy and water security, while enhancing climate resilience overall. It also provides for exploring the potential use of hydrogen in producing green and renewable electricity (ibid)
- National Energy Efficiency & Conservation Policy 2019 (ibid)
- Energy Efficiency Roadmap 2019 (ibid)

In addition to the sector specific policies, Bhutan's 12th Five Year Plan (2018-2023) seeks to achieve self-reliance, financial inclusion and green socio-economic development. The successful implementation of the Five-Year Plans and NDCs depends on the successful mobilisation of finance from conventional as well as innovative sources and instruments.

Accordingly, the country has taken efforts to boost its domestic resource contribution through rationalisation and better management of government expenses, public sector enterprises, broadening the tax base and encouraging public-private partnerships. The results of these efforts can be seen in the increase in domestic funding for development in the 11th FYP as compared to the previous period. (GNHC, 2021)

While domestic funding has grown, external funds continue to be critical, particularly to address the overall structural challenges impacting SCP activities. A significant percentage of the capital expenditures planned within the 12th FYP are dependent on external borrowings and grants. Priority sectors like the Cottage and Small Industries sector are, therefore, being opened for FDIs in joint venture partnerships with local production and manufacturing units. (ibid) There is also a shifting focus towards green and innovative finance. Global funding platforms like the Climate Investment Fund and the Green Climate Fund have been engaging in SDG achievement programmes in Bhutan. However, the regulatory and policy environment required to facilitate innovative financing instruments is still in its nascent stages.

To further the development of sustainable finance in Bhutan, the 12th FYP provides operational priority to enhancing sustainability by way of financial inclusion and other strategies. The systemic benefits of access to financial services to the economically marginalised in society are widely recognised among policy research (ADB, 2021). These benefits can be even more pronounced when considering the nature of SCP projects and business activities. Particularly in agribusinesses and tourism SMEs access to appropriate financial services can go a long way in facilitating the uptake of sustainable and green practices.

The Royal Monetary Authority of Bhutan (RMA Bhutan) is the driving force behind the development of its most recent green finance policy effort- the roadmap on green financing. The roadmap, too, strives to highlight elements of financial inclusion and create tools and regulations for upliftment and monitoring of the country's financial structures (RMA Bhutan Embarks on Green Finance Roadmap, 2020). The strategies adopted by the RMA seek to align policies across the financial and industry sector with the overall sustainability policies of Bhutan. Such concerted alignment has led to holistic reform among bank and non-bank financial institutions as well as capital markets. While the connection between such financial reform and climate change mitigation and adaptation exists as a bigger picture, the associated benefits on the granular scale of SCP projects and investments are worth exploring (Penjore, 2020). A snapshot of policies is provided below.

***Table 21**: SCP Financing Policies in Bhutan*

Regulatory Component	Key Characteristics	Financing Component
High-Value, Low-Volume policy [164]	• Promoting tourism that is environmentally and ecologically friendly, socially and culturally acceptable and economically viable • Promote Bhutan as an exclusive travel destination based on the principles of Gross National Happiness	No
Sustainable Mountain Tourism by Bank of Bhutan [165]	• Launched by the Tourism Council of Bhutan, supports eco-tourism as a tool to strengthen biodiversity conservation • Program supported by the GEF and UNDP and co-financed by Bhutan for Life, WWF and Bhutan Trust Fund for Environmental Conservation (BTFEC).	Elaborates the financing aspects of the scheme
National Credit guarantee scheme of Bhutan- Bank of Bhutan[166]	• Lunched in Oct 2020 • Financing MSME's in agriculture, production & manufacturing, services • Balanced debt financing supported by collaterals	Not all initiatives directly linked to SCP

Source: Compiled by authors from various sources

[164] *https://www.tourism.gov.bt/about-us/tourism-policy.*
[165] *https://www.icimod.org/wp-content/uploads/2021/06/BOBL-Prem-Moktan.pdf*
[166] *https://www.bob.bt/business-banking/borrow-loans/national-credit-guarantee-scheme/*

Thailand

Development on the various aspects of sustainable finance is comparatively new in the Kingdom of Thailand. One of the most prominent developments is the initiation of the Sustainable Financing Framework which outlines the use of proceeds across projects categorised as green. According to Sustainalytics, the framework is well aligned with the international Green Bond Principles 2018 (GBP), Social Bond Principles 2020 (SBP), Green Loan Principles 2020 (GLP), and ASEAN Sustainability Bond Standards 2018 (ASEAN SUS) [167]. The green eligible categories pertain to the core activities of SCP. The major developments in the sphere of SCP finance are listed below:

***Table 22**: SCP Financing Policies in Thailand*

Regulatory Component	Key Characteristics	Financing Component
Sustainability Reporting Guidelines [168]	• Mandated by the Securities and Exchange Commission • Implemented by Stock Exchange of Thailand	
CSR Reporting requirements	• Mandated by the Stock Exchange of Thailand	
Sustainability Development Roadmap for Listed Companies [169]	• Mandated by the Securities and Exchange Commission	
Sustainable Finance Framework	• Implemented in July 2020 • Outlines the use of proceeds, process of evaluation and selection of projects, management of proceeds, reporting and review	Outlines the use of green proceeds

[167] *https://www.pdmo.go.th/pdmomedia/documents/2020/Jul/KOT%20Sustainable%20Financing%20Framework%20Second%20Party%20Opinion.pdf*

[168] *https://www.asean-csr-network.org/c/images/Resources/Reports/2018_Sustainability_Reporting_in_ASEAN_Countries.pdf*

[169] *https://www.sec.or.th/cgthailand/EN/pages/overview/sustainabledevelopmentroadmap.aspx*

India

The regulatory framework for sustainable finance in India is gradually evolving over the years. While India has emerged as one of the most attractive destinations for investors, more investors are looking forward to investing across the core areas of SCP. The policy framework on sustainable finance has been steered by the central bank of the country i.e., the Reserve Bank of India through issuing a circular in 2008 to raise awareness of banks on CSR, non-financing reporting and sustainable development. Since then, there has been a pressure to issue green bonds and comply with disclosure requirements [170]. The table below presents a snapshot of the various policies on sustainable finance and SCP in particular.

***Table 23**: SCP Financing Policies in India*

Regulatory Component	Key Characteristics	Financing Component
Green Debt Securities Regulations [171]	• Implemented by Securities and Exchange Board of India (SEBI) • Lays out the details of end-use requirements and disclosures	• Details out the list of SCP projects and activities that can be financed (renewable energy, clean transportation, sustainable water management, energy efficiency including efficient and green buildings, sustainable waste management, sustainable land use
Priority sector Lending [172]	• Expansion of the list by Reserve Bank of India	• Includes financing of start-ups and loans to farmers for installation of solar plants and compressed biogas plants.
Reporting Regulations [173]	• BRSR made mandatory by SEBI for 1000 listed companies for FY 2022-23	• Applicable to all sustainability related projects including SCP • Contains detailed indicators on sustainable sourcing and environment
Social Stock Exchange Initiative [174]	• SEBI has approved the creation of SSE in September 2021	• Enable SMEs to generate finance through listing on the Exchange

Source: Compiled by authors from various sources

[170] *https://www.lse.ac.uk/granthaminstitute/news/what-next-for-sustainable-finance-in-india/*
[171] *https://www.sebi.gov.in/sebi_data/meetingfiles/1453349548574-a.pdf*
[172] *https://www.rbi.org.in/Scripts/BS_ViewMasDirections.aspx?id=11959*
[173] *https://www.sebi.gov.in/sebi_data/meetingfiles/apr-2021/1619067265752_1.pdf*
[174] *https://www.icsi.edu/media/webmodules/11112021SOCIAL_STOCK_EXCHANGE.PDF*

Chapter

6 Overall Assessments on SCP Financing for Selected Sectors

Chapter 6: Overall Assessments on SCP Financing for Selected Sectors

The secondary research leading up to this report has indicated to certain salient points with regards to the sources of financing for SCP initiatives in Asia. Across the studied countries we have seen the majority financial flows in the form of grants, official development assistance (ODA) and loans from multilateral banks.

This makes sense considering the scale of interventions required in priority sectors such as energy, transport, and infrastructure. On the other hand, sectors such as agriculture and tourism that operate on both large and small enterprise scale have seen a growing availability of finance from private funds and financial institutions in addition to government and other public financing.

Public financing in this case refers to the funds channelled through national governments and is not limited to national development budgets. When multilateral funds opt to support the sustainable development goals of developing countries, they inject funds via the relevant ministries and government accredited institutions. As a result, these funds are often mobilised to facilitate projects in sectors that are in line with the development objectives of the current governments. Likewise, multilateral financial institutions such as the World Bank and ADB also use their resources as opportunities to bring about preferred government reforms on national scales or in certain cases for international diplomatic alliances.

National agencies channelling international development funds often also implement the projects on behalf of the investor. The maturity of these agencies plays a role in the country being able to offer a pipeline of feasible sustainable projects to international development organisations and facilitate the inflow of required funds. For instance, the PT Sarana Multi Insfrastruktur (SMI) and Financial Service Authority (OJK) in Indonesia function under the aegis of the Ministry of Finance and support renewable energy and green infrastructure projects (Susantono et al., 2021).

Cases of public financing for SCP initiatives in selected countries:

- SCP outreach in Asia- With the intention of promoting SCP activities in Bhutan, Cambodia, Laos, Myanmar (Burma), Thailand and Viet Nam, the project is funded by a grant from the Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety in Germany. Ministries from each of the participating countries act as implementing and political partner to support the programme objectives. [175]

[175] *https://www.international-climate-initiative.com/en/project/verbreitung-von-nachhaltigen-konsum-und-produktionsmuster-scp-in-asien-die-naechsten-5-laender-scp-outreach-20-i-330-asia-g-the-next-five/*

- Green Climate Fund and Clean Energy Financing in ASEAN countries- The GCF is global financing platform established to fund climate change mitigating projects in developing countries. Among other sustainable projects, GCF has financed clean energy projects in ASEAN countries like Vietnam and Indonesia. It uses lending and guarantee instruments and helps promote regulatory environments that are conducive to SCP activities. (Susantono et al., 2021)
- Result-based lending by ADB for sustainable energy transition- Public financing instruments extend beyond grants and loans. Institutions like the Asian Development Bank offer innovative programmes such as result-based lending for sustainable energy access in Indonesia. Here, finance flows are linked with performance or the achievement of objectives. (ibid)

The above cases, among many more ongoing and planned programmes, illustrate the potential impact and far-reaching scale associated with access to public finance for purposes of SCP promotion. However, despite the efforts and commitments of public development organisations, in reality their funding capacity is severely limited in its scope. [176]

The renewable energy and energy efficiency sector by itself requires approximately $290 and $11 billion respectively to achieve its 2025 goals (Susantono et al., 2021). The investments required to meet overall SDG 12 and other national and regional goals are significantly larger and cannot be covered within the purview of public finance. It is therefore crucial to mobilise private or commercial capital to acquire the required investment across sectors.

In addition to closing the financing gap, private sector financing also comes with the advantages of market efficiencies [177]. Particularly in a sector like agriculture, that in South Asia is dominated by small-scale and marginal farms, government-run financial incentives or subsidies are often riddled with inefficiencies and roadblocks from intermediaries. [178]

Growth in Private Financing for SCP Initiatives

The last few years have seen a substantial growth in the diversity of available financial instruments and investor risk appetites in the Asia Pacific region. A survey conducted by HSBC Bank [179] highlighted a shift in investor sentiment with regards to the broad environmental and social issues related to business and production operations. Such enthusiasm is particularly evident in the infrastructure sector where support for projects like smart cities and waste management is gaining popularity among commercial and institutional investors. Similarly, projects targeted towards

[176] *How EST Asia can contribute to Rio+20 outcomes - "The future we want"- by mobilising private sector financing for the realisation of next generation solutions for sustainable, low carbon transport in Asia. (2014, November). Integrated conference of better air quality (BAQ) and eighth regional environmentally sustainable transport (EST) forum in Asia, Colombo, Sri Lanka.*

[177] *How EST Asia can contribute to Rio+20 outcomes - "The future we want"- by mobilising private sector financing for the realisation of next generation solutions for sustainable, low carbon transport in Asia. (2014, November). Integrated conference of better air quality (BAQ) and eighth regional environmentally sustainable transport (EST) forum in Asia, Colombo, Sri Lanka.*

[178] *https://www.adb.org/projects/documents/reg-48916-001-tar*

[179] *https://www.gbm.hsbc.com/insights/sustainable-financing/sfi-survey-asia*

developing energy efficiency and generating renewable energies are receiving momentum from private financiers (ibid).

Although the willingness of private banks to provide sustainable finance in the Asia Pacific region is improving, as is evident in the lending activities of global commercial banks like Citi [180], availability of these sources is skewed towards the more financially practical and investable avenues. For instance, within the energy sector that has had takers from both public and commercial funders, commercial funders tend to gravitate towards utility scale solar PV and wind technologies (Susantono et al., 2021). This observation is justified not only by the potential for returns associated with these projects (which remains the primary goal of private finance) but also by the current and anticipated policy/ regulatory incentives.

Private funding in these cases can take several forms with the broadest classification being debt or equity financing (ibid). There has also been an uptake in Public-Private-Partnership (PPP) investments in the region. The track record of a few successful pilot programmes has been a significant driver for attracting more related investments in the various priority sectors associated with sustainable consumption and production. A key selling point for PPP projects has been the marriage of development objectives with private performance and scalability.

Another instrument that is being tapped into and has further potential is the bond financing market. Government-issued green bonds tend to have an energy or infrastructure-based focus. For instance, the rapidly growing green bond market in China is aligned with the Chinese government's ambitions regarding its clean energy transition [181]. Unlike such government-issued bonds, corporate climate bonds have more diversity within their portfolios and accordingly facilitate improved financial access across manufacturing, tourism, and other SCP-linked sectors (Susantono et al., 2021).

While such trends are promising, Asian capital markets, with the exception of mainland China, are still in their infancy [182] and public finance continues to dominate among the funding avenues available for sustainable development-centric production and consumption projects. Over the course of the last decade, Development Financial Institutions (DFIs) have alone injected over $9 billion in the ASEAN region for clean energy projects.

At this juncture, it is important to note that most of the drivers in favour of sustainable finance in Asia are brought about by the country's policy environment rather than free market forces. According to a survey conducted by HSBC, both investor's sense of responsibility and client pressure in terms of the negative impacts of business on environment and society is fairly lower in Asia as compared to their global counterparts. Without a doubt, the interpretation of these results calls for greater nuance. However, they do indicate towards the status

[180] *https://www.citigroup.com/citi/news/2021/211109b.htm*

[181] *https://www.adb.org/sites/default/files/publication/403926/adbi-wp814.pdf*

[182] *https://www.gbm.hsbc.com/insights/sustainable-financing/sfi-survey-asia*

of green market maturity in Asia. This is further substantiated when considering the relatively lower integration of ESG factors within lending and investment decisions among financial institutions in Asia and is evident from the number of bankers, asset managers and other investment institutions being signatories to international sustainable finance forums. Essentially, while private capital market for green initiatives has grown in absolute terms, it only constitutes a minor segment of the total assets managed across Asian countries. This has inevitable consequences on the access to commercial lending for SCP activities which continue to be sold at a premium over conventional project financing applications [183].

In analysing the status of private financing, we find that in addition to some intuitive causes such as the high-risk profile and unfamiliar project models associated with SCP initiatives, it can also be attributed to other more systemic and long-term barriers.

Barriers to private investment in SCP financing:

Despite growing awareness, private financing has to contend with several barriers before they can attract investment to the levels required at this stage of the global climate and justice crisis.

- SCP initiatives in key/priority sectors (energy, agriculture) have long gestation periods and require substantial capital investment before they can be commercially viable. It goes against the mandate of commercial banks to finance such long-term, high-risk projects without adequate risk participation and management.
- Private lending to agriculture sector is also further undermined by other perceived production risks such as climatic and adverse weather risks, risks of default and side selling by farmers etc. [184]
- Another barrier that is important to consider is the absence of a geographically well-connected banking network in farming or rural regions of developing countries of Asia.
- A sector-wide, region-wide issue holding back sustainable finance is the absence of adequate disclosure requirements covering ESG and other systemic, high-risk elements. [185]
- Conventional bankers do not always have the technical know-how to be able to satisfactorily assess SCP projects. Take the case of Thai bankers who have been building expertise in understanding the project financing needs of renewable energy projects, particularly solar and hydro. However, for niche areas like Bioenergy and wastewater management, specialist expertise continues to be required. Considering

[183] *https://www.adb.org/sites/default/files/publication/403926/adbi-wp814.pdf*

[185] *https://www.adb.org/projects/documents/reg-48916-001-tar*

[186] *https://www.adb.org/sites/default/files/publication/403926/adbi-wp814.pdf*

the relatively narrower reach of the Thai banking sector as opposed to global financial institutions, it is not always feasible for individual banks to develop specific competence organically like they do in developed markets. [187]

- In the energy sector, in many developing Asian countries, it is still more economical to invest in fossil fuels due to continuing government subsidies projects. Hence investors tend to direct their investments in coal and other fuels rather than finance the clean energy transition.
- The financial aspect of sustainable financing for Solid Waste management is market driven. This means that as the volatile market prices for scrap materials fluctuate, they impact business revenue. Since private capital is primarily revenue/ profits driven, guarantees or other similar instruments are needed to build the confidence of private investors and safeguard them against the fickleness of market forces. [188]
- SCP project might raise possible higher cost and consequently lower economic market competitiveness. It is still difficult for banking or investors in defining and determining SCP activities in practice before the project is implemented.
- It is challenging on how to monitor and ensure the implementation of the financed SCP activities to achieve the designed and expected climate and environmental benefits.
- While on the one hand we have seen policy acting as a driver to mobilise sustainable finance, in certain cases such as in the transport sector, regulations tend to set a limitation on the inflow of private investment. [188]

Addressing barriers

Some of these barriers are addressed by utilising innovative financial instruments such as blended finance. Blended finance capitalises on the credit rating and risk appetite of multilateral development banks (MDBs) and other international financial institutions to mobilise private capital inflow. Using guarantees and risk mitigation measures, blended tools can support the financing needs of SCP activities. [189]

Blended instruments often also have the provision for technical assistance and capacity development. When complemented by the regional expertise of MDBs, there is a greater potential to scale up private investment for SCP projects [190]. A key example is that of GAFSP as we have seen in the case study of Mountain Hazelnuts in Bhutan.

[187] *https://doi.org/10.1371/journal.pone.0231933*

[188] *How EST Asia can contribute to Rio+20 outcomes - "The future we want"- by mobilising private sector financing for the realisation of next generation solutions for sustainable, low carbon transport in Asia. (2014, November). Integrated conference of better air quality (BAQ) and eighth regional environmentally sustainable transport (EST) forum in Asia, Colombo, Sri Lanka.*

[189] *https://www.oecd.org/dac/financing-sustainable-development/blended-finance-principles/*

[190] *How EST Asia can contribute to Rio+20 outcomes - "The future we want"- by mobilising private sector financing for the realisation of next generation solutions for sustainable, low carbon transport in Asia. (2014, November). Integrated conference of better air quality (BAQ) and eighth regional environmentally sustainable transport (EST) forum in Asia, Colombo, Sri Lanka*

Policy as a driver- While the drive from government policy and initiatives may not have benefit of organic market support, it has a significant upside on a systemic, long-term view. Referring back to the HSBC study [191], we see over 40 per cent of Asian issuers expect to substantially reallocate capital away from activities challenged by environmental and social issues, or towards activities that promote positive environmental or social outcomes, in the next five years. This is significantly ahead of the global average of 32 per cent. Hence, using policy, better governance and management can be effectively utilised to improve returns from SCP initiatives as is the case with result-based waste management programmes in Nepal [192].

Issues with regards to lack of uniformity and trust in disclosures can also be resolved using regulatory instruments. For instance, in India, the Securities and Exchange Board of India (SEBI) made it a statutory requirement for companies above a threshold of market capitalisation to release Business Responsibility Reporting (BRR)[193]. Over the years, reporting standard have evolved to keep up with evolving understanding of sustainability, but these practices are yet to trickle down in earnest among small-scale and non-profit oriented SCP initiatives. Growing transparency in processes will slowly but surely be followed by growing access to finance from diverse sources.

[191] *https://www.gbm.hsbc.com/insights/sustainable-financing/sfi-survey-asia*
[192] *https://doi.org/10.1371/journal.pone.0231933*
[193] *https://www.gbm.hsbc.com/insights/sustainable-financing/sfi-survey-asia*

Chapter

7 Conclusion

Chapter 7: Conclusion

The preceding six chapters in this report emphasize on the importance of SCP interventions across the major economic sectors, viz. agriculture, industry, energy, tourism, transport, solid waste and infrastructure across the selected South Asian and South-East Asian countries, the major financing requirements, financing instruments, tools (both public and private) to fund these interventions.

The report also emphasizes on the specific SCP finance policies in the selected countries and illustrate as to how these policies support in facilitating SCP finance. Chapter 7 of the report presents various case studies to showcase the role of business models, policies, technologies as enablers to mobilise private sources of finance. The baseline surveys presented in chapter 7 of the report clearly brings out the state of SCP financing, the key challenges and the role of enablers to address these challenges. Based on the assessments in Chapters 4, 5 and 6, some of the generic recommendations are presented in the subsequent section.

First, local currency bond markets are a stable source of long-term finance for infrastructure as it is not subject to exchange rate risks. For example, IFC has issued rupee denominated masala bonds for funding infrastructure. Hence, if there is a fall in the value of rupee, the investor bears the loss. These local currency bond markets need to be further developed in other South Asian nations. At the same time, it is also important to increase transparency through ESG disclosure requirements in bond exchanges and financial regulations.

Second, SCP finance is not an established or recognised term familiar to the financial community in developing and emerging economies. There are significant definitional inadequacies as to what comprise SCP finance and related terminologies such as climate finance, finance for sustainability, green finance etc. This is more because SDG 12 focusing on SCP doesn't clearly indicate as to which are the broad economic activities that can be labelled as SCP. Hence, the policy framework on sustainable finance needs to clearly demarcate the financing nitty-gritties on SCP. Moreover, the functional overlaps among the related terminologies need to be addressed. In addition, awareness needs to be raised on SCP financing issues through capacity building workshops.

Third, market practices in the form of disclosures, reporting, analysis and risk management needs to be enhanced. These market practices are extremely pertinent to reduce information asymmetry and mobilise private finance. Some of the existing good practices are mentioned below:

- Good practice - Bank of Bangladesh requires banks and NBFCs to conduct environmental risk management
- Directive on Promoting Green Credit Growth and Environmental Social Risks Management issued by State Bank of Vietnam in Credit Granting Activities, requiring financial institutions to integrate environmental factors into their lending decisions.

Fourth, top-down approaches to mobilise private finance for sustainability has been successful in several economies. In most of the developed and developing economies the mandate to integrate sustainability into governance frameworks across financial intermediaries are initiated by the central banks. For example, the central banks of Bangladesh, Indonesia and India termed as the Bangladesh Bank, Bank Indonesia and Reserve Bank of India have initiated several sustainability directives as priority actions to facilitate sustainable finance. Most of these initiatives have a direct impact on SCP finance in these economies.

Fifth, multi-stakeholder collaborations and stakeholder dialogues needs to be encouraged to promote SCP finance. This posits immense potential to facilitate collective decision-making process. One example of a good practice is that of the Indonesian financial services regulators OJK which has established a multi-stakeholder task force to promote and further develop its Roadmap for Sustainable Finance through dialogue.

Sixth, directing policy led financing: The central banks of several countries have included finance for clean energy-renewable energy into priority sector lending (PSL), thereby directing other commercial banks to integrate this into their funding priorities. For example, India has included renewable energy into PSL to provide loans up to 30 crores. These limits have almost doubled since inception. Another example is that of Bangladesh wherein the Bank of Bangladesh requires other banks to allocate 5% lending to green projects; RBI has included RE into priority sector lending projects; Quotas for priority areas.

Seventh, innovative SCP practices in stock markets: Stock markets are the engines of growth in both developed and developing economies. With innovative sustainable investment products, sustainability disclosure guidelines to being party to international sustainable finance guidelines, stock markets have a prominent role to play, especially in the area of SME financing. Very recently the securities and market regulator in India, SEBI has come out with a draft guideline on the idea of social stock exchange (SSE) in which SME's (which is essentially an informal sector in India) can raise money through after being listed on the exchange. This will not only enable them to raise money, but it will also promote disclosures for investors, thereby enabling transparency. However, SSEs are in the very nascent stage of evolution. Out of the total of seven SSE's set up in the world, only the SSEs of Canada, Singapore and Jamaica are active.

Eighth, harnessing public balance sheet: Some of the ways to do this is to create incentives for investors such as the feed-in-tariff programme of Thailand which has capacitated clean energy in the country, preferential central bank refinancing, such as making provisions of loan for green projects and access the central bank's refinancing arrangement through passing on preferential interest rates to clients as in Bangladesh, providing bond guarantees (full and partial) to reduce the payment risks of underlying borrowers etc. (ADB, 2018).

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Annex

Annex 1: Methodology

i. Sources of Data- Primary and Secondary

Primary sources will pertain to stakeholder interviews and inputs sought from the Regional Dialogue on SDG 12 Financing, held on 17th March 2022.

Secondary sources will pertain to desk review and available data sources such as academic articles, papers, research reports, podcasts and blogs.

ii. Stakeholders:

The sample of stakeholders comprise financing executives from commercial banks, multilateral development banks and NGO's in the policy space. A total of 10 stakeholders have been consulted for the study through a purposive sampling.

iii. Tools for Data Collection

Interview schedules with open-ended questions has been used for the stakeholder interactions. In specific cases, stakeholders for relevant cases have been considered. The interview schedules have been provided in the subsequent annexes.

iv. Type of Data

Most of the data used for this study is qualitative and descriptive in nature.

v. Data Analysis

Analysis of relevant primary data has been conducted through a systematic review of literature. Baseline surveys and case studies have been designed to draw inferences.

vi. Purview of SCP

For maintaining consistency on activities pertaining to SCP, UNEP Report on the ABC of SCP has been adhered to. The following figure illustrates this.

Source: UNEP (2010). ABC of SCP

Annex 2: Interview Schedules

Annex 2.1

Interview Question - Energy

1. What are the World Bank (WB) funded RE/Energy Conservation/EE/Clean Energy projects undertaken in Indonesia? Is it possible to get a comprehensive list of these projects?
2. What are the funding trends in the last 5 years? Is it possible to get an approx. estimate of the volume of funding?
3. What are the terms and conditions associated with these types of funding?
4. What are the different types of funding/financial products offered by WB?
5. Being a financing entity, which are the key due diligence factors considered by you when you fund any sustainable initiative? /How do you disburse the funds?
6. What is the % of funds delegated towards sustainable consumption and production (SCP) activities?
7. Are there any monitoring and reporting systems in place? How do you evaluate the impacts created?
8. At present, what do you think is the total volume of private investments targeted towards SCP activities in Indonesia?
9. Do you think the policy framework in Indonesia have been supportive? Why or why not?
10. What kind of challenges do you face in terms of impacts monitoring, reporting and dialogue with your key stakeholders?
11. What do you think can be the primary motivations of private investments in this space?
12. What can be some of the more innovative forms of financing targeted for the sector?

Annex 2.2

Interview Question - Academicians/Researchers on Sustainable Finance

1. What according to you are the key enablers of sustainable investing in sustainable consumption and production (SCP) activities in China?
2. Do you see any changes in the sustainable finance landscape in China in the past 5-10 years? What have been the key trends?
3. What according to you are the key risks associated with SCP Financing in China?
4. What has been the role of policy makers in facilitating the move towards SCP Financing? Are there any overarching policies focusing on resource efficiency/energy efficiency?
5. What are some of the definitional discrepancies on SCP Financing? Does existing policies address those discrepancies?
6. In continuation to the above questions, what have been the key aspects of such policies which specifically focus on sustainable finance in China?
7. Do you think there needs to be a transition from grants and aid-based financing to market based financing in China?
8. Do you think the Chinese capital market is ready to invest in SCP? Why or why not?
9. What can be the primary motivations for institutional investors to drive private investments in China?
10. Which funding models have been more effective- public, private or blended financing mechanisms?
11. Which sectors according to you are driving more public funds for SCP?
12. Similarly, which sectors are garnering private investments?
13. What according to you are the major barriers to sustainable finance and investments focusing on SCP?

Annex 2.3

Interview Question - Financing Stakeholders

1. What are the Sustainable Consumption and Production (SCP) initiatives and activities undertaken by your organization? And which sectors?
2. Are you a signatory to any sustainable investment initiative such as the Climate Principles/Equator principles/ UNPRI/any other?
3. Being an accredited agency of the GCF, what are the terms & conditions associated with the grants you receive?
4. Being a financing entity, which are the key due diligence factors considered by you when you fund any sustainable initiative? /How do you disburse the funds?
5. What are some of the sustainable financing products you offer?
6. What is the % of funds delegated towards SCP activities?
7. What are the key considerations while you disburse loans for sustainable activities?
8. Are there any monitoring and reporting systems in place? How do you evaluate the impacts created?
9. At present, what do you think is the total volume of private investments targeted towards SCP activities in Bangladesh?
10. Do you think the policy framework in Bangladesh have been supportive? Why or why not?
11. What kind of challenges do you face in terms of impacts monitoring, reporting and dialogue with your key stakeholders?
12. What do you think can be the primary motivations of private investments for SCP in the textile sector?
13. What can be some of the more innovative forms of SCP financing targeted for the sector?

Annex 2.4

Interview Question - INFRASTRUCTURE & CONSTRUCTION SECTOR

1. What are the Sustainable Consumption and Production (SCP) initiatives and activities undertaken by your organisation in the Infrastructural sector?

2. What is the level of awareness in the country in terms of adoption of sustainable practices in the construction sector such as sustainable building materials? How has funding for SUSBUILD helped to improve that?

3. Are there any policies which focus on the aspects of SCP financing, especially in the construction sector of Bangladesh?

4. What are the various forms and repayment terms (if any) of finance you receive? Who are the funding organisations (% of international funds vis-à-vis national funds)? What is the total funding received under various projects/ initiatives (targeted to SCP activities)?

5. What have been the financial enablers vis-a-vis challenges for this project or similar initiatives?

6. What have been the overall environmental, social, economic (e.g., employment generation) and SCP impacts (e.g., energy efficiency) of this project?

7. What kind of challenges do you face in terms of impacts monitoring, reporting and dialogue with financial institutes, private equity etc?

8. Once the tenure of the project is over, how do you ensure that the key benefits accrued through the project/initiatives are financially sustained?

9. What do you think can be the primary motivations of private investments for SCP in the construction sector?

10. As a continuation to the above question, do you think institutional investments can be targeted for funding sustainable construction? If yes, why?

11. What can be some of the more innovative forms of SCP financing targeted for the sector?

12. How COVID19 has affected the construction sector's financing in Bangladesh? Has the demand for sustainable building materials been affected?

Annex 2.5

Interview Question - Tourism in Bhutan

1. What have been the SCP initiatives and subsequent activities undertaken by your organisation in the Tourism sector?
2. What is the level of awareness in the country terms of adoption and capacity development for sustainable practices in tourism? How has funding for SUSTOUR helped improve that?
3. Are there any other policies which focus on the aspects of Sustainable Consumption and Production (SCP) financing?
4. How has the High Value, Low Volume tourism policy evolved over the year, particularly considering growing global attention towards SCP policies?
5. Are there any specific policies that address the aspects of financing to promote sustainable tourism?
6. What are the various forms of finance you receive? Who are the funding organisations (% of international funds vis-à-vis national funds)? What is the total funding received under various projects/initiatives (targeted to SCP activities)?
7. What have been the financial enablers vis-a-vis challenges for this project or similar initiatives?
8. What have been the overall environmental, social and economic and SCP impacts of this project?
9. What kind of challenges do you face in terms of impacts monitoring, reporting and dialogue with financial institutes, private equity etc?
10. Once the tenure of the project is over, how do you ensure that the key benefits accrued through the project/initiatives are financially sustained?
11. What do you think can be the primary motivations of private investments for SCP in the tourism sector?
12. As a continuation to the above question, do you think institutional investments can be targeted for funding sustainable tourism? If yes, why?
13. What can be some of the more innovative forms of SCP financing targeted for the sector?
14. How COVID19 affects the tourism sector's financing?

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